Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

signed mod

1 message

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Jun 16, 2022 at 4:09 PM
To: Strader Gower <strader.c.gower@wv.gov>

I signed this modification. If you want to sign it to go ahead. Then send back to Brittany either way.

David Reinbeau MSH 201H Mod.pdf
2977K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Site Photos of API WELL NO. 47-077-00030-0000 TERRA ALTA WELL 7398

1 message

Joann Lewis <joann.lewisfarm@gmail.com> Thu, Feb 3, 2022 at 8:14 AM
To: CHARLES.T.BREWER@wv.gov, "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>, JAMES.A.MARTIN@wv.gov
Cc: ralph@lewisfarmwv.com

I will send additional photos with comments indicating the location of the cabin and other pertinent information.

--
7582 Saltlick Road
Terra Alta WV 26764
3047892232
joann@lewisfarmwv.com

3 attachments

Pit A.jpg
1130K

Wide angle work area 7398.jpg
5432K

slope Pit A.jpg
5138K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Sonia R MSH 5H

3 messages

Brittany Woody <Brittany_Woody@swn.com> Mon, Apr 25, 2022 at 9:07 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Attached are the updated 6B pages for your signature.

Thanks!

Brittany Woody

Senior Regulatory Analyst

Southwestern Energy

1300 Fort Pierpont Dr., Suite 201

Morgantown, WV 26508

Office: 304-884-1613

Cell: 304-997-2598

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Sonia R MSH 5H 6B.pdf
1739K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Apr 26, 2022 at 7:52 AM
To: Brittany Woody <Brittany_Woody@swn.com>

Signed permit sheets. Have a good day
[Quoted text hidden]

Sonia R MSH 5H 6B.pdf
1823K

Brittany Woody <Brittany_Woody@swn.com> Tue, Apr 26, 2022 at 7:58 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thanks! You, too!

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Speece NOV

9 messages

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Jan 6, 2022 at 3:07 PM
To: Josh Boyda <Josh_Boyda@swn.com>
Cc: Brittany Woody <Brittany_Woody@swn.com>

Josh,

I am still waiting for the NOV number but will send you what I have so that you can coordinate the remediation that is required. Any questions let me know

Regards,

Gayne

09-00186.pdf
172K

Brittany Woody <Brittany_Woody@swn.com> Mon, Jan 10, 2022 at 2:19 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Josh Boyda <Josh_Boyda@swn.com>

Hey Gayne-

Just wanted to check and see if this has this been assigned an NOV number, yet?

[Quoted text hidden]
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Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Jan 10, 2022 at 3:13 PM
To: Brittany Woody <Brittany_Woody@swn.com>

Yes. NOV #11770
[Quoted text hidden]

Brittany Woody <Brittany_Woody@swn.com> Mon, Jan 10, 2022 at 3:26 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Do you have the updated form with this number on it?

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Jan 10, 2022 at 4:07 PM
To: Brittany Woody <Brittany_Woody@swn.com>

[Quoted text hidden]

NOV #11770.pdf
836K

Brittany Woody <Brittany_Woody@swn.com> Mon, Jan 10, 2022 at 4:14 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thanks!

[Quoted text hidden]
[Quoted text hidden]

Josh Boyda <Josh_Boyda@swn.com> Wed, Jan 12, 2022 at 11:21 AM
To: Gayne Knitowski <gayne.j.knitowski@wv.gov>
Cc: Chad Keilman <Chad_Keilman@swn.com>

Good morning Gayne,

Following up to our earlier phone call,
I am requesting an extension on the NOV we received at SWN's Thurman Speece pad. If you need any further details, please let me know.

Thank you,
Josh Boyda

Sent from my iPhone

On Jan 10, 2022, at 2:19 PM, Brittany Woody <Brittany_Woody@swn.com> wrote:

[Quoted text hidden]

[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Jan 12, 2022 at 11:28 AM
To: Josh Boyda <Josh_Boyda@swn.com>

Yes, I will grant an extension. I am going to try extended it until April and I will be getting you a hard copy in the next day or two. Also are you still getting hits on the groundwater?
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Jan 13, 2022 at 3:00 PM
To: Josh Boyda <Josh_Boyda@swn.com>
Cc: Chad Keilman <Chad_Keilman@swn.com>, Brittany Woody <Brittany_Woody@swn.com>

Josh,

Attached is the extension to abatement time for NOV. 11770. It is good for 30 days and we will talk to see where that will get us in the process.

Regards,

Gayne

On Wed, Jan 12, 2022 at 11:21 AM Josh Boyda <Josh_Boyda@swn.com> wrote:
[Quoted text hidden]

exabate1.pdf
110K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Spud & Surface Casing and Cement Notifications Brian Teslovich BRK 1 H

1 message

sdc40 <sdc40@swn.com> Sun, Nov 14, 2021 at 12:50 PM
To: "GAYNE.J.KNITOWSKI@WV.GOV" <GAYNE.J.KNITOWSKI@wv.gov>
Cc: Dave Bert <Dave_Bert@swn.com>, Derek Motley <Derek_Motley@swn.com>, sdc40 <sdc40@swn.com>

This email serves to notify you of our “Intent to Spud, Set and Cement Surface Casing” in the well detailed below. Please let us know if you have any questions.

- Well Name: Brian Telsovich BRK 1H
- API #: 47-009-00-325-00-00
- Proposed “Spud” Date and Time: 11/15/2021 @ 22:00 hrs.
- Proposed depth for setting surface casing: +/- 320’
- Proposed date for setting surface casing: 11/16/2021
- Casing size & type: 13.375” 54.5# J-55 BTC

SDC 40

Office: 304-884-1864

WSS Days: Chris Johnson 870-598-7390

WSS Nights: Jeff Hill 501-428-2672

sdc40@swn.com

Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Surface Casing Cement Report, Betty Schafer MSH 405

1 message

sdc40 <sdc40@swn.com> Sat, Jan 8, 2022 at 3:28 PM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Joel Still <Joel_Still@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Danny Martinez <Danny_Martinez@swn.com>

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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Betty Schafer MSH 405H Surface Treatment Report.pdf
259K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Surface Cement Report / Details - SWN A WTZ 1

1 message

SDC41 <SDC41@swn.com> Tue, Jan 4, 2022 at 6:58 AM
To: "gayne.j.knitowski@wv.gov" <gayne.j.knitowski@wv.gov>, Brad Nelson <brad_nelson@tcenergy.com>, "james_amos@tcenergy.com" <james_amos@tcenergy.com>, "adam_chain@tcenergy.com" <adam_chain@tcenergy.com>, "luke_stull@tcenergy.com" <luke_stull@tcenergy.com>
Cc: Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

Hello All,

13 3/8” Surface Casing Cementing Details – SWN A WTA 1

Load lines with 5 bbls and pressure test T/700 psi low and 2000 psi high, all tests held for 5 mins. Pump 10 bbls of fresh water to load casing, mix/pump 25 bbls of gel spacer @ 8.62 ppg followed by 10 bbls fresh water to load casing and clear casing shoe, mix/pump 80 bbls with 372 sks of "Class A" cement @ 15.6 ppg, 1.12 yld, 4.80 gal/sk w/2% BWOB S001. Shut down, drop top plug and displace w/53 bbls fresh water. Bump plug w/900 psi (700 psi over FCP) @ 22:15 hrs 01/03/2022. Release pressure, check floats, floats were weeping,shut in head, will recheck after 3 hrs. Full returns after circ. was established throughout the job. Circulated 18 bbls of good cement to surface.

Regards,

SDC 41

Day WSS: Ben Waldner 620-330-7879

Night WSS: Daniel Woody 307-272-8063

Rig Office Cell 724-714-3308

Office: 713-423-6942 / 281-833-2645

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Surface Cement Report - SWN A WTZ 1.pdf
283K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN - Brownlee Well Pad

1 message

Kees, Kelly L <kelly.l.kees@wv.gov> Fri, Nov 19, 2021 at 10:38 AM
To: Brittany Woody <brittany_woody@swn.com>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I have reviewed the construction plans for the above referenced well pad as prepared by CEC and received by the WVDEP-Office of Oil & Gas on and I have the following comments:

1. Please provide fill specifications in the plans as provided in 35CSR8 5.5c

2. Please provide location and detail for a mountable berm for entrance in to the pad

3. A reclamation sequence needs to be provided. It will need to contain information on whether the berm and sumps will remain in place, or will they be removed or breached, if the sumps remain how will they be maintained. A berm breach detail may need to also be provided.

4. Were the Bioretention areas required by the city? Can you give me a little more information on how they were designed? Volumes, etc?

5. Please label structures with what they actually are not just existing structure.

* as a side note, can you save me a .KMZ file for the access road and pad? it is the file you can import into google earth.

If you have any questions, please do not hesitate to contact me. Please return the revised plan set to me as a pdf.

Kelly L. Kees, P.E.
Office of Oil and Gas
WVDEP
601 57th St SE,
Charleston, WV 25304
(304)926-0440

--
Kelly L. Kees, P.E.
Office of Oil and Gas
WVDEP
601 57th St SE,
Charleston, WV 25304
(304)926-0440

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN - David Reinbeau Approved Plans

2 messages

Kees, Kelly L <kelly.l.kees@wv.gov> Mon, Apr 4, 2022 at 2:29 PM
To: Brittany Woody <brittany_woody@swn.com>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I have reviewed the revised construction plans for the above referenced well pad as prepared by Ascent Consulting and Engineering and received by the WVDEP-Office of Oil & Gas on 3/28/2022 and I am approving these plans. Sheets 1 and 5 of these approved plans are to be submitted with additional well work applications for this pad prior to its construction. After the pad is constructed, do an as-built survey and submit the as-built plans with well work applications at that time. Please note, my approval of the construction plans does not allow you to begin construction of the well pad. Construction cannot begin until a well work permit is issued. If you have any questions, please do not hesitate to contact me.

--
Kelly L. Kees, P.E.
Office of Oil and Gas
WVDEP
601 57th St SE,
Charleston, WV 25304
(304)926-0440

2022-4-4 SWN-DAVID REINBEAU APPROVED PLANS PGS 1 AND 5.pdf
2187K

Brittany Woody <Brittany_Woody@swn.com> Mon, Apr 4, 2022 at 2:30 PM
To: "Kees, Kelly L" <kelly.l.kees@wv.gov>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thanks!

[Quoted text hidden]

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN - Environmental Contact Info

2 messages

Josh Boyda <Josh_Boyda@swn.com> Wed, Oct 27, 2021 at 8:54 AM
To: "Gayne.J.Knitowski@wv.gov" <Gayne.J.Knitowski@wv.gov>

Good morning Gayne,

I just wanted to follow up on our phone conversation yesterday and send you my email address. I will continue to keep you in the loop as far a progress on the David Reinbeau gas well location investigation and remediation.

Thank you,

Joshua Boyda

Senior Environmental Specialist – West Virginia Division

Southwestern Energy

1300 Fort Pierpont Dr.

Suite 201

Morgantown, WV 26508

Office: 304-884-1713

Cell: 501-428-3636

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Oct 27, 2021 at 2:51 PM
To: Josh Boyda <Josh_Boyda@swn.com>

Josh, I will find out about the injuries. That generated from Charleston and that is any information I gave them..
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN - Shannon Fields Engineering Plan NOD

3 messages

Kees, Kelly L <kelly.l.kees@wv.gov> Tue, Mar 8, 2022 at 11:24 AM
To: Brittany Woody <brittany_woody@swn.com>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, Cragin Blevins <cragin.blevins@wv.gov>, Wade A Stansberry <wade.a.stansberry@wv.gov>

I have reviewed the construction plans for the above referenced well pad as prepared by Ascent and received by the WVDEP-Office of Oil & Gas on 2/3/22 and I have the following comments:

1. A wetland waiver will be needed for this project due to the proximity of W1, W4 and W5. Please submit the wetland waiver request form. Also for the waiver a distance needs to be labeled on the plans from the nearest edge of the wetland to the LOD. All E&S controls need to be doubled near the wetland.

2. The plans provide a copy of the general notes on page 2. Within those notes you need to have the compaction specs needed to construct the access road and well pad. The minimum compaction specs the office of oil and gas require are as follows: Fills will be compacted to 95% of Standard Proctor density (ASTM D-698). Fill lift thicknesses will be 12 inch maximum, nothing frozen or too wet. Fills will be free of objectionable material nothing larger than 6 inches. Rock fill lifts will be no greater than 36 inches.

3. On page 33 there is a sump detail. Within the detail you need a note stating “There will be no discharge from the well pad during drilling activities”.

4.On the reclamation plans found on page 22 you need to provide a reclamation sequence. Within the sequence you need to provide any compaction specs needed to reclaim the sight. The maximum fill lift thickness will be 24 inches. Reclamation fills will be compacted to 90% of Standard Proctor density (ASTM D-698).

If you have any questions, please do not hesitate to contact me. Please return the revised plan set to me as a pdf.

Kelly L. Kees, P.E.
Office of Oil and Gas
WVDEP
601 57th St SE,
Charleston, WV 25304
(304)926-0440

Brittany Woody <Brittany_Woody@swn.com> Mon, Mar 14, 2022 at 11:22 AM
To: "Kees, Kelly L" <kelly.l.kees@wv.gov>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, Cragin Blevins <cragin.blevins@wv.gov>, Wade A Stansberry <wade.a.stansberry@wv.gov>

Please see our response below in red..

From: Kees, Kelly L <kelly.l.kees@wv.gov>
Sent: Tuesday, March 08, 2022 11:25 AM
To: Brittany Woody <Brittany_Woody@SWN.COM>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>; Knitowski, Gayne J <gayne.j.knitowski@wv.gov>; Newlon, Douglas C

<douglas.c.newlon@wv.gov>; Cragin Blevins <cragin.blevins@wv.gov>; Wade A Stansberry <wade.a.stansberry@wv.gov>
Subject: [External] SWN - Shannon Fields Engineering Plan NOD

I have reviewed the construction plans for the above referenced well pad as prepared by Ascent and received by the WVDEP-Office of Oil & Gas on 2/3/22 and I have the following comments:

1.A wetland waiver will be needed for this project due to the proximity of W1, W4 and W5. Please submit the wetland waiver request form. Also for the waiver a distance needs to be labeled on the plans from the nearest edge of the wetland to the LOD. All E&S controls need to be doubled near the wetland.

Wetland waiver request form is attached. Labels have been added to the plans (sheet 7) showing distances from the wetlands to the LOD. Also, the compost filter sock upslope of wetlands 4 and 5 has been doubled.

2. The plans provide a copy of the general notes on page 2. Within those notes you need to have the compaction specs needed to construct the access road and well pad. The minimum compaction specs the office of oil and gas require are as follows: Fills will be compacted to 95% of Standard Proctor density (ASTM D-698). Fill lift thicknesses will be 12 inch maximum, nothing frozen or too wet. Fills will be free of objectionable material nothing larger than 6 inches. Rock fill lifts will be no greater than 36 inches.

General Notes, Sheet 2 has been revised to note minimum fill specs. See note #8 under general notes.

3. On page 33 there is a sump detail. Within the detail you need a note stating “There will be no discharge from the well pad during drilling activities”.

Note has been added to Sheet 33, stating “the dewatering valve shall remain closed during drilling and completion operations. any water captured during the drilling and completion operations shall be tested prior to being discharged and removed from the pad. after drilling and completion operations are complete, the valve will be opened by designated southwestern energy personnel only.”

4.On the reclamation plans found on page 22 you need to provide a reclamation sequence. Within the sequence you need to provide any compaction specs needed to reclaim the sight. The maximum fill lift thickness will be 24 inches. Reclamation fills will be compacted to 90% of Standard Proctor density (ASTM D-698).

Reclamation sequence of construction has been added to sheet 22 as is shown as follows:

1. **Install silt fence or compost filter sock downslope of all areas to be disturbed.**
2. **Spread topsoil on permanent outslopes and disturbed areas, seed and mulch as needed.**
3. **Inspect culverts and sumps. clean as necessary. clean sediments from ditches/channels as needed and remove check dams/ filters.**
4. **Remove compost filter sock and temporary control structures in areas which are protected with a minimum 70% vegetation cover.**
5. **Breach pad berms as shown on reclamation plan.**
6. **Any reclamation fills are to be placed at a maximum lift thickness of 24 inches and**

compacted to 90% of standard proctor density (astm d-698).

If you have any questions, please do not hesitate to contact me. Please return the revised plan set to me as a pdf.

Kelly L. Kees, P.E.

Office of Oil and Gas

WVDEP

601 57th St SE,

Charleston, WV 25304

(304)926-0440

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Shannon Fields Wetland_Perennial Stream Waiver.pdf
866K

Brittany Woody <Brittany_Woody@swn.com> Mon, Mar 14, 2022 at 2:30 PM
To: "Kees, Kelly L" <kelly.l.kees@wv.gov>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, Cragin Blevins <cragin.blevins@wv.gov>, Wade A Stansberry <wade.a.stansberry@wv.gov>

It might help if I also send you the updated plans. 😊

[Quoted text hidden]
[Quoted text hidden]

2326-SWN-SHANNON FIELDS CONST PLANS.pdf
23781K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN A pad: SWN A CBL's and Toes

1 message

Andrea Bond <Andrea_Bond@swn.com> Tue, Mar 29, 2022 at 9:03 AM
To: Kenneth L Greynolds <kenneth.l.greynolds@wv.gov>
Cc: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

FYI – See below regarding the SWN A WTZ Pad.

Do you require detailed updates like the below?

Thank you,

Andrea

From: Steve Jones <Steve_Jones@SWN.COM>
Sent: Tuesday, March 29, 2022 5:37 AM
To: Andrea Bond <Andrea_Bond@SWN.COM>
Subject: SWN A CBL's and Toes

Good morning Andrea,

I just wanted to reach out and let you know that we will be taking care of bond logs on the SWN A today and doing casing integrity tests and initiating toe sleeves tomorrow 3/30 on the 1H,

201H, 401H, and 601H. Based on your email to the state, it seems you were already aware, just wanted to mention it.

Thank you,

From: Andrea Bond <Andrea_Bond@SWN.COM>
Sent: Tuesday, March 22, 2022 08:53
To: Kenneth L Greynolds <kenneth.l.greynolds@wv.gov>
Cc: Knitowski, Gayne J <gayne.j.knitowski@wv.gov>; WVD - WSS <WVD-WSS@swn.com>; Liz Gee <liz_gee@swn.com>; Denise Grantham <Denise_Grantham@SWN.COM>; Carla Suszkowski <Carla_Suszkowski@SWN.COM>; Aaron Balderson <Aaron_Balderson@SWN.COM>; Kevin Porsch <Kevin_Porsch@SWN.COM>; Nick Flesher <Nick_Flesher@SWN.COM>; Oana Ivanescu <Oana_Ivanescu@SWN.COM>; dep.water.use@wv.gov
Subject: Pad Prep Date - SWN FRAC NOTIFICATION - SWN A WTZ PAD

Good morning,

I understand that you would also like the pad prep start date included.

The Pad prep start date the SWN A WTZ Pad (4 wells listed in below email) is 3.28.2022.

Please advise if you need any further information.

Andrea

Andrea Bond

Staff Drilling and Completions Analyst

Northwest Appalachia Team - NEAPP

Southwestern Energy

10000 Energy Drive

Spring, TX 77389

Direct: 832 (SWN) 796.7428

Cell: 832.302.6921

Andrea_Bond@SWN.com

www.swn.com

From: Andrea Bond <Andrea_Bond@SWN.COM>
Sent: Monday, March 21, 2022 4:12 PM
To: Kenneth L Greynolds <kenneth.l.greynolds@wv.gov>
Cc: Knitowski, Gayne J <gayne.j.knitowski@wv.gov>; WVD - WSS <WVD-WSS@swn.com>; Liz Gee <liz_gee@swn.com>; Denise Grantham <Denise_Grantham@SWN.COM>; Carla Suszkowski <Carla_Suszkowski@SWN.COM>; Aaron Balderson <Aaron_Balderson@SWN.COM>; Kevin Porsch <Kevin_Porsch@SWN.COM>; Nick Flesher <Nick_Flesher@SWN.COM>; Oana Ivanescu <Oana_Ivanescu@SWN.COM>; dep.water.use@wv.gov
Subject: SWN FRAC NOTIFICATION - SWN A WTZ PAD
Importance: High

SWN Production LLC submits this notification to the DEP regarding our plan to stimulate the following wells on the Estimated Frac Start Date of 4/18/2022.

- **SWN A WTZ 1H**
- **SWN A WTZ 201H**

- **SWN A WTZ 401H**
- **SWN A WTZ 601H**

Thank you,

Andrea

Andrea Bond

Staff Drilling and Completions Analyst

Northwest Appalachia Team - NEAPP

10000 Energy Drive

Spring, TX 77389

Direct: 832 (SWN) 796.7428

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Andrea_Bond@SWN.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN- Brownlee Pad Approved Engineering plans

2 messages

Kees, Kelly L <kelly.l.kees@wv.gov> Tue, Feb 8, 2022 at 10:18 AM
To: Brittany Woody <brittany_woody@swn.com>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Wade A Stansberry <wade.a.stansberry@wv.gov>, Cragin Blevins <cragin.blevins@wv.gov>

I have reviewed the revised construction plans for the above referenced well pad as prepared by CECand received by the WVDEP-Office of Oil & Gas on 11/30/2021 and I am approving these plans. Sheets 1 and 13 of these approved plans are to be submitted with additional well work applications for this pad prior to its construction. After the pad is constructed, do an as-built survey and submit the as-built plans with well work applications at that time. Please note, my approval of the construction plans does not allow you to begin construction of the well pad. Construction cannot begin until a well work permit is issued. If you have any questions, please do not hesitate to contact me.

--
Kelly L. Kees, P.E.
Office of Oil and Gas
WVDEP
601 57th St SE,
Charleston, WV 25304
(304)926-0440

2022-2-8 SWN - Brownlee Approved Plans pgs 1 and 13.pdf
1973K

Brittany Woody <Brittany_Woody@swn.com> Tue, Feb 8, 2022 at 10:19 AM
To: "Kees, Kelly L" <kelly.l.kees@wv.gov>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Wade A Stansberry <wade.a.stansberry@wv.gov>, Cragin Blevins <cragin.blevins@wv.gov>

Thank you!

[Quoted text hidden]

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN- Carl Rotter AST Modification

2 messages

Kees, Kelly L <kelly.l.kees@wv.gov> Tue, Mar 1, 2022 at 12:36 PM
To: Casey Bartkus <Casey_Bartkus@swn.com>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Attached are the approved modification plans and memos for the subject well pad. If you have any questions please let me know.

--
Kelly L. Kees, P.E.
Office of Oil and Gas
WVDEP
601 57th St SE,
Charleston, WV 25304
(304)926-0440

2 attachments

2022-3-1 SWN-Carl Rotter Tank Pad Modification Plans pgs 1 5 and 6.pdf
1538K

2022-3-1 SWN - Carl Rotter Modification memos.pdf
434K

Casey Bartkus <Casey_Bartkus@swn.com> Tue, Mar 1, 2022 at 12:48 PM
To: "Kees, Kelly L" <kelly.l.kees@wv.gov>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thank you very much Kelly!

Casey Bartkus

Senior Staff Environmental Specialist – SW Appalachia

SWN Southwestern Energy

1300 Fort Pierpont Drive

Suite 201

Morgantown, WV 26508

Mobile: 304-406-2051

Direct: 304-884-1666

Email: Casey_Bartkus@SWN.com

[Quoted text hidden]

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN Carl Rotter OHI Well Pad Modification Request

1 message

Casey Bartkus <Casey_Bartkus@swn.com> Tue, Feb 8, 2022 at 11:54 AM
To: "Kees, Kelly L" <kelly.l.kees@wv.gov>, Charles T Brewer <charles.t.brewer@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>
Cc: Brittany Woody <Brittany_Woody@swn.com>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Good afternoon Kelly,

SWN is planning to modify the Carl Rotter well pad lease road in Ohio County to accommodate a widening of the road and a pulloff area to accommodate a reuse AST and offloading point for the upcoming frac. I have attached the modification plans, the plans that have been reviewed and signed by Gayne Knitowski, and the signed exhibit from the agreement executed with the landowner for the changes.

Please review the attached and let me know if you have any questions or concerns.

Thank you!

Casey Bartkus

Senior Staff Environmental Specialist – SW Appalachia

SWN Southwestern Energy

1300 Fort Pierpont Drive

Suite 201

Morgantown, WV 26508

Mobile: 304-406-2051

Direct: 304-884-1666

Email: Casey_Bartkus@SWN.com

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3 attachments

312708-Carl Rotter Tank Pad Modification Plans.pdf
3215K

312708-Carl Rotter Tank Pad Modification Plans_G Knitowski Signed.pdf
8175K

SIGNED-Rotter CJ et ux TWL TWS AST 20210925.pdf
514K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN Carl Rotter OHI Well Pad Modification

3 messages

Casey Bartkus <Casey_Bartkus@swn.com> Mon, Feb 7, 2022 at 2:30 PM
To: "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>
Cc: Josh Boyda <Josh_Boyda@swn.com>, Brittany Woody <Brittany_Woody@swn.com>

Gayne,

We are planning to modify the Carl Rotter well pad lease road in Ohio County to accommodate a widening of the road and a pulloff area to accommodate a reuse AST and offloading point for the upcoming frac. Since we are modifying the LOD in this instance and adding an AST, I wanted to run the attached plans by you for review and signature before sending them to engineering in Charleston. Please take a look and let me know if you have any questions, or if you feel that a site visit is needed for review.

Thank you for your help!

Casey Bartkus

Senior Staff Environmental Specialist – SW Appalachia

SWN Southwestern Energy

1300 Fort Pierpont Drive

Suite 201

Morgantown, WV 26508

Mobile: 304-406-2051

Direct: 304-884-1666

Email: Casey_Bartkus@SWN.com

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312708-Carl Rotter Tank Pad Modification Plans.pdf
8182K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Feb 8, 2022 at 8:59 AM
To: Casey Bartkus <Casey_Bartkus@swn.com>

Casey,

Looked pretty straight forward so I am ok with the plan. Attached are the plans with my sign off. Have a good day.

Regards,

Gayne
[Quoted text hidden]

312708-Carl Rotter Tank Pad Modification Plans.pdf
8175K

Casey Bartkus <Casey_Bartkus@swn.com> Tue, Feb 8, 2022 at 9:30 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thank you Gayne!

Casey Bartkus

Senior Staff Environmental Specialist – SW Appalachia

Southwestern Energy

1300 Fort Pierpont Drive

Suite 201

Morgantown, WV 26508

Mobile: 304-406-2051

Direct: 304-884-1666

Email: Casey_Bartkus@SWN.com

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN- Charles Jamison Accepted As-built

2 messages

Kees, Kelly L <kelly.l.kees@wv.gov> Wed, Mar 2, 2022 at 9:46 AM
To: Brittany Woody <brittany_woody@swn.com>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Wade A Stansberry <wade.a.stansberry@wv.gov>

I have reviewed the as-built plans for the above referenced well pad as prepared by CEC and received by the WVDEP-Office of Oil & Gas on 1/31/2022 and I am accepting these plans. Sheets 1 & 10 of these approved plans are to be submitted with additional well work applications for this pad prior to its construction. If you have any questions, please do not hesitate to contact me.

--
Kelly L. Kees, P.E.
Office of Oil and Gas
WVDEP
601 57th St SE,
Charleston, WV 25304
(304)926-0440

2022-3-1 SWN - CHARLES JAMISON As-built pgs 1 and 10.pdf
2556K

Brittany Woody <Brittany_Woody@swn.com> Wed, Mar 2, 2022 at 9:53 AM
To: "Kees, Kelly L" <kelly.l.kees@wv.gov>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Wade A Stansberry <wade.a.stansberry@wv.gov>

Thanks!

[Quoted text hidden]

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN consent order

4 messages

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Mon, Mar 21, 2022 at 4:01 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: "Newlon, Douglas C" <douglas.c.newlon@wv.gov>

The one for 47-051-01662. Are you ok with cutting the abatement time to 19 days? That is the date on the report that we did not get until November 30, 2021? That is 19 days instead of 38 and $9,975 instead of $19,950.

Let me know your thoughts asap. Please and thank you both.

--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

Newlon, Douglas C <Douglas.C.Newlon@wv.gov> Mon, Mar 21, 2022 at 4:27 PM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>
Cc: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I am ok with it if they Agee to pay it
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Mar 21, 2022 at 4:30 PM
To: "Newlon, Douglas C" <Douglas.C.Newlon@wv.gov>
Cc: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>

I am ok also. But looking at the reports I see them dated 11/30/21.
[Quoted text hidden]

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Tue, Mar 22, 2022 at 8:03 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

THe story is that Moody had their results back all by November 3. Their report was not sent out until November 30th. The report by SWN was dated November 13, but also not received until November 30.

We thought allowing for the delivery dates was suitable. SWN asked for a reexamination. If you feel that it should remain unchanged, let me know and we can discuss further. Your ideas are important and they count!

Also they have another one that I am thinking will be assessed.

Have a good day.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN FRAC NOTIFICATION - BETTY SCHAFER PAD

4 messages

Heather Franer <Heather_Franer@swn.com> Mon, Mar 14, 2022 at 1:50 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: Aaron Balderson <Aaron_Balderson@swn.com>, Kevin Porsch <Kevin_Porsch@swn.com>, WVD - WSS <WVD-WSS@swn.com>, Liz Gee <liz_gee@swn.com>, Denise Grantham <Denise_Grantham@swn.com>, Nick Flesher <Nick_Flesher@swn.com>, "DEP.water.use@wv.gov" <DEP.water.use@wv.gov>, Heather Franer <IMCEAEX-_O=SWN_OU=FIRST+20ADMINISTRATIVE+20GROUP_CN=RECIPIENTS_CN=HCHOATE@namprd18.prod.outlook.com>, Oana Ivanescu <Oana_Ivanescu@swn.com>, Andrea Bond <Andrea_Bond@swn.com>, Brittany Woody <Brittany_Woody@swn.com>, Anders Storaune <Anders_Storaune@swn.com>, Matt Justus <Matt_Justus@swn.com>, Carla Suszkowski <Carla_Suszkowski@swn.com>, Matt Briggs <Matt_Briggs@swn.com>

Gayne - Per our conversation earlier today 3.14.22 regarding the non-receipt of the Frac Notification for the Betty Schafer, which we are currently actively working.

As discussed in our phone conversation you mentioned you would waive the “Notice of Violation” fee only once for this occurrence and in the future it should not happen again. Please reply to this email with your confirmation that I understood you correctly and SWN will not be held liable for a NOV. Please see below list of wells for the Betty Schafer Pad:

SWN Production LLC submits this notification to the DEP regarding our plan to stimulate the following wells on the Estimated Frac Start Date of 3/18/2021.

BETTY SCHAFER MSH 3 – API# 4705102417000

BETTY SCHAFER MSH 405 – API# 47051023830000

BETTY SCHAFER MSH 1 – API# 47051023820000

Thank you again for your understanding and willingness to assist in this matter. If you need anything else please let me know.

Regards,

Heather

Heather Franer

D&C Operations Staff Analyst

10000 Energy Dr

Spring, TX 77389-4954

Office: 832-796-7306

Cell: 832-745-2628/832-496-1450

heather_franer@swn.com

www.swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Mar 14, 2022 at 4:22 PM
To: Heather Franer <Heather_Franer@swn.com>
Cc: Aaron Balderson <Aaron_Balderson@swn.com>, Anders Storaune <Anders_Storaune@swn.com>, Andrea Bond <Andrea_Bond@swn.com>, Brittany Woody <Brittany_Woody@swn.com>, Carla Suszkowski <Carla_Suszkowski@swn.com>, "DEP.water.use@wv.gov" <DEP.water.use@wv.gov>, Denise Grantham <Denise_Grantham@swn.com>, Heather Franer <IMCEAEX-_O=SWN_OU=FIRST+20ADMINISTRATIVE+20GROUP_CN=RECIPIENTS_CN=HCHOATE@namprd18.prod.outlook.com>, Kevin Porsch <Kevin_Porsch@swn.com>, Liz Gee <liz_gee@swn.com>, Matt Briggs <Matt_Briggs@swn.com>, Matt Justus <Matt_Justus@swn.com>, Nick Flesher <Nick_Flesher@swn.com>, Oana Ivanescu <Oana_Ivanescu@swn.com>, WVD - WSS <WVD-WSS@swn.com>

Heather,

As noted there will be no NOV issued. Consider this a warning. The inspector is to be notified 24 hours prior to any well work. In the future if this happens again enforcement will be taken.

Regards,

Gayne
[Quoted text hidden]

Mail Delivery Subsystem <mailer-daemon@googlemail.com> Mon, Mar 14, 2022 at 4:23 PM
To: gayne.j.knitowski@wv.gov

Address not found

Your message wasn't delivered to **IMCEAEX-_O=SWN_OU=FIRST+20ADMINISTRATIVE+20GROUP_CN=RECIPIENTS_CN=HCHOATE@namprd18.prod.outlook.com** because the domain namprd18.prod.outlook.com couldn't be found. Check for typos or unnecessary spaces and try again.

The response was:

```
DNS Error: 8998840 DNS type 'mx' lookup of namprd18.prod.outlook.com responded with code NXDOMAIN
Domain name not found: namprd18.prod.outlook.com
```

Final-Recipient: rfc822; IMCEAEX-_O=SWN_OU=FIRST+20ADMINISTRATIVE+20GROUP_CN=RECIPIENTS_CN=HCHOATE@namprd18.prod.outlook.com
Action: failed
Status: 4.0.0
Diagnostic-Code: smtp; DNS Error: 8998840 DNS type 'mx' lookup of namprd18.prod.outlook.com responded with code NXDOMAIN
Domain name not found: namprd18.prod.outlook.com
Last-Attempt-Date: Mon, 14 Mar 2022 13:23:04 -0700 (PDT)

---------- Forwarded message ----------
From: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
To: Heather Franer <Heather_Franer@swn.com>
Cc: Aaron Balderson <Aaron_Balderson@swn.com>, Anders Storaune <Anders_Storaune@swn.com>, Andrea Bond <Andrea_Bond@swn.com>, Brittany Woody <Brittany_Woody@swn.com>, Carla Suszkowski <Carla_Suszkowski@swn.com>, "DEP.water.use@wv.gov" <DEP.water.use@wv.gov>, Denise Grantham <Denise_Grantham@swn.com>, Heather Franer <IMCEAEX-_O=SWN_OU=FIRST+20ADMINISTRATIVE+20GROUP_CN=RECIPIENTS_CN=HCHOATE@namprd18.prod.outlook.com>, Kevin Porsch <Kevin_Porsch@swn.com>, Liz Gee <liz_gee@swn.com>, Matt Briggs <Matt_Briggs@swn.com>, Matt Justus <Matt_Justus@swn.com>, Nick Flesher <Nick_Flesher@swn.com>, Oana Ivanescu <Oana_Ivanescu@swn.com>, WVD - WSS <WVD-WSS@swn.com>
Bcc:
Date: Mon, 14 Mar 2022 16:22:52 -0400
Subject: Re: SWN FRAC NOTIFICATION - BETTY SCHAFER PAD
----- Message truncated -----

Heather Franer <Heather_Franer@swn.com> Mon, Mar 14, 2022 at 5:04 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Gayne - Thank you for the response and clarification.

Have a great day!

Heather

Heather Franer

D&C Operations Staff Analyst

10000 Energy Dr

Spring, TX 77389-4954

Office: 832-796-7306

Cell: 832-745-2628/832-496-1450

heather_franer@swn.com

www.swn.com

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[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN FRAC NOTIFICATION - CARL ROTTER PAD

3 messages

Andrea Bond <Andrea_Bond@swn.com> Mon, May 9, 2022 at 10:49 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: WVD - WSS <WVD-WSS@swn.com>, Liz Gee <liz_gee@swn.com>, Denise Grantham <Denise_Grantham@swn.com>, Carla Suszkowski <Carla_Suszkowski@swn.com>, Kevin Porsch <Kevin_Porsch@swn.com>, Nick Flesher <Nick_Flesher@swn.com>, Aaron Balderson <Aaron_Balderson@swn.com>, Carol Pruitt <Carol_Pruitt@swn.com>, "DOUGLAS.C.NEWLON@WV.GOV" <DOUGLAS.C.NEWLON@wv.gov>, Nathan Bowden <Nathan_Bowden@swn.com>

SWN Production LLC submits this notification to the DEP regarding our plan to begin Pad Prep on the CARL ROTTER PAD on 5/19/2022.

SWN Production LLC submits this notification to the DEP regarding our plan to stimulate the following wells on the Estimated Frac Start Date of 5/28/2022:

- **CARL ROTTER OHI 206H**
- **CARL ROTTER OHI 6H**
- **CARL ROTTER OHI 8H**
- **CARL ROTTER OHI 10H**
- **CARL ROTTER OHI 210H**

Andrea

Andrea Bond

Staff Drilling and Completions Analyst

Northwest Appalachia Team - NEAPP

10000 Energy Drive

Spring, TX 77389

Direct: 832 (SWN) 796.7428

Cell: 832.302.6921

Andrea_Bond@SWN.com

www.swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, May 9, 2022 at 5:30 PM
To: Strader Gower <strader.c.gower@wv.gov>

Don’t think you will be seeing a rig from your window
[Quoted text hidden]

Gower, Strader C <strader.c.gower@wv.gov> Mon, May 9, 2022 at 6:30 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I’ll just be glad to have a window to look out
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN FRAC NOTIFICATION - CHARLES JAMISON PAD

1 message

Andrea Bond <Andrea_Bond@swn.com> Thu, Jul 7, 2022 at 10:58 PM
To: "Strader.C.Gower@wv.gov" <Strader.C.Gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: WVD - WSS <WVD-WSS@swn.com>, Liz Gee <liz_gee@swn.com>, Denise Grantham <Denise_Grantham@swn.com>, Carla Suszkowski <Carla_Suszkowski@swn.com>, Kevin Porsch <Kevin_Porsch@swn.com>, Nick Flesher <Nick_Flesher@swn.com>, Aaron Balderson <Aaron_Balderson@swn.com>, Carol Pruitt <Carol_Pruitt@swn.com>, "DOUGLAS.C.NEWLON@WV.GOV" <DOUGLAS.C.NEWLON@wv.gov>, Nathan Bowden <Nathan_Bowden@swn.com>, "dep.water.use@wv.gov" <dep.water.use@wv.gov>

SWN Production LLC submits this notification to the DEP regarding our plan to begin Pad Prep on the CHARLES JAMISON PAD on 7/21/2022.

SWN Production LLC submits this notification to the DEP regarding our plan to stimulate the following wells on the Estimated Frac Start Date of 7/27/2022:

- **CHARLES JAMISON 406**
- **CHARLES JAMISON 410**
- **CHARLES JAMISON 606**
- **CHARLES JAMISON 610**
- **CHARLES JAMISON 810**

Andrea

Andrea Bond

Staff Drilling and Completions Analyst

Northwest Appalachia Team - NEAPP

10000 Energy Drive

Spring, TX 77389

Direct: 832 (SWN) 796.7428

Cell: 832.302.6921

Andrea_Bond@SWN.com

www.swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN FRAC NOTIFICATION - SWN A WTZ PAD

1 message

Andrea Bond <Andrea_Bond@swn.com> Mon, Mar 21, 2022 at 5:12 PM
To: Kenneth L Greynolds <kenneth.l.greynolds@wv.gov>
Cc: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, WVD - WSS <WVD-WSS@swn.com>, Liz Gee <liz_gee@swn.com>, Denise Grantham <Denise_Grantham@swn.com>, Carla Suszkowski <Carla_Suszkowski@swn.com>, Aaron Balderson <Aaron_Balderson@swn.com>, Kevin Porsch <Kevin_Porsch@swn.com>, Nick Flesher <Nick_Flesher@swn.com>, Oana Ivanescu <Oana_Ivanescu@swn.com>, "dep.water.use@wv.gov" <dep.water.use@wv.gov>

SWN Production LLC submits this notification to the DEP regarding our plan to stimulate the following wells on the Estimated Frac Start Date of 4/18/2022.

- **SWN A WTZ 1H**
- **SWN A WTZ 201H**
- **SWN A WTZ 401H**
- **SWN A WTZ 601H**

Thank you,

Andrea

Andrea Bond

Staff Drilling and Completions Analyst

Northwest Appalachia Team - NEAPP

10000 Energy Drive

Spring, TX 77389

Direct: 832 (SWN) 796.7428

Cell: 832.302.6921

Andrea_Bond@SWN.com

www.swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN FRAC NOTIFICATION - TIMMY MINCH PAD

1 message

Andrea Bond <Andrea_Bond@swn.com> Thu, Jul 7, 2022 at 10:52 PM
To: "Strader.C.Gower@wv.gov" <Strader.C.Gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: WVD - WSS <WVD-WSS@swn.com>, Liz Gee <liz_gee@swn.com>, Denise Grantham <Denise_Grantham@swn.com>, Carla Suszkowski <Carla_Suszkowski@swn.com>, Kevin Porsch <Kevin_Porsch@swn.com>, Nick Flesher <Nick_Flesher@swn.com>, Aaron Balderson <Aaron_Balderson@swn.com>, Carol Pruitt <Carol_Pruitt@swn.com>, "DOUGLAS.C.NEWLON@WV.GOV" <DOUGLAS.C.NEWLON@wv.gov>, Nathan Bowden <Nathan_Bowden@swn.com>, "dep.water.use@wv.gov" <dep.water.use@wv.gov>

SWN Production LLC submits this notification to the DEP regarding our plan to begin Pad Prep on the TIMMY MINCH PAD on 7/15/2022.

SWN Production LLC submits this notification to the DEP regarding our plan to stimulate the following wells on the Estimated Frac Start Date of 8/6/2022:

- **TIMMY MINCH OHI 10**
- **TIMMY MINCH OHI 210**
- **TIMMY MINCH 8**

Andrea

Andrea Bond

Staff Drilling and Completions Analyst

Northwest Appalachia Team - NEAPP

10000 Energy Drive

Spring, TX 77389

Direct: 832 (SWN) 796.7428

Cell: 832.302.6921

Andrea_Bond@SWN.com

www.swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN imminent danger 11753 51-1622

3 messages

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Tue, Oct 26, 2021 at 2:36 PM
To: "Knitowski, Gayne J" <e026012@wv.gov>
Cc: "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, James A Martin <james.a.martin@wv.gov>

I drafted this VI-28. Marty reviewed. Look it over and make sure everything is correct. Send me a signed copy and I will mail it and put it in AX.

Need anything else, just holler.

Thank you sir!

--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

Imminent danger 11753 SWN 051-01622.doc
32K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Oct 26, 2021 at 3:43 PM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>

Under D I think we should add and all contaminated stone/soil removed and properly disposed of.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Oct 26, 2021 at 6:33 PM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>

Scott,

Attached is the signed NOV. I talked with Josh Boyda from SWN and they are sending out pieces of the compressor (check Valve etc.) to a lab to see if there were any defects. Also they should complete cleanup in a few days so I think the NOV is fine as written.

Regards,

Gayne

On Tue, Oct 26, 2021 at 2:36 PM Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> wrote:
[Quoted text hidden]

NOV11753.pdf
822K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN matrix

5 messages

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Mon, Jan 31, 2022 at 2:41 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>

See attached. Let me know your thoughts.

--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

Assessment Matrix SWN NOV 11753.pdf
174K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Jan 31, 2022 at 4:42 PM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>
Cc: "Newlon, Douglas C" <douglas.c.newlon@wv.gov>

The only thing I see is in the gravity section. This NOV was imminent danger and reading comment number 3, wouldn't that indicate an increase?? That's the way I read it but I could be wrong. I think everything else looks fine.
[Quoted text hidden]

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Mon, Jan 31, 2022 at 8:08 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I will double check. Thanks for reviewing and getting back.
[Quoted text hidden]

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Tue, Feb 1, 2022 at 9:12 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I pulled it up. #3 says we may increase up to 25%. Since we are at $15,200 I did not increase it. If you think we should, send me a percentage from 0 to 25 and I will change it.

On Mon, Jan 31, 2022 at 4:43 PM Knitowski, Gayne J <gayne.j.knitowski@wv.gov> wrote:
[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Feb 1, 2022 at 10:49 AM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>

The numbers you currently have should be good to go.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN NOV

4 messages

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Apr 5, 2022 at 3:15 PM
To: J Scott Rodeheaver <J.Scott.Rodeheaver@wv.gov>

I am going to write Swn an NOV. what will the violation number be?

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Tue, Apr 5, 2022 at 5:29 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I can get that for you first thing tomorrow. I was not in the office today and do not have my computer.

Is there another one that needs assessed?
[Quoted text hidden]
--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Apr 5, 2022 at 5:45 PM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>

They haven't been given me notice on permitted well work. A few weeks ago a gave them a written warning and said if it happens again enforcement action will be taken. Hence it happened again so I think it should be assessed but we will talk
[Quoted text hidden]

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Wed, Apr 6, 2022 at 8:28 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

holler at me I need the aPI and the code citation for the number
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN Production Company Water Withdrawal Notice

1 message

Casey Bartkus <Casey_Bartkus@swn.com> Wed, Apr 13, 2022 at 12:56 PM
To: "DEP.water.use@wv.gov" <DEP.water.use@wv.gov>
Cc: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Dawn Keller <Dawn_Keller@swn.com>

Hello,

Please use this email as our notification to begin withdrawing/purchasing water at the following locations, as outlined in our approved water management plan:

- Fish Creek @ Gribben
- Covestro, LLC

Water used from these sources will be supporting completions activities at our SWN A WTZ Well Pad under WMP02395.

Thank you

Casey Bartkus

Senior Staff Environmental Specialist – SW Appalachia

Southwestern Energy

1300 Fort Pierpont Drive

Suite 201

Morgantown, WV 26508

Mobile: 304-406-2051

Direct: 304-884-1666

Email: Casey_Bartkus@SWN.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

SWN- Roth OHI

2 messages

Kees, Kelly L <kelly.l.kees@wv.gov> Wed, Apr 6, 2022 at 12:01 PM
To: Brittany Woody <brittany_woody@swn.com>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I have reviewed the construction plans for the above referenced well pad as prepared by Ascent Consulting and Engineering and received by the WVDEP-Office of Oil & Gas on 3/11/2022 and I have the following comments:

1. The plans provide a copy of the general notes on page 2. Within those notes you need to have the compaction specs needed to construct the access road and well pad. The minimum compaction specs the office of oil and gas require are as follows: Fills will be compacted to 95% of Standard Proctor density (ASTM D-698). Fill lift thicknesses will be 12 inch maximum, nothing frozen or too wet. Fills will be free of objectionable material nothing larger than 6 inches. Rock fill lifts will be no greater than 36 inches.

2. On page 33 there is a sump detail. Within the detail you need a note stating “There will be no discharge from the well pad during drilling activities”.

3. On the reclamation plans found on page 30 you need to provide a reclamation sequence. Within the sequence you need to provide any compaction specs needed to reclaim the sight. The maximum fill lift thickness will be 24 inches. Reclamation fills will be compacted to 90% of Standard Proctor density (ASTM D-698).

4. Please label the structure on page 12 with what type of structure is located there, residence, etc.

5. Please label the mountable berm on page 13.

6. Provide cross sections of the stockpiles.

7. Provide center of well pad coordinates on page 24.

If you have any questions, please do not hesitate to contact me. Please return the revised plan set to me as a pdf.

Kelly L. Kees, P.E.
Office of Oil and Gas
WVDEP
601 57th St SE,
Charleston, WV 25304
(304)926-0440

Brittany Woody <Brittany_Woody@swn.com> Thu, Apr 7, 2022 at 2:51 PM
To: "Kees, Kelly L" <kelly.l.kees@wv.gov>
Cc: Charles T Brewer <charles.t.brewer@wv.gov>, "Newlon, Douglas C" <douglas.c.newlon@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

See our response below in red. Also, Kalab Taylor sent you the new set of plans because it was too large for me to send. Let me know if there is anything else you need.

1. The plans provide a copy of the general notes on page 2. Within those notes you need to have the compaction specs needed to construct the access road and well pad. The minimum compaction specs the office of oil and gas require are as follows: Fills will be compacted to 95% of Standard Proctor density (ASTM D-698). Fill lift thicknesses will be 12 inch maximum, nothing frozen or too wet. Fills will be free of objectionable material nothing larger than 6 inches. Rock fill lifts will be no greater than 36 inches. Note #8 has been added in the General Notes Section on sheet #2 stating the compaction specs.

2. On page 33 there is a sump detail. Within the detail you need a note stating "There will be no discharge from the well pad during drilling activities". Note has been added to sheet 42 on the 'Pad Dewatering System' Detail. (Sheet 33 has no sump detail on it)

3. On the reclamation plans found on page 30 you need to provide a reclamation sequence. Within the sequence you need to provide any compaction specs needed to reclaim the sight. The maximum fill lift thickness will be 24 inches. Reclamation fills will be compacted to 90% of Standard Proctor density (ASTM D-698). Construction Sequence has been added to sheet 30.

4. Please label the structure on page 12 with what type of structure is located there, residence, etc. Label has been added on sheet 12 "Existing Barn".

5. Please label the mountable berm on page 13. Label has been added to sheet 13 calling out the mountable berm.

6. Provide cross sections of the stockpiles. Stockpiles cross sections have been added to the plans, see sheet 28A.

7. Provide center of well pad coordinates on page 24. Center of Well Pad Coordinates have been added to sheet 24.

[Quoted text hidden]

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

TC Energy Majorsville Shallow 4437 Plugging Application

3 messages

Brad Nelson <brad_nelson@tcenergy.com> Tue, Mar 8, 2022 at 11:31 AM
To: "Gayne.J.Knitowski@wv.gov" <Gayne.J.Knitowski@wv.gov>

Hello Gayne,

As we discussed a couple of weeks ago, TC Energy (Columbia Gas Transmission, LLC) intends to plug and abandon storage well Majorsville Shallow 4437 (API # 47-051-00312-00-00) in Marshall County, WV this year. Attached please find the WVDEP plugging permit application. Can you sign and return via email if everything looks alright? If you have any questions or require further information, feel free to reach out. I appreciate the help. I should have several other applications coming your way in the near future.

Thank you,

Brad

Brad Nelson

Storage Engineer

Well Engineering & Technology

brad_nelson@tcenergy.com

mobile: 724-250-0610 **desk:** 724-223-2753

TC Energy

455 Racetrack Road

Washington, PA

USA 15301

TCEnergy.com

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Thank you

Majorsville Shallow 4437 WVDEP Plugging Permit Application 03.08.2022.pdf
4041K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Mar 9, 2022 at 7:46 AM
To: Brad Nelson <brad_nelson@tcenergy.com>

Brad,

Attached is the signed plugging permit. Have a good day.

Regards,

Gayne
[Quoted text hidden]

Majorsville Shallow 4437 WVDEP Plugging Permit Application 03.08.2022.pdf
4248K

Brad Nelson <brad_nelson@tcenergy.com> Wed, Mar 9, 2022 at 8:42 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thank you Gayne for the help. You have a good day also.

Brad

Brad Nelson

Storage Engineer

Well Engineering & Technology

brad_nelson@tcenergy.com

mobile: 724-250-0610 **desk:** 724-223-2753

TC Energy

455 Racetrack Road

Washington, PA

USA 15301

TCEnergy.com

From: Knitowski, Gayne J <gayne.j.knitowski@wv.gov>
Sent: Wednesday, March 9, 2022 7:47 AM
To: Brad Nelson <brad_nelson@tcenergy.com>
Subject: [EXTERNAL] Re: TC Energy Majorsville Shallow 4437 Plugging Application

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[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

TC Energy Victory B 4205 and Victory B 4399 Permit Applications

3 messages

Brad Nelson <brad_nelson@tcenergy.com> Mon, Mar 14, 2022 at 11:53 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Hello Gayne,

Attached please find the WVDEP permit applications (stimulation) for Victory B 4205 (API # 47-051-00719-00-00) and Victory B 4399 (API # 47-051-00757-00-00). Can you sign and return via email if everything looks alright? If you have any questions or require further information, feel free to reach out. I appreciate the help.

Thank you,

Brad

Brad Nelson

Storage Engineer

Well Engineering & Technology

brad_nelson@tcenergy.com

mobile: 724-250-0610 **desk:** 724-223-2753

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Washington, PA

USA 15301

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Thank you

2 attachments

VB 4399 CTCO Plugging Permit Application 03.14.2022.pdf
4652K

VB 4205 CTCO Plugging Permit Application 03.14.2022.pdf
4679K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Mar 15, 2022 at 9:11 AM
To: Brad Nelson <brad_nelson@tcenergy.com>

Brad,

Attached are the signed permits. Have a good day.

Regards,

Gayne
[Quoted text hidden]

2 attachments

VB 4205 CTCO Plugging Permit Application 03.14.2022.pdf
4854K

VB 4399 CTCO Plugging Permit Application 03.14.2022.pdf
4752K

Brad Nelson <brad_nelson@tcenergy.com> Tue, Mar 15, 2022 at 9:48 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thanks Gayne. You have a good day also.

Brad

Brad Nelson

Storage Engineer

Well Engineering & Technology

brad_nelson@tcenergy.com

mobile: 724-250-0610 **desk:** 724-223-2753

TC Energy

455 Racetrack Road

Washington, PA

USA 15301

TCEnergy.com

From: Knitowski, Gayne J <gayne.j.knitowski@wv.gov>
Sent: Tuesday, March 15, 2022 9:12 AM
To: Brad Nelson <brad_nelson@tcenergy.com>
Subject: [EXTERNAL] Re: TC Energy Victory B 4205 and Victory B 4399 Permit Applications

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[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

TC Energy Victory B 4712 Permit Application

3 messages

Brad Nelson <brad_nelson@tcenergy.com> Fri, Mar 25, 2022 at 11:43 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Hello Gayne,

Attached please find the WVDEP permit application (stimulation) for Victory B 4712 (API # 47-051-00458-00-00). Can you sign and return via email if everything looks alright? If you have any questions or require further information, feel free to reach out. I appreciate the help.

Thank you,

Brad

Brad Nelson

Storage Engineer

Well Engineering & Technology

brad_nelson@tcenergy.com

mobile: 724-250-0610 **desk:** 724-223-2753

TC Energy

455 Racetrack Road

Washington, PA

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Thank you

VB 4712 CTCO Permit Packet 05-23-2016 (03.25.2022) to Inspector.pdf
3870K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Mar 28, 2022 at 8:26 AM
To: Brad Nelson <brad_nelson@tcenergy.com>

Brad,

Attached is the signed permit. Have a good day.

Regards,

Gayne
[Quoted text hidden]

VB 4712 CTCO Permit Packet 05-23-2016 (03.25.2022) to Inspector.pdf
3994K

Brad Nelson <brad_nelson@tcenergy.com> Mon, Mar 28, 2022 at 8:34 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thank you Gayne for the help.

Brad

Brad Nelson

Storage Engineer

Well Engineering & Technology

brad_nelson@tcenergy.com

mobile: 724-250-0610 **desk:** 724-223-2753

TC Energy

455 Racetrack Road

Washington, PA

USA 15301

TCEnergy.com

From: Knitowski, Gayne J <gayne.j.knitowski@wv.gov>
Sent: Monday, March 28, 2022 8:27 AM
To: Brad Nelson <brad_nelson@tcenergy.com>
Subject: [EXTERNAL] Re: TC Energy Victory B 4712 Permit Application

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[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

TC Energy Well 7417

4 messages

Joann Lewis <joann.lewisfarm@gmail.com> Fri, Dec 31, 2021 at 2:08 PM
To: Gayne.J.Knitowski@wv.gov, TRAVIS.D.HAYS@wv.gov

Gayne I assume you know this work is going to take place here in front of our home on the casing/annulus issues.. I have attached the documents and am also contacting Travis Hayes hoping he will be on site for the environmental issue from the start of the project.

2 attachments

TC ENERGY 12-28-2021 WELL 7417.pdf
874K

TC ENERGY 12-17-2021 WELL 7417.pdf
1079K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Jan 3, 2022 at 10:23 AM
To: Joann Lewis <joann.lewisfarm@gmail.com>

Joanne,

I will definitely be checking in when they are out there working. Any concerns let me know.

Regards,

Gayne
[Quoted text hidden]

Joann Lewis <joann.lewisfarm@gmail.com> Mon, Jan 3, 2022 at 11:44 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Have they notified you of a start date? The only information we have is that it will be 45 days from the 17th of December. With all the rain it will be a muddy mess!
[Quoted text hidden]
--
7582 Saltlick Road
Terra Alta WV 26764
3047892232
joann@lewisfarmwv.com

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Mon, Jan 3, 2022 at 12:06 PM
To: Joann Lewis <joann.lewisfarm@gmail.com>

No, I have not heard a start date. With weather around here it is not the best time to schedule work.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Terra Alta 7370 and 7377 P&A wells

2 messages

Maria Medvedeva <maria_medvedeva@tcenergy.com> Fri, Mar 18, 2022 at 9:36 AM
To: "Gayne.J.Knitowski@wv.gov" <Gayne.J.Knitowski@wv.gov>

Mr. Gayne, good morning,

It has just come to my attention that I may have attached a wrong copy of the prior to P&A wellbore schematic for Terra Alta 7370 in the permitting packet. I was going through my personal print files and to my surprise the folder for the 7370 well had a diagram of the 7377 wellbore. It could be a mistake in my own filing, but just in case I may have placed a wrong schematic for the permit package as well, would you please accept these email copies to update the files with the state? I'm very sorry for any potential confusion.

Maria Medvedeva

Senior Wells Engineer – Well Engineering & Technology

Storage Technical Services

maria_medvedeva@tcenergy.com

M: +1-304-410-4313

TC Energy

1700 MacCorkle Ave SE

Charleston, WV 25314

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Thank you

2 attachments

Wellbore Schematic (prior to P&A) - Terra Alta 7370 1.19.2022.pdf
86K

Wellbore Schematic (prior to P&A) - Terra Alta 7377 11.19.2022.pdf
101K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Mar 18, 2022 at 10:47 AM
To: Maria Medvedeva <maria_medvedeva@tcenergy.com>

Thanks for the update.
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Terra Alta 7398 M.001863

12 messages

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Tue, Feb 15, 2022 at 9:17 AM
To: lorrie_steadman@tcenergy.com, Karen Franks <karen_franks@tcenergy.com>, Ralph@lewisfarmwv.com
Cc: JAMES.A.MARTIN@wv.gov, Gayne.J.Knitowski@wv.gov

API WELL NO. 47-077-00030-0000
TERRA ALTA WELL 7398

Ralph and I are not opposed to the plugging and abandoning of SW7398 however
we have very serious concerns with the proposed permit for this project.
Well 7398 is located on a landing cut into a mountain where it is always wet even in the hottest driest part of the summer. The area is a marsh/swamp/wetland.

Due to the lay of the land there is nowhere to install the 2 pits depicted in as Pit A and Pit B by TC Energy/Columbia Gas Transmission. We believe the pits have potential to be harmful to the groundwater and vegetation and more importantly our livestock. The documents provided by TC Energy/Columbia Gas indicate Pit A would be located on a very steep slope. Photos enclosed.

An existing runoff ravine is fed by a spring located between the access gate and well 7398. At the bottom of the ravine is a wetland/marsh the seeps into a stream which feeds into Saltlick Creek (approximately 25 ft). Another reason we do not want pits.

Proposed Work Area:
We also believe that 1 acre is extreme especially since the site cut into a hillside and would require a substantial amount of earth disturbance and the removal of mature trees. An area of approximately 80 yards by 16 yards is the historic work area and would be large enough for TC Energy/Columbia Gas Transmission to perform the plugging of the well 7398 and keep their employees/contractors and equipment on their right-of-way.

SEED MIXTURES –
We do not want any fescue when the area is reclaimed. We would like this to be hydroseeded so that revegetation occurs quickly.

We also have a family cabin located 100 yards downhill from the worksite that needs to taken into consideration.

The Google maps marked by TC Energy and included as part of the permit have the well location incorrectly depicted.

Ralph and I would be happy to meet with Gayne Knitowski, TC personnel or whoever is available to view the site prior to permit approval or work begins.

I can send photos but they may need sent in several email due to the size.

Ralph and Joann Lewis
7582 Saltlick Road
Terra Alta WV 26764
304-789-2232

joann@lewisfarmwv.com
Ralph@lewisfarmwv.com

45 day notification to plug SW7398.pdf
870K

Lorrie Steadman <lorrie_steadman@tcenergy.com> Tue, Feb 15, 2022 at 9:20 AM

To: "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>, Karen Franks <karen_franks@tcenergy.com>, "Ralph@Lewisfarmwv.com" <Ralph@lewisfarmwv.com>
Cc: "JAMES.A.MARTIN@wv.gov" <JAMES.A.MARTIN@wv.gov>, "Gayne.J.Knitowski@Wv.Gov" <Gayne.J.Knitowski@wv.gov>

Ralph & Joann:

I received your email stating concerns regarding the plugging project scheduled for Well 7398. Let me forward your concerns to the project team and get back to you.

Thanks,

Lorrie Steadman
Land Representative
Land Services
Columbia Gas Transmission LLC/ TC Energy
12001 Industrial Park St.
Cumberland, MD 21502
Office: (301)729-5624
Cell: (304)290-7572
Lorrie_Steadman@tcenergy.com

-----Original Message-----
From: joann@lewisfarmwv.com <joann@lewisfarmwv.com>
Sent: Tuesday, February 15, 2022 9:18 AM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>; Karen Franks <karen_franks@tcenergy.com>; Ralph@Lewisfarmwv.com
Cc: JAMES.A.MARTIN@wv.gov; Gayne.J.Knitowski@Wv.Gov
Subject: [EXTERNAL] Terra Alta 7398 M.001863
Importance: High

EXTERNAL EMAIL: PROCEED WITH CAUTION.
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==========

[Quoted text hidden]

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Thank you

Lorrie Steadman <lorrie_steadman@tcenergy.com> Wed, Mar 2, 2022 at 1:59 PM
To: "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>, Karen Franks <karen_franks@tcenergy.com>, "Ralph@Lewisfarmwv.com" <Ralph@lewisfarmwv.com>

Cc: "JAMES.A.MARTIN@wv.gov" <JAMES.A.MARTIN@wv.gov>, "Gayne.J.Knitowski@Wv.Gov" <Gayne.J.Knitowski@wv.gov>

Dear Ralph & Joann:

I've consulted with the project team. Here are their responses…

Regarding "Earthen Pits"- We have no intentions of using an earthen pit. However, in the event that circumstances require us to need an earthen pit for some unforeseen reason, and to avoid unnecessary permitting delays to the project if the need arose, we have included the usage of an earthen pit in our permit with WVDEP.

Regarding the "Site Pad"- We will make the pad only as big as is needed to get the necessary equipment on site and operate it safely. As above, our permits need to accommodate everything that might be necessary to perform the job, but the area used will be minimized as possible. Matting/underlayment of the location along with ground water management will also allow us to minimize impact to the site.

"Seeding"- Once we are done with the work and reclaiming, we are happy to plant whatever seed mix you prefer-as long as it isn't contrary to State regulations. There is currently no plan to hydroseed.

"Site Visit"- We are happy to schedule an on site visit for a time that is convenient for you.
[Quoted text hidden]

---

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Fri, Mar 4, 2022 at 1:25 PM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>
Cc: CHARLES.T.BREWER@wv.gov, Karen Franks <karen_franks@tcenergy.com>, "Ralph@Lewisfarmwv.com" <Ralph@lewisfarmwv.com>, "JAMES.A.MARTIN@wv.gov" <JAMES.A.MARTIN@wv.gov>, "Gayne.J.Knitowski@Wv.Gov" <Gayne.J.Knitowski@wv.gov>

I think there needs to be a site meeting as there are issues with the depiction of the well location on the documents sent to us and again there a concerns that the project may negatively impact our cabin, spring water, trees and property in general.

We are not comfortable with any pit ever and are not comfortable with a pit as part of the a permit giving TC Energy that option especially on a steep hill. There are many other options.
It is known that pits were not used in any other well abandonment projects in our area.

Pits increase the chance of groundwater contamination that would affect the spring, wetlands and Saltlick creek. Our livestock also have access to this area.

Hydroseeding is preferred without fescue to facilitate the revegetation so that the environmental control measures can be removed sooner.

Joann

Lorrie Steadman <lorrie_steadman@tcenergy.com> wrote ..
[Quoted text hidden]

Lorrie Steadman <lorrie_steadman@tcenergy.com> Mon, Mar 7, 2022 at 9:49 AM
To: "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>
Cc: "CHARLES.T.BREWER@wv.gov" <CHARLES.T.BREWER@wv.gov>, Karen Franks <karen_franks@tcenergy.com>, "Ralph@Lewisfarmwv.com" <Ralph@lewisfarmwv.com>, "JAMES.A.MARTIN@wv.gov" <JAMES.A.MARTIN@wv.gov>, "Gayne.J.Knitowski@Wv.Gov" <Gayne.J.Knitowski@wv.gov>

Ralph & Joann:

I'm happy to set up a site visit. Do you have some availability this week?
[Quoted text hidden]

Ralph Lewis <ralph@lewisfarmwv.com> Tue, Mar 8, 2022 at 4:28 PM

To: Lorrie Steadman <lorrie_steadman@tcenergy.com>, joann@lewisfarmwv.com
Cc: CHARLES.T.BREWER@wv.gov, Karen Franks <karen_franks@tcenergy.com>, JAMES.A.MARTIN@wv.gov, Gayne.J.Knitowski@wv.gov

Ms Steadman,
We would be available to meet Friday the 11th, or the 15th, 16th or 17th next week.
Also could you please send us a copy of the oil and gas lease for this property.
Thanks
REL
[Quoted text hidden]

Lorrie Steadman <lorrie_steadman@tcenergy.com> Wed, Mar 9, 2022 at 1:25 PM
To: Ralph Lewis <ralph@lewisfarmwv.com>, "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>
Cc: "CHARLES.T.BREWER@wv.gov" <CHARLES.T.BREWER@wv.gov>, Karen Franks <karen_franks@tcenergy.com>, "JAMES.A.MARTIN@wv.gov" <JAMES.A.MARTIN@wv.gov>, "Gayne.J.Knitowski@Wv.Gov" <Gayne.J.Knitowski@wv.gov>

Ralph:

Unfortunately, Steve doesn't have any availability until the week of March 21st. Would one day that week be possible?

Also, as requested, I've attached a copy of your lease.
[Quoted text hidden]

1090330-001(Lewis Lease).pdf
3620K

---

joann@lewisfarmwv.com <joann@lewisfarmwv.com> Thu, Mar 10, 2022 at 11:09 AM
To: Lorrie Steadman <lorrie_steadman@tcenergy.com>
Cc: Ralph Lewis <ralph@lewisfarmwv.com>, "CHARLES.T.BREWER@wv.gov" <CHARLES.T.BREWER@wv.gov>, Karen Franks <karen_franks@tcenergy.com>, "JAMES.A.MARTIN@wv.gov" <JAMES.A.MARTIN@wv.gov>, "Gayne.J.Knitowski@Wv.Gov" <Gayne.J.Knitowski@wv.gov>

Monday the 21st of March will work for us. I assume 10AM at the SW 7398 observation well site.
[Quoted text hidden]

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Fri, Mar 11, 2022 at 7:58 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: "Newlon, Douglas C" <douglas.c.newlon@wv.gov>

Are you planning to attend this meeting? We can discuss if you would like.

---------- Forwarded message ---------
From: **Martin, James A** <james.a.martin@wv.gov>
Date: Thu, Mar 10, 2022 at 11:27 AM
Subject: Re: Terra Alta 7398 M.001863
To: Brewer, Charles T <charles.t.brewer@wv.gov>, Scott Rodeheaver <j.scott.rodeheaver@wv.gov>

Taylor,

We should probably reach out to Gayne and see if he intends to or needs attend the site meeting.

On Thu, Mar 10, 2022 at 11:22 AM Brewer, Charles T <charles.t.brewer@wv.gov> wrote:
> Marty,
>
> Do we need to discuss this any? We have been copied on alot of traffic about a site visit between the operator and surface owner, but you had asked the question "if no pit is intended, why include that on the app?" Just didn't want to ignore this all.
> [Quoted text hidden]
> --
>
> **Taylor Brewer, B.S., M.S.**

Assistant Chief - Permitting

WVDEP Office of Oil and Gas

601 57th Street, SE

Charleston, WV 25304

304-926-0499 ext. 41108

--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Mar 11, 2022 at 8:44 AM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>

I talked to the Lewis's yesterday and told them I would attend. Also I got the pictures she sent down to Charleston. Just keep me in the loop what if anything you decide in Charleston about the pits. I'm 99.9% that TC energy aren't going to use any but if they are on the permit.
[Quoted text hidden]

Lorrie Steadman <lorrie_steadman@tcenergy.com> Fri, Mar 11, 2022 at 9:39 AM
To: "joann@lewisfarmwv.com" <joann@lewisfarmwv.com>
Cc: Ralph Lewis <ralph@lewisfarmwv.com>, "CHARLES.T.BREWER@wv.gov" <CHARLES.T.BREWER@wv.gov>, Karen Franks <karen_franks@tcenergy.com>, "JAMES.A.MARTIN@wv.gov" <JAMES.A.MARTIN@wv.gov>, "Gayne.J.Knitowski@Wv.Gov" <Gayne.J.Knitowski@wv.gov>

Ralph & Joann:

Yes, we'll meet you at the well at 10 am on March 21st.

Thank you,
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Mar 11, 2022 at 11:47 AM
To: joann@lewisfarmwv.com
Cc: Ralph@lewisfarmwv.com

Ralph and Joanne,

I have attached the revised rec plan for the plugging of the observation well. TC Energy has revised the plan showing no pits are proposed. If you have any questions let me know.

Regards,

Gayne
[Quoted text hidden]

WVDEP Reclamation Plan (site detail) - TA 7398 v.2.pdf
1335K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Terra Alta 7398 P&A reclamation plan site detail

2 messages

Maria Medvedeva <maria_medvedeva@tcenergy.com> Fri, Mar 11, 2022 at 10:11 AM
To: "Gayne.J.Knitowski@wv.gov" <Gayne.J.Knitowski@wv.gov>
Cc: "James Amos (Contractor)" <james_amos@tcenergy.com>, Brent Criser <brent_criser@tcenergy.com>

Gayne, good morning,

Please see attached the updated reclamation plan for the Terra Alta 7398 showing no earthen pits are to be used during the plug and abandonment operations.

Maria Medvedeva

Senior Wells Engineer – Well Engineering & Technology

Storage Technical Services

maria_medvedeva@tcenergy.com

M: +1-304-410-4313

TC Energy

1700 MacCorkle Ave SE

Charleston, WV 25314

TCEnergy.com

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Thank you

WVDEP Reclamation Plan (site detail) - TA 7398 v.2.pdf
1273K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Mar 11, 2022 at 10:17 AM
To: Maria Medvedeva <maria_medvedeva@tcenergy.com>

Thank you
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Terra Alta 7417 Follow up

2 messages

Maria Medvedeva <maria_medvedeva@tcenergy.com> Wed, Mar 2, 2022 at 8:55 AM
To: Brent Criser <brent_criser@tcenergy.com>, "James Amos (Contractor)" <james_amos@tcenergy.com>, Steven Simmons <steven_simmons@tcenergy.com>, "Gayne.J.Knitowski@wv.gov" <Gayne.J.Knitowski@wv.gov>

Good morning,

This meeting invite serves as a follow up discussion for the proposed additional diagnostic work on the Terra Alta 7417, wellbore diagram attached for reference.

Thank you,

Maria Medvedeva

Microsoft Teams meeting

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tcenergy@m.webex.com

Video Conference ID: 116 569 136 9

Alternate VTC instructions

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+1 304-553-7189,,740316061# United States, Charleston

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Thank you

2 attachments

Wellbore Schematic - TA 7417 v.02.25.22.pdf
105K

invite.ics
6K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Wed, Mar 2, 2022 at 8:59 AM
To: Douglas C Newlon <Douglas.C.Newlon@wv.gov>, J Scott Rodeheaver <J.Scott.Rodeheaver@wv.gov>, James A Martin <james.a.martin@wv.gov>

I have the meeting set for Friday at 10:00. I am coming down to Charleston to look at that NOV with Sam so I will you on Friday. If you have a questions you can forward to Maria and they we be ready to answer in the meeting.
[Quoted text hidden]

2 attachments

invite.ics
6K

Wellbore Schematic - TA 7417 v.02.25.22.pdf
105K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Terra Alta 7417 well diagnostics discussion

1 message

Maria Medvedeva <maria_medvedeva@tcenergy.com> Fri, Feb 25, 2022 at 3:37 PM
To: Brent Criser <brent_criser@tcenergy.com>, "James Amos (Contractor)" <james_amos@tcenergy.com>, Steven Simmons <steven_simmons@tcenergy.com>, "Gayne.J.Knitowski@wv.gov" <Gayne.J.Knitowski@wv.gov>

Good afternoon,

Please join us in discussing the Terra Alta (TA) 7417 well condition, diagnostic efforts and plan forward options. TA 7417 wellbore diagram is attached for reference.

Thank you,

Maria Medvedeva

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tcenergy@m.webex.com

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Thank you

2 attachments

Wellbore Schematic - TA 7417 v.02.25.22.pdf
105K

invite.ics
6K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Teslovich Reuse AST Exhibit

3 messages

Josh Boyda <Josh_Boyda@swn.com> Thu, Nov 11, 2021 at 8:38 AM
To: "Gayne.J.Knitowski@wv.gov" <Gayne.J.Knitowski@wv.gov>
Cc: Casey Bartkus <Casey_Bartkus@swn.com>

Good morning Gayne,

Following up on our earlier phone conversation, please see the attached exhibit showing the planned Reuse AST at the Teslovich pad. Please let me know when you will have availability to meet on-site to take a look?

Thank you,

Joshua Boyda

Senior Environmental Specialist – West Virginia Division

Southwestern Energy

1300 Fort Pierpont Dr.

Suite 201

Morgantown, WV 26508

Office: 304-884-1713

Cell: 501-428-3636

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312919-AST EXHIBIT-1.pdf
843K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Nov 12, 2021 at 7:30 AM
To: Josh Boyda <Josh_Boyda@swn.com>
Cc: Casey Bartkus <Casey_Bartkus@swn.com>

Gentleman,

Attached is the sign off for the AST tank on the Teslovich pad. After reviewing the plan, I was at this site last week so I will not have to do a site visit. I commented to the company man that they shoe horned the rig in and you have this area along the access road so I am comfortable signing off. Any questions let me know.

Regards,

Gayne
[Quoted text hidden]

AST-Approval.pdf
668K

Casey Bartkus <Casey_Bartkus@swn.com> Fri, Nov 12, 2021 at 7:54 AM
To: "Knitowski, Gayne J" <Gayne.J.Knitowski@wv.gov>
Cc: Josh Boyda <Josh_Boyda@swn.com>

Gayne, very much appreciated! If you need anything else or have any questions, let us know.

Thank you

Casey Bartkus
Southwestern Energy
304-406-2051

Sent from my iPhone

> On Nov 12, 2021, at 7:32 AM, Knitowski, Gayne J <Gayne.J.Knitowski@wv.gov> wrote:
>
> [Quoted text hidden]
> <AST-Approval.pdf>

[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Thurman Speece NOV # 11770 Abatement Report

8 messages

Josh Boyda <Josh_Boyda@swn.com> Wed, Apr 27, 2022 at 9:15 PM
To: "Gayne.J.Knitowski@wv.gov" <Gayne.J.Knitowski@wv.gov>, "Strader.C.Gower@wv.gov" <Strader.C.Gower@wv.gov>

Good evening Gayne,

Please find attached the Speece Summary Report that was prepared in response to the Thurman Speece NOV #11770. This report and its findings should satisfy the requirements to abate this NOV. If you have any questions or comments or need anything further, please let me know.

Thank you,

Joshua Boyda

Senior Environmental Specialist – West Virginia Division

Southwestern Energy

1300 Fort Pierpont Dr.

Suite 201

Morgantown, WV 26508

Office: 304-884-1713

Cell: 501-428-3636

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Speece Summary Report_4-27-22.pdf
24365K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Apr 28, 2022 at 8:08 AM
To: Jackie N Thornton <jackie.n.thornton@wv.gov>

When you get a chance can you take a quick look at the results of the samples and make sure all the numbers are good. I was at the pad and everything looked good.

Thanks
[Quoted text hidden]

Speece Summary Report_4-27-22.pdf
24365K

Gower, Strader C <strader.c.gower@wv.gov> Thu, Apr 28, 2022 at 9:21 AM
To: Josh Boyda <Josh_Boyda@swn.com>
Cc: "Gayne.J.Knitowski@wv.gov" <Gayne.J.Knitowski@wv.gov>

Received, thank you.
[Quoted text hidden]

Thornton, Jackie N <jackie.n.thornton@wv.gov> Fri, Apr 29, 2022 at 8:12 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

They look ok to me.
[Quoted text hidden]
--
Jackie Thornton
Environmental Resource Analyst
WVDEP-Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
jackie.n.thornton@wv.gov
304-206-6015

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Apr 29, 2022 at 8:24 AM
To: "Thornton, Jackie N" <jackie.n.thornton@wv.gov>

Thanks. I'll work on the abatement. Have a good weekend
[Quoted text hidden]

Thornton, Jackie N <jackie.n.thornton@wv.gov> Fri, Apr 29, 2022 at 8:25 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

You too!
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, Apr 29, 2022 at 9:01 AM
To: Josh Boyda <Josh_Boyda@swn.com>, Brittany Woody <Brittany_Woody@swn.com>
Cc: "Strader.C.Gower@wv.gov" <Strader.C.Gower@wv.gov>

Josh and Brittany,

Attached is the abatement for NOV #11770. Any questions let me know.

Regards,

Gayne
[Quoted text hidden]

Notice of Abatement-11770.pdf
74K

Brittany Woody <Brittany_Woody@swn.com> Fri, Apr 29, 2022 at 9:09 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thanks!

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Timmy Minch OHI 10H - Intermediate Cement Job Report

1 message

sdc40 <sdc40@swn.com> Sun, Jun 12, 2022 at 9:13 AM
To: "Gower, Strader C" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

Strader / Gayne,

The job report for the Timmy Minch OHI 10H Intermediate cement job is attached. The job was pumped as designed with 44 barrels of cement circulated to surface. If you have any questions, please let us know.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Chris Varela 501-428-1691

sdc40@swn.com

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2 attachments

TIMMY MINCH 10H INT CEMENT REPORT.pdf
186K

Intermediate casing tally.pdf
224K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Timmy Minch OHI 10H - Surface Cement Job Report

2 messages

sdc40 <sdc40@swn.com> Tue, Jun 7, 2022 at 12:56 PM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>
Cc: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Dicky Hall <Dicky_Hall@swn.com>, sdc40 <sdc40@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>, Jack Hamm <Jack_Hamm@swn.com>

Strader / Gayne,

The job report for the Timmy Minch OHI 10, Surface cement job is attached. The 2nd stage was pumped as designed with 32 barrels of cement circulated to surface. On the first stage job pumped as plan but had trouble getting bottom plug to land so there is a possibility of having a wet shoe, If that's the case the plan forward was to drill out the shoe track and pump a balanced plug. If that is the route we have to go will we need to run a CBL?

If you have any questions, please let us know.

Thank you

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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3 attachments

Timmy Minch OHI 10, Surface Casing Tally.pdf
210K

TIMMOTHY MINCH 10 JOB REPORT STAGE 1.pdf
292K

TIMMOTHY MINCH 10 JOB REPORT STAGE 2.pdf
331K

Gower, Strader C <strader.c.gower@wv.gov> Wed, Jun 8, 2022 at 12:41 PM
To: sdc40 <sdc40@swn.com>
Cc: Daniel Hughes <Daniel_Hughes@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Jack Hamm <Jack_Hamm@swn.com>, Joel Still <Joel_Still@swn.com>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>

As per our conversation this morning you do not need to run another CBL

Thanks
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Timmy Minch OHI 210H - Intermediate Cement Job Report

1 message

sdc40 <sdc40@swn.com> Sun, Jun 26, 2022 at 8:52 AM
To: "Gower, Strader C" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Joel Still <Joel_Still@swn.com>

Strader / Gayne,

The job report for the Timmy Minch OHI 210H Intermediate cement job is attached. The job was pumped as designed with 36 barrels of cement circulated to surface. If you have any questions, please let us know.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

swn Southwestern Energy

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2 attachments

TIMMY MINCH 210H INT JOB REPORT.pdf
293K

9.625 Casing Tally, Timmy Minch OHI 210.pdf
213K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Timmy Minch OHI 210H - Production Cement Job Report

1 message

sdc40 <sdc40@swn.com> Mon, Jul 4, 2022 at 11:55 AM
To: "Gower, Strader C" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

Strader / Gayne,

The job report for the Timmy Minch OHI 210H Production cement job is attached. The job was pumped as designed with 50 barrels of spacer circulated to surface. If you have any questions, please let us know.

Thank you!

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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2 attachments

JOB REPORT.pdf
397K

Timmy Minch OHI 210H, Production Casing.pdf
295K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Timmy Minch OHI 8H - Intermediate Cement Job Report

1 message

sdc40 <sdc40@swn.com> Sun, May 22, 2022 at 11:12 AM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

Strader / Gayne,

The job report for the Timmy Minch OHI 8H Intermediate cement job is attached. The job was pumped as designed with 44 barrels of cement circulated to surface. If you have any questions, please let us know.

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Chris Varela 501-428-1691

sdc40@swn.com

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2 attachments

PLOT REPORT.pdf
305K

Intermediate casing tally Timmy Minch 8H.pdf
232K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Timmy Minch OHI 8H - Production Cement Job Report

1 message

sdc40 <sdc40@swn.com> Thu, Jun 2, 2022 at 4:01 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Joel Still <Joel_Still@swn.com>

Strader / Gayne,

The job report for the Timmy Minch OHI 8H Production cement job is attached. The job was pumped as designed with 29 barrels of tail cement circulated to surface. ETOC @ 33' If you have any questions, please let us know.

Thank you!

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Wade Gray 479-206-2161

WSS Nights: Bryan Trahan 936-328-0091

sdc40@swn.com

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2 attachments

TIMMY MINCH 8H PRO JOB REPORT.pdf
439K

Timmy Minch OHI 8H, 5.5 production tally.pdf
305K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Timmy Minch OHI 8H - Surface Cement Job Report

3 messages

sdc40 <sdc40@swn.com> Thu, May 19, 2022 at 10:43 AM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>, Daniel Hughes <Daniel_Hughes@swn.com>, Joel Still <Joel_Still@swn.com>

Strader / Gayne,

Strader,

per our earlier conversation that no CBL would be required for this dual stage cement job with cement returns to surface. Attached is the job report for the Timmy Minch OHI 8H, Surface cement job

The job was pumped as designed with 41 barrels of cement circulated to surface. If you have any questions, please let us know.

Thank you

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Chris Varela 501-428-1691

sdc40@swn.com

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2 attachments

Surface Minch OHI8.pdf
210K

Timmy Minch 8H DV-Packer.pdf
728K

---

sdc40 <sdc40@swn.com> Thu, May 19, 2022 at 1:19 PM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>

Sorry, forgot to add the report attachment

[Quoted text hidden]
[Quoted text hidden]

3 attachments

Surface Minch OHI8.pdf
210K

Timmy Minch 8H DV-Packer.pdf
728K

PLOT REPORT.pdf
411K

Gower, Strader C <strader.c.gower@wv.gov> Thu, May 19, 2022 at 9:05 PM
To: sdc40 <sdc40@swn.com>
Cc: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Dicky Hall <Dicky_Hall@swn.com>, Sebastian Ziaja <Sebastian_Ziaja@swn.com>

Jack, as we discussed earlier, nothing more is required. Thanks for keeping us up to date.

Thanks
Strader Gower
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Timmy Minch OHI 8H Surface section

1 message

sdc40 <sdc40@swn.com> Thu, May 19, 2022 at 9:15 AM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: sdc40 <sdc40@swn.com>

Strader / Gayne,

I have a question. Is there anything else that needs to be done when drilling thru a coal void and pumping a dual stage cement job with cement returns to surface. I will send the job report shortly.

We just completed dual stage cement operations on the Timmy Minch OHI 8H, The job was pumped as planned with 41 bbls. of cement circulated to surface.

Jack

SDC 40

Rig Cell: 724-231-3543

Office: 304-884-1864

WSS Days: Jack Hamm 501-428-8483

WSS Nights: Chris Varela 501-428-1691

sdc40@swn.com

swn Southwestern Energy

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

UPDATE: SWN FRAC NOTIFICATION - CARL ROTTER PAD

1 message

Andrea Bond <Andrea_Bond@swn.com> Sun, May 22, 2022 at 11:39 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>
Cc: WVD - WSS <WVD-WSS@swn.com>, Liz Gee <liz_gee@swn.com>, Denise Grantham <Denise_Grantham@swn.com>, Carla Suszkowski <Carla_Suszkowski@swn.com>, Kevin Porsch <Kevin_Porsch@swn.com>, Nick Flesher <Nick_Flesher@swn.com>, Aaron Balderson <Aaron_Balderson@swn.com>, Carol Pruitt <Carol_Pruitt@swn.com>, "DOUGLAS.C.NEWLON@WV.GOV" <DOUGLAS.C.NEWLON@wv.gov>, Nathan Bowden <Nathan_Bowden@swn.com>

UPDATED:

SWN Production LLC submits this notification to the DEP regarding our plan to stimulate the following wells on the Estimated Frac Start Date of 6/2/2022:

- **CARL ROTTER OHI 206H**
- **CARL ROTTER OHI 6H**
- **CARL ROTTER OHI 8H**
- **CARL ROTTER OHI 10H**
- **CARL ROTTER OHI 210H**

Andrea

From: Andrea Bond <Andrea_Bond@SWN.COM>
Sent: Monday, May 9, 2022 9:49 AM
To: Knitowski, Gayne J <gayne.j.knitowski@wv.gov>
Cc: WVD - WSS <WVD-WSS@swn.com>; Liz Gee <liz_gee@swn.com>; Denise Grantham <Denise_Grantham@SWN.COM>; Carla Suszkowski <Carla_Suszkowski@SWN.COM>; Kevin Porsch <Kevin_Porsch@SWN.COM>; Nick Flesher <Nick_Flesher@SWN.COM>; Aaron Balderson <Aaron_Balderson@SWN.COM>; Carol Pruitt <Carol_Pruitt@SWN.COM>; DOUGLAS.C.NEWLON@WV.GOV; Nathan Bowden <Nathan_Bowden@SWN.COM>
Subject: SWN FRAC NOTIFICATION - CARL ROTTER PAD

SWN Production LLC submits this notification to the DEP regarding our plan to begin Pad Prep on the CARL ROTTER PAD on 5/19/2022.

SWN Production LLC submits this notification to the DEP regarding our plan to stimulate the following wells on the Estimated Frac Start Date of 5/28/2022:

- **CARL ROTTER OHI 206H**
- **CARL ROTTER OHI 6H**
- **CARL ROTTER OHI 8H**
- **CARL ROTTER OHI 10H**
- **CARL ROTTER OHI 210H**

Andrea

Andrea Bond

Staff Drilling and Completions Analyst

Northwest Appalachia Team - NEAPP

10000 Energy Drive

Spring, TX 77389

Direct: 832 (SWN) 796.7428

Cell: 832.302.6921

Andrea_Bond@SWN.com

www.swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Updated Frac Start: SWN FRAC NOTIFICATION - SWN A WTZ PAD

1 message

Andrea Bond <Andrea_Bond@swn.com> Mon, Apr 4, 2022 at 3:35 PM
To: Kenneth L Greynolds <kenneth.l.greynolds@wv.gov>
Cc: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, WVD - WSS <WVD-WSS@swn.com>, Liz Gee <liz_gee@swn.com>, Denise Grantham <Denise_Grantham@swn.com>, Carla Suszkowski <Carla_Suszkowski@swn.com>, Aaron Balderson <Aaron_Balderson@swn.com>, Kevin Porsch <Kevin_Porsch@swn.com>, Nick Flesher <Nick_Flesher@swn.com>, Oana Ivanescu <Oana_Ivanescu@swn.com>, "dep.water.use@wv.gov" <dep.water.use@wv.gov>

Good afternoon – please see updated estimated Frac Start Date below:

SWN Production LLC submits this notification to the DEP regarding our plan to stimulate the following wells on the (updated) Estimated Frac Start Date of 4/15/2022.

- **SWN A WTZ 1H**
- **SWN A WTZ 201H**
- **SWN A WTZ 401H**
- **SWN A WTZ 601H**

From: Andrea Bond <Andrea_Bond@SWN.COM>
Sent: Monday, March 21, 2022 4:12 PM
To: Kenneth L Greynolds <kenneth.l.greynolds@wv.gov>
Cc: Knitowski, Gayne J <gayne.j.knitowski@wv.gov>; WVD - WSS <WVD-WSS@swn.com>; Liz Gee <liz_gee@swn.com>; Denise Grantham <Denise_Grantham@SWN.COM>; Carla Suszkowski <Carla_Suszkowski@SWN.COM>; Aaron Balderson <Aaron_Balderson@SWN.COM>; Kevin Porsch <Kevin_Porsch@SWN.COM>; Nick Flesher <Nick_Flesher@SWN.COM>; Oana Ivanescu <Oana_Ivanescu@SWN.COM>; dep.water.use@wv.gov
Subject: SWN FRAC NOTIFICATION - SWN A WTZ PAD
Importance: High

SWN Production LLC submits this notification to the DEP regarding our plan to stimulate the following wells on the Estimated Frac Start Date of 4/18/2022.

- **SWN A WTZ 1H**
- **SWN A WTZ 201H**
- **SWN A WTZ 401H**
- **SWN A WTZ 601H**

Thank you,

Andrea

Andrea Bond

Staff Drilling and Completions Analyst

Northwest Appalachia Team - NEAPP

10000 Energy Drive

Spring, TX 77389

Direct: 832 (SWN) 796.7428

Cell: 832.302.6921

Andrea_Bond@SWN.com

www.swn.com

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Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

VEPCO 2565 P&A Application

8 messages

Keri Fieno <keri.fieno@chk.com> Thu, Mar 3, 2022 at 2:09 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Classification: DCL-Internal

Good afternoon,

Please find the attached P&A application for our Vepco 2565 well. Let me know if you have any questions.

Thank you,

Keri Fieno

HSER, Regulatory Specialist

Chesapeake Energy Corporation

6100 N Western Avenue

Oklahoma City, OK 73118

Office: 405-935-1154

Email: keri.fieno@chk.com

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Inspector Application_Vepco 2565_2022-03-03.pdf
1921K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Mar 3, 2022 at 2:14 PM
To: Jeffrey W McLaughlin <jeffrey.w.mclaughlin@wv.gov>

Cheasapeake plugging permit.

Jeff,

Not sure why she sent this to me. If your good to print a copy out and use that for your approval. If not will you reach out to Keri and tell what you need.

Thanks,

Gayne
[Quoted text hidden]

Inspector Application_Vepco 2565_2022-03-03.pdf
1921K

Keri Fieno <keri.fieno@chk.com> Tue, Mar 29, 2022 at 12:06 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Classification: DCL-Internal

Good afternoon,

I just wanted to follow-up to see if you have had a chance to review/approve this application.

Thank you,

Keri Fieno

HSER, Regulatory Specialist

Chesapeake Energy Corporation

6100 N Western Avenue

Oklahoma City, OK 73118

Office: 405-935-1154

Email: keri.fieno@chk.com

From: Keri Fieno
Sent: Thursday, March 3, 2022 1:10 PM
To: Knitowski, Gayne J <gayne.j.knitowski@wv.gov>
Subject: VEPCO 2565 P&A Application

Classification: DCL-Internal

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Mar 29, 2022 at 12:39 PM
To: Keri Fieno <keri.fieno@chk.com>

Keri,

Jeff McGlauphlin in Charleston reviews the plugging permits. I know operators call down there and get permits rather quickly. I would suggest you call 304-926-0440 ask for him and inquire about the status.

Regards,

Gayne
[Quoted text hidden]

Keri Fieno <keri.fieno@chk.com> Tue, Mar 29, 2022 at 12:49 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Classification: DCL-Internal

Just so I understand, he signs off on the restoration and plugging plan prior to sending the official application. I thought this would similar to the East Dolly Sods application that I sent you last month where you signed off on a portion of the application.

I'm thinking I may be misunderstanding the process.

Thank you,

Keri

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Mar 29, 2022 at 1:09 PM
To: Keri Fieno <keri.fieno@chk.com>

No you are correct. I will sign off on the new permit application and return to you. My response was about the Dolly Sods permit.

Gayne
[Quoted text hidden]

Keri Fieno <keri.fieno@chk.com> Tue, Mar 29, 2022 at 1:17 PM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Classification: DCL-Internal

Perfect. Please let me know if you have any questions in regards to the Vepco application.

[Quoted text hidden]
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, Mar 29, 2022 at 4:07 PM
To: Keri Fieno <keri.fieno@chk.com>

Keri,

Attached is the signed plugging applications.

Regards,

Gayne
[Quoted text hidden]

23-00020.pdf
2111K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Weekly report

3 messages

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Fri, May 6, 2022 at 8:36 AM
To: J Scott Rodeheaver <J.Scott.Rodeheaver@wv.gov>

Scott,

Attached is my weekly report. Alao can you start working up the assessment for NOV #11770 (09-00186). I attached the report. We can sit down and work on the numbers after the initial report is done.

Thanks,

Gayne

2 attachments

5-6-22.xlsx
12K

Speece Summary Report_4-27-22.pdf
24365K

Rodeheaver, J Scott <j.scott.rodeheaver@wv.gov> Thu, Jun 16, 2022 at 10:24 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

I got the 142 page report
[Quoted text hidden]
--
J. Scott Rodeheaver
WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext 41107
304-382-4296

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Thu, Jun 16, 2022 at 10:40 AM
To: "Rodeheaver, J Scott" <j.scott.rodeheaver@wv.gov>

Lol. Good reading before bed
[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

Worthley FWI Dewatering Notification

2 messages

Dawn Keller <Dawn_Keller@swn.com> Tue, May 10, 2022 at 3:55 PM
To: "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>, "Kees, Kelly L" <kelly.l.kees@wv.gov>
Cc: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Jim Childers <Jim_Childers@swn.com>, Stephen Kadlubar <Stephen_Kadlubar@swn.com>, Chad Keilman <Chad_Keilman@swn.com>

Hi Strader and Kelly,

SWN plans to dewater the Worthley Freshwater Impoundment in Brooke County according to the approved dewatering plan to maintain freeboard. The earliest anticipated date to begin dewatering is 5/13/2022, weather permitting. I have attached recent water sampling results for your review.

Please let me know if you have any questions or concerns.

Thanks!

Dawn Keller

Senior Environmental Specialist

Southwestern Energy

1300 Fort Pierpont Drive Suite 201

Morgantown, WV 26508

O: 304-884-1683

C: 501-697-7230

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Worthley- 2032543_1 ESL 04 14 2022 1211.pdf
1502K

Gower, Strader C <strader.c.gower@wv.gov> Wed, May 11, 2022 at 12:56 PM
To: Dawn Keller <Dawn_Keller@swn.com>
Cc: Chad Keilman <Chad_Keilman@swn.com>, Jim Childers <Jim_Childers@swn.com>, "Kees, Kelly L" <kelly.l.kees@wv.gov>, "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, Stephen Kadlubar <Stephen_Kadlubar@swn.com>

Thank you for the update.

[Quoted text hidden]

Knitowski, Gayne J <gayne.j.knitowski@wv.gov>

WVDEP WR-38 Sign-off (TC Energy Wells Victory B 2604 and Majorsville Shallow 4437)

3 messages

Brad Nelson <brad_nelson@tcenergy.com> Fri, May 20, 2022 at 8:24 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>, "strader.c.gower@wv.gov" <strader.c.gower@wv.gov>

Hello Gayne / Strader,

I hope you are both doing well. TC Energy (Columbia Gas Transmission, LLC) recently completed the plugging and abandonment of two storage wells in Marshall County, WV. They are Victory B 2604 (API # 47-051-00777-00-00) and Majorsville Shallow 4437 (API # 47-051-00312-00-00). Would you be able to sign the attached documents and return them to me so that I can submit to the WVDEP? I thought it easiest to reach out via email. If you have any questions, please let me know.

Thank you,

Brad

Brad Nelson

Storage Engineer

Well Engineering & Technology

brad_nelson@tcenergy.com

mobile: 724-250-0610 **desk:** 724-223-2753

TC Energy

455 Racetrack Road

Washington, PA

USA 15301

TCEnergy.com

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Thank you

2 attachments

Majorsville Shallow 4437 WR-38 Notarized 05.19.2022.pdf
1381K

Victory B 2604 WVDEP WR-38 Notarized 05.19.2022.pdf
1373K

Knitowski, Gayne J <gayne.j.knitowski@wv.gov> Tue, May 24, 2022 at 8:17 AM
To: Brad Nelson <brad_nelson@tcenergy.com>

Brad.

attached are the signed affidavits. Have a good day.

Regards,

Gayne
[Quoted text hidden]

2 attachments

51-00777.pdf
1458K

51-00312.pdf
1466K

Brad Nelson <brad_nelson@tcenergy.com> Tue, May 24, 2022 at 8:37 AM
To: "Knitowski, Gayne J" <gayne.j.knitowski@wv.gov>

Thank you Gayne for the help.

Brad

Brad Nelson

Storage Engineer

Well Engineering & Technology

brad_nelson@tcenergy.com

mobile: 724-250-0610 **desk:** 724-223-2753

TC Energy

455 Racetrack Road

Washington, PA

USA 15301

TCEnergy.com

From: Knitowski, Gayne J <gayne.j.knitowski@wv.gov>
Sent: Tuesday, May 24, 2022 8:18 AM
To: Brad Nelson <brad_nelson@tcenergy.com>
Subject: [EXTERNAL] Re: WVDEP WR-38 Sign-off (TC Energy Wells Victory B 2604 and Majorsville Shallow 4437)

EXTERNAL EMAIL: PROCEED WITH CAUTION.
This e-mail has originated from outside of the organization. Do not respond, click on links or open attachments unless you recognize the sender or know the content is safe. If this email looks suspicious, report it.

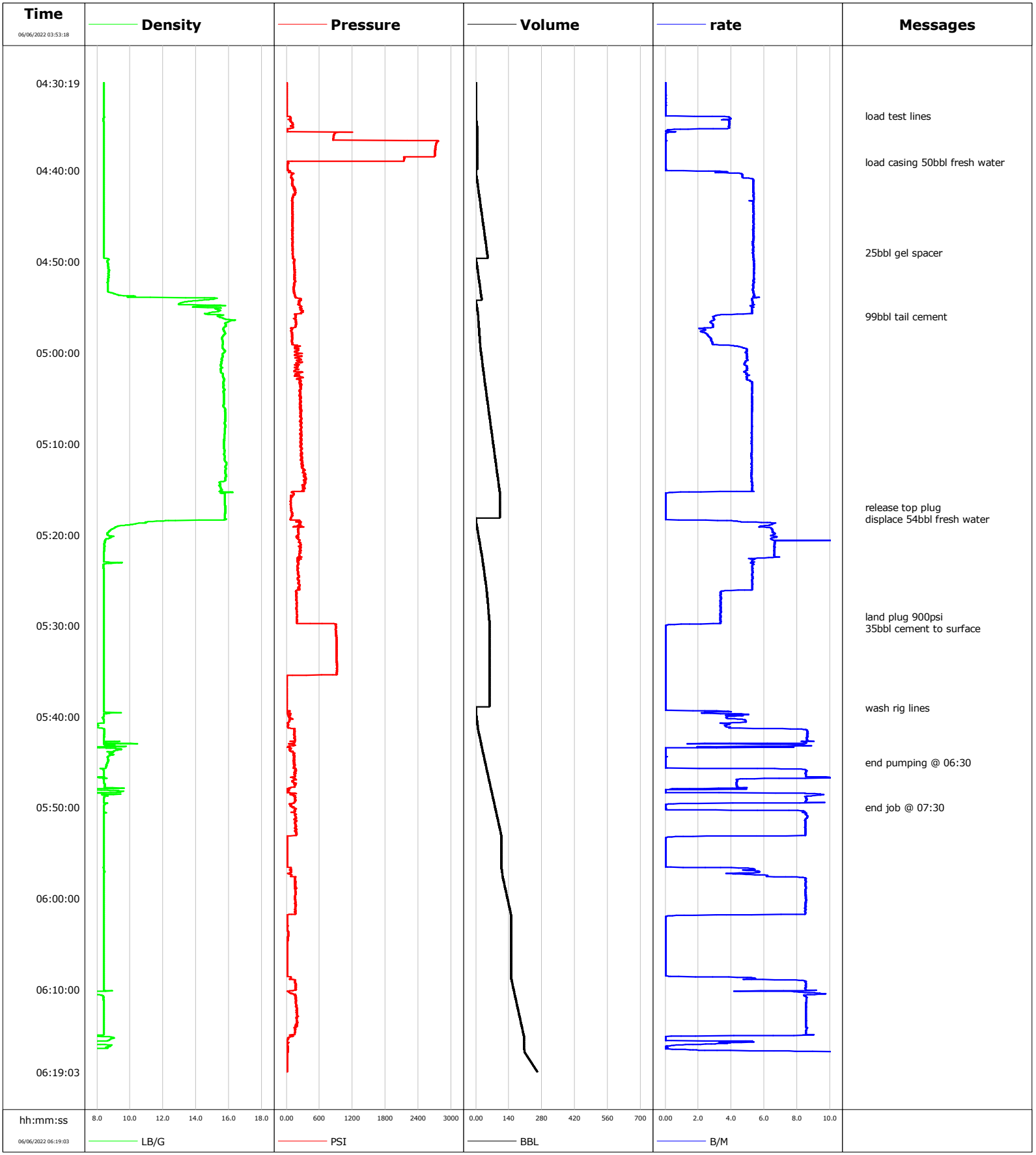
[Quoted text hidden]

Schlumberger

Cementing Job Report

CemCAT v1.8

Well	Charles Jamison 406H	**Client**	Southwestern
Field		**SIR No.**	EOHC-00911
Engineer	Danny Cover	**Job Type**	surface
Country	United States	**Job Date**	06-06-2022



Cementing

PRD Post Job Plot

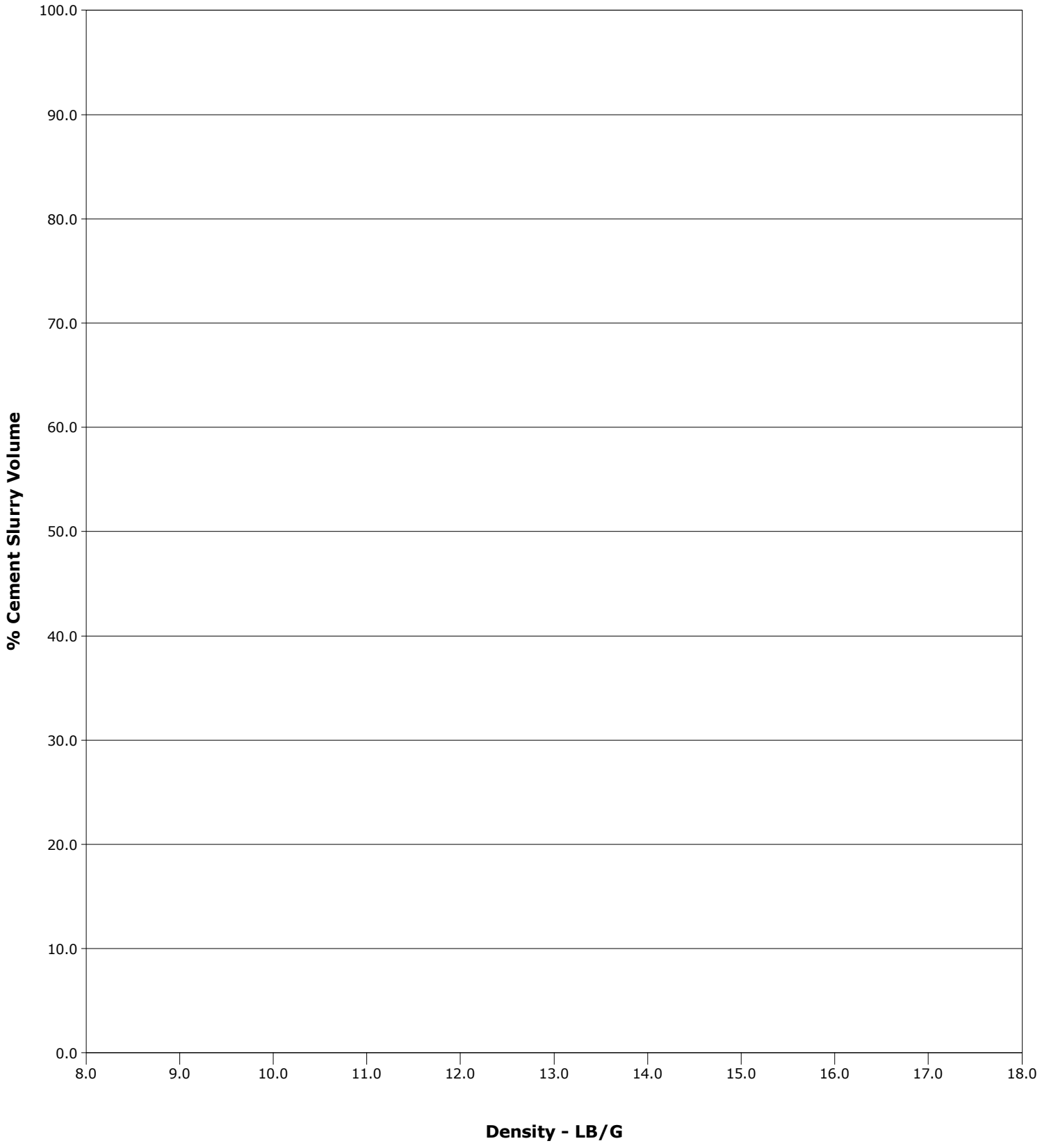
© Schlumberger 1994 - 2022

Schlumberger

Cementing Qa/Qc Density Report

Well	Charles Jamison 406H	**Client**	Southwestern
Field		**SIR No.**	EOHC-00911
Engineer	Danny Cover	**Job Type**	surface
Country	United States	**Job Date**	06-06-2022

- 05/20/1973 02:22:48 to 05/20/1973 02:26:32



Schlumberger Cementing Service Report

Customer	Job Number
Southwestern	EOHC-00911

Well	Location (legal)	Schlumberger Location	Job Start
Charles Jamison 406H 406H	47-051-02434-00-00	Weston	Jun/06/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
		deg	17.5 in	392.0 ft	392.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
Marshall	West Virginia	psi	64 degF	80 degF	lb/gal
Well Master 0066463419	**API/UWI** 47-051-02434-00-00				

Rig Name	Drilled For	Service Via
sdc41	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
	lb/gal	cP

Service Line	Job Type
Cementing	surface

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Service Instructions

load test lines
load casing 50bbl water
25bbl gel spacer
99bbl tail 15.6ppg 1.2cf/f 5.2g/sk
release top plug
displace 54bbl fresh water
land plug 900psi
35bbl cement to surface
wash rig lines
end job

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
136.0	20.0	94.0	110	BUTT
392.0	13.4	54.5	110	BUTT

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	54.0 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	60.0 bbl	bbl	bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement	Casing Tools	Squeeze Job
[x]	[ ]		

Lift Pressure		Shoe Type	Float	Squeeze Type	
Pipe Rotated	[ ] Pipe Reciprocated [ ]	Shoe Depth	392.0 ft	Tool Type	
No. Centralizers	Top Plugs 1 Bottom Plugs	Stage Tool Type		Tool Depth	ft
Cement Head Type	Single	Stage Tool Depth	ft	Tail Pipe Size	in
Job Scheduled For	Arrived on Location	Leave Location	Collar Type	Float	Tail Pipe Depth	ft
Jun/05/2022 22:30	Jun/05/2022 22:00	Jun/06/2022 07:30	Collar Depth	351.0 ft	Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/06/2022	03:53:18	31	0.0	8.40	0.0	
06/06/2022	03:53:48	30	0.0	8.40	0.0	
06/06/2022	03:54:18	31	0.0	8.40	0.0	
06/06/2022	03:54:48	30	0.0	8.40	0.0	
06/06/2022	03:55:18	30	0.0	8.40	0.0	
06/06/2022	03:55:48	31	0.0	8.40	0.0	
06/06/2022	03:56:48	30	0.0	8.40	0.0	
06/06/2022	03:57:18	30	0.0	8.40	0.0	
06/06/2022	03:57:48	29	0.0	8.40	0.0	
06/06/2022	03:58:18	29	0.0	8.40	0.0	
06/06/2022	03:58:48	29	0.0	8.40	0.0	
06/06/2022	03:59:18	29	0.0	8.40	0.0	
06/06/2022	03:59:48	30	0.0	8.40	0.0	
06/06/2022	04:00:18	28	0.0	8.40	0.0	
06/06/2022	04:00:48	28	0.0	8.40	0.0	
06/06/2022	04:01:18	29	0.0	8.40	0.0	
06/06/2022	04:01:48	28	0.0	8.40	0.0	
06/06/2022	04:02:18	29	0.0	8.40	0.0	
06/06/2022	04:02:48	29	0.0	8.40	0.0	
06/06/2022	04:03:18	30	0.0	8.40	0.0	
06/06/2022	04:03:48	29	0.0	8.40	0.0	

Well	Field	Job Start	Customer	Job Number
Charles Jamison 406H 406H		Jun/06/2022	Southwestern	EOHC-00911

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/06/2022	04:04:48	29	0.0	8.40	0.0	
06/06/2022	04:05:18	29	0.0	8.40	0.0	
06/06/2022	04:05:48	28	0.0	8.40	0.0	
06/06/2022	04:06:18	28	0.0	8.40	0.0	
06/06/2022	04:06:48	29	0.0	8.40	0.0	
06/06/2022	04:07:18	29	0.0	8.40	0.0	
06/06/2022	04:07:48	29	0.0	8.40	0.0	
06/06/2022	04:08:18	29	0.0	8.40	0.0	
06/06/2022	04:08:48	28	0.0	8.40	0.0	
06/06/2022	04:09:18	29	0.0	8.40	0.0	
06/06/2022	04:09:48	29	0.0	8.40	0.0	
06/06/2022	04:10:18	29	0.0	8.40	0.0	
06/06/2022	04:10:48	30	0.0	8.40	0.0	
06/06/2022	04:11:18	29	0.0	8.40	0.0	
06/06/2022	04:11:48	29	0.0	8.40	0.0	
06/06/2022	04:12:18	29	0.0	8.40	0.0	
06/06/2022	04:12:48	29	0.0	8.40	0.0	
06/06/2022	04:13:18	29	0.0	8.40	0.0	
06/06/2022	04:13:48	30	0.0	8.40	0.0	
06/06/2022	04:14:18	29	0.0	8.40	0.0	
06/06/2022	04:14:48	29	0.0	8.40	0.0	
06/06/2022	04:15:18	29	0.0	8.40	0.0	
06/06/2022	04:15:48	29	0.0	8.40	0.0	
06/06/2022	04:16:18	30	0.0	8.40	0.0	
06/06/2022	04:16:48	29	0.0	8.40	0.0	
06/06/2022	04:17:18	30	0.0	8.40	0.0	
06/06/2022	04:17:48	28	0.0	8.40	0.0	
06/06/2022	04:18:18	29	0.0	8.40	0.0	
06/06/2022	04:18:48	27	0.0	8.40	0.0	
06/06/2022	04:19:18	29	0.0	8.40	0.0	
06/06/2022	04:19:48	28	0.0	8.40	0.0	
06/06/2022	04:20:18	30	0.0	8.40	0.0	
06/06/2022	04:20:48	29	0.0	8.40	0.0	
06/06/2022	04:21:18	30	0.0	8.40	0.0	
06/06/2022	04:21:48	30	0.0	8.40	0.0	
06/06/2022	04:22:18	31	0.0	8.40	0.0	
06/06/2022	04:22:48	30	0.0	8.40	0.0	
06/06/2022	04:23:18	30	0.0	8.40	0.0	
06/06/2022	04:23:48	26	0.0	8.40	0.0	
06/06/2022	04:24:18	19	0.0	8.40	0.0	
06/06/2022	04:24:48	19	0.0	8.40	0.0	
06/06/2022	04:25:18	14	0.0	8.40	0.0	
06/06/2022	04:25:48	12	0.0	8.40	0.0	
06/06/2022	04:26:18	8	0.0	8.40	0.0	
06/06/2022	04:26:48	6	0.0	8.39	0.0	
06/06/2022	04:27:18	5	0.0	8.39	0.0	
06/06/2022	04:27:48	5	0.0	8.40	0.0	
06/06/2022	04:28:18	1	0.0	8.40	0.0	
06/06/2022	04:28:48	-1	0.0	8.40	0.0	
06/06/2022	04:29:18	2	0.0	8.40	0.0	
06/06/2022	04:30:18	4	0.0	8.40	0.0	
06/06/2022	04:30:48	3	0.0	8.40	0.0	
06/06/2022	04:31:18	5	0.0	8.40	0.0	
06/06/2022	04:31:48	5	0.0	8.40	0.0	

Well	Field	Job Start	Customer	Job Number
Charles Jamison 406H 406H		Jun/06/2022	Southwestern	EOHC-00911

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/06/2022	04:32:48	3	0.0	8.40	0.0	
06/06/2022	04:33:18	5	0.0	8.40	0.0	
06/06/2022	04:33:48	2	0.0	8.40	0.0	
06/06/2022	04:34:00	0	0.1	8.40	0.0	load test lines
06/06/2022	04:34:18	70	4.0	8.38	0.0	
06/06/2022	04:34:48	105	3.9	8.39	0.0	
06/06/2022	04:35:18	121	3.9	8.39	0.0	
06/06/2022	04:35:48	895	0.2	8.39	0.0	
06/06/2022	04:36:18	854	0.0	8.39	0.0	
06/06/2022	04:36:48	2748	0.0	8.39	0.0	
06/06/2022	04:37:18	2714	0.0	8.39	0.0	
06/06/2022	04:37:48	2702	0.0	8.39	0.0	
06/06/2022	04:38:18	2696	0.0	8.39	0.0	
06/06/2022	04:38:48	2140	0.0	8.39	0.0	
06/06/2022	04:39:00	22	0.0	8.39	0.0	load casing 50bbl fresh water
06/06/2022	04:39:18	19	0.0	8.39	0.0	
06/06/2022	04:39:48	18	0.0	8.39	0.0	
06/06/2022	04:40:18	132	4.5	8.39	0.0	
06/06/2022	04:40:48	102	4.8	8.39	0.0	
06/06/2022	04:41:18	102	5.3	8.39	0.0	
06/06/2022	04:41:48	138	5.3	8.39	0.0	
06/06/2022	04:42:18	159	5.3	8.40	0.0	
06/06/2022	04:42:48	110	5.3	8.39	0.0	
06/06/2022	04:43:18	92	5.1	8.40	0.0	
06/06/2022	04:43:48	119	5.3	8.39	0.0	
06/06/2022	04:44:18	106	5.3	8.40	0.0	
06/06/2022	04:44:48	108	5.4	8.40	0.0	
06/06/2022	04:45:18	110	5.4	8.39	0.0	
06/06/2022	04:45:48	112	5.3	8.39	0.0	
06/06/2022	04:46:18	109	5.3	8.39	0.0	
06/06/2022	04:46:48	107	5.3	8.39	0.0	
06/06/2022	04:47:18	110	5.3	8.39	0.0	
06/06/2022	04:47:48	110	5.3	8.39	0.0	
06/06/2022	04:48:18	113	5.3	8.39	0.0	
06/06/2022	04:48:48	120	5.3	8.39	0.0	
06/06/2022	04:49:00	108	5.3	8.39	0.0	25bbl gel spacer
06/06/2022	04:49:18	119	5.3	8.39	0.0	
06/06/2022	04:49:48	151	5.3	8.68	0.0	
06/06/2022	04:50:18	138	5.4	8.68	0.0	
06/06/2022	04:50:48	136	5.4	8.69	0.0	
06/06/2022	04:51:18	148	5.4	8.67	0.0	
06/06/2022	04:51:48	144	5.4	8.68	0.0	
06/06/2022	04:52:18	148	5.4	8.63	0.0	
06/06/2022	04:52:48	131	5.3	8.64	0.0	
06/06/2022	04:53:18	134	5.3	8.67	0.0	
06/06/2022	04:53:48	154	5.4	10.20	0.0	
06/06/2022	04:54:18	241	5.3	13.95	0.0	
06/06/2022	04:54:48	243	5.3	15.49	0.0	
06/06/2022	04:55:18	272	5.2	15.43	0.0	
06/06/2022	04:55:48	161	4.1	15.02	0.0	
06/06/2022	04:56:00	161	3.0	15.32	0.0	99bbl tail cement
06/06/2022	04:56:18	146	2.9	15.78	0.0	
06/06/2022	04:56:48	173	2.8	15.76	0.0	
06/06/2022	04:57:18	90	2.4	15.68	0.0	

Well	Field	Job Start	Customer	Job Number
Charles Jamison 406H 406H		Jun/06/2022	Southwestern	EOHC-00911

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/06/2022	04:58:18	100	2.7	15.59	0.0	
06/06/2022	04:58:48	99	2.8	15.63	0.0	
06/06/2022	04:59:18	246	4.3	15.60	0.0	
06/06/2022	04:59:48	203	4.9	15.77	0.0	
06/06/2022	05:00:18	151	5.0	15.60	0.0	
06/06/2022	05:00:48	241	5.0	15.57	0.0	
06/06/2022	05:01:18	206	4.8	15.51	0.0	
06/06/2022	05:01:48	210	4.9	15.48	0.0	
06/06/2022	05:02:18	163	4.9	15.64	0.0	
06/06/2022	05:02:48	259	4.9	15.68	0.0	
06/06/2022	05:03:48	252	5.3	15.66	0.0	
06/06/2022	05:04:18	249	5.3	15.67	0.0	
06/06/2022	05:04:48	245	5.3	15.67	0.0	
06/06/2022	05:05:18	264	5.3	15.69	0.0	
06/06/2022	05:05:48	260	5.2	15.66	0.0	
06/06/2022	05:06:18	280	5.3	15.75	0.0	
06/06/2022	05:06:48	274	5.2	15.77	0.0	
06/06/2022	05:07:18	278	5.2	15.77	0.0	
06/06/2022	05:07:48	282	5.3	15.73	0.0	
06/06/2022	05:08:18	262	5.2	15.74	0.0	
06/06/2022	05:08:48	273	5.2	15.74	0.0	
06/06/2022	05:09:18	262	5.2	15.72	0.0	
06/06/2022	05:09:48	259	5.2	15.70	0.0	
06/06/2022	05:10:18	265	5.2	15.70	0.0	
06/06/2022	05:10:48	277	5.2	15.73	0.0	
06/06/2022	05:11:18	276	5.2	15.72	0.0	
06/06/2022	05:11:48	291	5.2	15.74	0.0	
06/06/2022	05:12:18	302	5.2	15.84	0.0	
06/06/2022	05:12:48	317	5.2	15.81	0.0	
06/06/2022	05:13:18	328	5.2	15.79	0.0	
06/06/2022	05:13:48	352	5.2	15.78	0.0	
06/06/2022	05:14:18	350	5.3	15.43	0.0	
06/06/2022	05:14:48	320	5.3	15.48	0.0	
06/06/2022	05:15:18	111	3.3	15.68	0.0	
06/06/2022	05:15:48	96	0.0	15.74	0.0	
06/06/2022	05:16:18	72	0.0	15.75	0.0	
06/06/2022	05:16:48	74	0.0	15.76	0.0	
06/06/2022	05:17:00	80	0.0	15.76	0.0	release top plug
06/06/2022	05:17:18	97	0.0	15.76	0.0	
06/06/2022	05:17:48	112	0.0	15.76	0.0	
06/06/2022	05:18:00	90	0.0	15.76	0.0	displace 54bbl fresh water
06/06/2022	05:18:18	72	0.0	15.80	0.0	
06/06/2022	05:18:48	232	6.5	10.38	0.0	
06/06/2022	05:19:18	218	6.4	9.03	0.0	
06/06/2022	05:19:48	213	6.6	8.64	0.0	
06/06/2022	05:20:18	209	6.7	8.77	0.0	
06/06/2022	05:20:48	233	6.6	8.45	0.0	
06/06/2022	05:21:18	225	6.6	8.45	0.0	
06/06/2022	05:21:48	237	6.6	8.42	0.0	
06/06/2022	05:22:18	231	6.6	8.41	0.0	
06/06/2022	05:22:48	208	5.3	8.39	0.0	
06/06/2022	05:23:18	207	5.4	8.38	0.0	
06/06/2022	05:23:48	199	5.3	8.39	0.0	
06/06/2022	05:24:18	203	5.3	8.39	0.0	

Well	Field	Job Start	Customer	Job Number
Charles Jamison 406H 406H		Jun/06/2022	Southwestern	EOHC-00911

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/06/2022	05:25:18	218	5.3	8.39	0.0	
06/06/2022	05:25:48	216	5.3	8.39	0.0	
06/06/2022	05:26:18	176	3.4	8.39	0.0	
06/06/2022	05:26:48	180	3.4	8.39	0.0	
06/06/2022	05:27:18	181	3.4	8.39	0.0	
06/06/2022	05:27:48	183	3.3	8.39	0.0	
06/06/2022	05:28:18	189	3.4	8.39	0.0	
06/06/2022	05:28:48	194	3.3	8.39	0.0	
06/06/2022	05:29:00	186	3.3	8.39	0.0	land plug 900psi
06/06/2022	05:29:18	189	3.3	8.39	0.0	
06/06/2022	05:29:48	860	3.3	8.39	0.0	
06/06/2022	05:30:00	890	0.0	8.39	0.0	35bbl cement to surface
06/06/2022	05:30:18	899	0.0	8.39	0.0	
06/06/2022	05:30:48	900	0.0	8.39	0.0	
06/06/2022	05:31:18	907	0.0	8.39	0.0	
06/06/2022	05:31:48	910	0.0	8.39	0.0	
06/06/2022	05:32:18	911	0.0	8.39	0.0	
06/06/2022	05:32:48	911	0.0	8.40	0.0	
06/06/2022	05:33:18	913	0.0	8.39	0.0	
06/06/2022	05:33:48	913	0.0	8.39	0.0	
06/06/2022	05:34:18	913	0.0	8.40	0.0	
06/06/2022	05:34:48	914	0.0	8.40	0.0	
06/06/2022	05:35:18	915	0.0	8.40	0.0	
06/06/2022	05:35:48	3	0.0	8.40	0.0	
06/06/2022	05:36:18	5	0.0	8.40	0.0	
06/06/2022	05:37:18	1	0.0	8.40	0.0	
06/06/2022	05:37:48	3	0.0	8.40	0.0	
06/06/2022	05:38:18	5	0.0	8.40	0.0	
06/06/2022	05:38:48	4	0.0	8.40	0.0	
06/06/2022	05:39:00	4	0.0	8.40	0.0	wash rig lines
06/06/2022	05:39:18	3	0.0	8.40	0.0	
06/06/2022	05:39:48	74	5.1	8.40	0.0	
06/06/2022	05:40:18	58	4.5	8.39	0.0	
06/06/2022	05:40:48	24	3.9	7.79	0.0	
06/06/2022	05:41:18	86	4.5	8.36	0.0	
06/06/2022	05:41:48	139	8.6	8.43	0.0	
06/06/2022	05:42:18	146	8.6	8.41	0.0	
06/06/2022	05:42:48	148	8.4	8.65	0.0	
06/06/2022	05:43:18	29	8.5	9.66	0.0	
06/06/2022	05:43:48	64	8.5	9.03	0.0	
06/06/2022	05:44:18	152	8.5	8.76	0.0	
06/06/2022	05:44:48	141	8.5	8.68	0.0	
06/06/2022	05:45:00	154	8.5	8.66	0.0	end pumping @ 06:30
06/06/2022	05:45:18	143	8.5	8.56	0.0	
06/06/2022	05:45:48	169	8.5	8.38	0.0	
06/06/2022	05:46:18	153	8.6	8.39	0.0	
06/06/2022	05:46:48	160	8.5	8.48	0.0	
06/06/2022	05:47:18	140	8.5	8.40	0.0	
06/06/2022	05:47:48	73	8.6	8.48	0.0	
06/06/2022	05:48:18	19	8.6	9.44	0.0	
06/06/2022	05:48:48	141	8.6	8.44	0.0	
06/06/2022	05:49:18	151	8.5	8.41	0.0	
06/06/2022	05:49:48	71	8.5	8.41	0.0	
06/06/2022	05:50:00	122	8.5	8.40	0.0	end job @ 07:30

Well	Field	Job Start	Customer	Job Number
Charles Jamison 406H 406H		Jun/06/2022	Southwestern	EOHC-00911

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
06/06/2022	05:50:48	150	8.5	8.39	0.0	
06/06/2022	05:51:18	145	8.5	8.40	0.0	
06/06/2022	05:51:48	171	8.5	8.40	0.0	
06/06/2022	05:52:18	173	8.6	8.40	0.0	
06/06/2022	05:52:48	188	8.5	8.40	0.0	
06/06/2022	05:53:18	16	0.0	8.40	0.0	
06/06/2022	05:53:48	15	0.0	8.40	0.0	
06/06/2022	05:54:18	16	0.0	8.40	0.0	
06/06/2022	05:54:48	14	0.0	8.40	0.0	
06/06/2022	05:55:18	14	0.0	8.40	0.0	
06/06/2022	05:55:48	15	0.0	8.40	0.0	
06/06/2022	05:56:18	15	0.0	8.40	0.0	
06/06/2022	05:56:48	79	5.4	8.40	0.0	
06/06/2022	05:57:18	43	4.2	8.40	0.0	
06/06/2022	05:57:48	153	8.5	8.40	0.0	
06/06/2022	05:58:18	152	8.5	8.40	0.0	
06/06/2022	05:58:48	155	8.5	8.40	0.0	
06/06/2022	05:59:18	164	8.5	8.40	0.0	
06/06/2022	05:59:48	155	8.5	8.40	0.0	
06/06/2022	06:00:18	162	8.5	8.40	0.0	
06/06/2022	06:00:48	153	8.5	8.40	0.0	
06/06/2022	06:01:18	167	8.5	8.40	0.0	
06/06/2022	06:01:48	15	3.7	8.40	0.0	
06/06/2022	06:02:18	13	0.0	8.40	0.0	
06/06/2022	06:02:48	14	0.0	8.40	0.0	
06/06/2022	06:03:18	15	0.0	8.40	0.0	
06/06/2022	06:03:48	33	0.0	8.40	0.0	
06/06/2022	06:04:18	19	0.0	8.40	0.0	
06/06/2022	06:04:48	14	0.0	8.40	0.0	
06/06/2022	06:05:18	12	0.0	8.40	0.0	
06/06/2022	06:05:48	11	0.0	8.40	0.0	
06/06/2022	06:06:18	12	0.0	8.40	0.0	
06/06/2022	06:06:48	12	0.0	8.40	0.0	
06/06/2022	06:07:18	13	0.0	8.40	0.0	
06/06/2022	06:07:48	13	0.0	8.40	0.0	
06/06/2022	06:08:18	13	0.0	8.40	0.0	
06/06/2022	06:08:48	77	5.4	8.40	0.0	
06/06/2022	06:09:18	163	8.5	8.40	0.0	
06/06/2022	06:09:48	171	8.5	8.40	0.0	
06/06/2022	06:10:48	163	8.5	8.38	0.0	
06/06/2022	06:11:18	161	8.6	8.40	0.0	
06/06/2022	06:11:48	180	8.5	8.40	0.0	
06/06/2022	06:12:18	175	8.5	8.40	0.0	
06/06/2022	06:12:48	183	8.5	8.40	0.0	
06/06/2022	06:13:18	185	8.5	8.40	0.0	
06/06/2022	06:13:48	165	8.5	8.40	0.0	
06/06/2022	06:14:18	161	8.6	8.41	0.0	
06/06/2022	06:14:48	151	8.5	8.41	0.0	
06/06/2022	06:15:18	30	0.0	9.02	0.0	
06/06/2022	06:15:48	17	4.6	6.90	0.0	
06/06/2022	06:16:18	23	0.0	8.71	0.0	
06/06/2022	06:16:48	22	7.9	0.04	0.0	
06/06/2022	06:17:18	17	25.0	-0.00	0.0	
06/06/2022	06:17:48	16	25.0	-0.00	0.0	

Well	Field	Job Start	Customer	Job Number
Charles Jamison 406H 406H		Jun/06/2022	Southwestern	EOHC-00911

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
3.5			25.0	99.0	0.0	25.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
2763	11	180	700			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
%	99.0 bbl	54.0 bbl	63 degF	Cement Circulated to Surface? [X]	Volume 35.0 bbl
				Washed Thru Perfs [ ]	To ft

Customer or Authorized Representative	Schlumberger Supervisor		
	Danny Cover	Circulation Lost [ ]	Job Completed [X]
		-	-

Service Quality Evaluation

Client:	Southwestern
Field:	
Rig:	sdc41
Well:	Charles Jamison 406H
Service Line:	Cementing
Job Type:	surface

Service Order #:	
Date:	Jun/06/2022
Operating Time (hh:mm):	00:00
Client Rep:	
Schlumberger Engineer:	Danny Cover
Schlumberger FSM:	

Main Objective:

To be completed by Company Rep. Please answer Y (Yes) or N (No) and add any comments below.

		Score	Yes / No	Result
1	**HSE**			
1a	Free of lost time injury and compliance with SLB and loc. spec. HSE practice	5	**yes** [X] **no** [ ]	5
1b	Free of environmental spill or non-compliant discharge	5	**yes** [X] **no** [ ]	5
1c	Wellsite left clean	4	**yes** [X] **no** [ ]	4
			Sub-total	100%

2	**Design / Preparation**			
2a	Program incl. job simulation (CemCADE) & pump schedule / tool hydraulic calcs	3	**yes** [X] **no** [ ]	3
2b	Equipment maintenance schedule completed / Green tagged	2	**yes** [X] **no** [ ]	2
2c	All materials and equipment required for job/contingency checked & on location	2	**yes** [X] **no** [ ]	2
2d	Safety / pre-job meeting conducted with all involved present	2	**yes** [X] **no** [ ]	2
			Sub-total	100%

3	**Execution**			
3a	Lost time < 30 mins	3	**yes** [X] **no** [ ]	3
3b	Equipment pressure tested succesfully	3	**yes** [X] **no** [ ]	3
3c	All key parameters monitored and recorded accurately (Pressure, Rate, Density)	2	**yes** [X] **no** [ ]	2
3d	Plugs / darts released and tested succesfully	2	**yes** [X] **no** [ ]	2
3e	Density variation met expectations	2	**yes** [X] **no** [ ]	2
3f	Personnel performed as per expectations	2	**yes** [X] **no** [ ]	2
3g	Equipment performed as per expectations	2	**yes** [X] **no** [ ]	2
3h	Job pumped as per design	3	**yes** [X] **no** [ ]	3
3i	Did job start on time	2	**yes** [X] **no** [ ]	2
3j	Free of Operational failures (screen out, Cementing Example, etc.)	3	**yes** [X] **no** [ ]	3
			Sub-total	100%

4	**Evaluation**			
4a	Main job objective achieved with no consequential non-productive time	10	**yes** [X] **no** [ ]	10
			Sub-total	100%

Total 100%

Comments: (Please include a brief explanation for a "NO" response and summarize any innovations attempted on this well.)

Client:	**Schlumberger:**
Client Signature:	**Schlumberger Signature:**

Casing Offload Tally

Well Name: TIMMY MINCH OHI 210 **Surface, Set Depth: 556.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003370000	4001164289	SWN PRODUCTION COMPANY L...	1,208.20	25.80	1,234.00 KB1,6/28/2016 07:12	
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Conductor Set

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Surface	556.00	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	13.375	54.50		Yes	1.81	No	Innovex Float shoe		554.2	1.81
2	1	Casing Joints	13.375	54.50	J-55	Yes	39.21	No			515.0	41.02
3		Casing Joints	13.375	54.50	J-55	Yes	20.44	No	Pup Joint		494.5	61.46
4		Float Collar	13.375	54.50		Yes	1.47	No	Innovex float collar		493.1	62.93
5	2	Casing Joints	13.375	54.50	J-55	Yes	41.54	Yes	BS w/CEMENT BASKET		451.5	104.47
6		Casing Joints	13.375	54.50	J-55	Yes	20.42	No	Pup Joint - w/CEMENT BASKET		431.1	124.89
7		Stage Tool	13.375	54.50		Yes	19.69	No	Innovex DV Tool PKR		411.4	144.58
8		Casing Joints	13.375	54.50	J-55	Yes	7.47	No	Pup Joint on DV Tool		404.0	152.05
9	3	Casing Joints	13.375	54.50	J-55	Yes	41.53	Yes	BS		362.4	193.58
10	4	Casing Joints	13.375	54.50	J-55	Yes	39.21	No			323.2	232.79
11	5	Casing Joints	13.375	54.50	J-55	Yes	41.53	Yes	BS		281.7	274.32
12	6	Casing Joints	13.375	54.50	J-55	Yes	41.52	No			240.2	315.84
13	7	Casing Joints	13.375	54.50	J-55	Yes	41.43	Yes	BS		198.7	357.27
14	8	Casing Joints	13.375	54.50	J-55	Yes	38.79	No			159.9	396.06
15	9	Casing Joints	13.375	54.50	J-55	Yes	41.54	Yes	BS		118.4	437.60
16	10	Casing Joints	13.375	54.50	J-55	Yes	40.14	No			78.3	477.74
17	11	Casing Joints	13.375	54.50	J-55	Yes	41.50	No			36.8	519.24
18		Mandrel Hanger	13.375	54.50		Yes	1.20	No	Mandrel Hanger		35.6	520.44
19		Landing Joint	13.375	54.50		Yes	39.00	No	Landing Joint		-3.4	559.44
	12	Casing Joints	13.375	54.50	J-55	No	41.04	No	OUT #1			
	13	Casing Joints	13.375	54.50	J-55	No	41.38	No	OUT #2			
	14	Casing Joints	13.375	54.50	J-55	No	39.85	No	OUT #3			
	15	Casing Joints	13.375	54.50	J-55	No	41.44	No	OUT #4			
	16	Casing Joints	13.375	54.50	J-55	No	36.20	No	OUT #5			
		Casing Joints	13.375	54.50	J-55	No	9.60	No	Pup Joint			
		Casing Joints	13.375	54.50	J-55	No	9.60	No	Pup Joint			

Casing Offload Tally

Well Name: BETTY SCHAFER MSH 1 **Surface, Set Depth: 375.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47051023820000	4001163434	SWN PRODUCTION COMPANY L...	848.40	26.70	875.10 KB1,10/20/2020 14:34	2/9/2022 09:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	MARSHALL	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Surface	375.00	2/9/2022 14:30

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	13.375	54.50		Yes	1.93	Yes	Weatherford Float Shoe		373.1	1.93
2	1	Casing Joints	13.375	54.50	J-55	Yes	41.64	Yes			331.4	43.57
3		Float Collar	13.375	54.50		Yes	1.89	No	Weatherford Float Collar		329.5	45.46
4	2	Casing Joints	13.375	54.50	J-55	Yes	41.90	Yes			287.6	87.36
5	3	Casing Joints	13.375	54.50	J-55	Yes	40.93	No	Basket		246.7	128.29
6	4	Casing Joints	13.375	54.50	J-55	Yes	41.61	Yes	Basket		205.1	169.90
7	5	Casing Joints	13.375	54.50	J-55	Yes	41.54	No			163.6	211.44
8	6	Casing Joints	13.375	54.50	J-55	Yes	41.55	Yes			122.0	252.99
9	7	Casing Joints	13.375	54.50	J-55	Yes	41.26	No			80.8	294.25
10	8	Casing Joints	13.375	54.50	J-55	Yes	41.54	Yes			39.2	335.79
11		Casing Joints	13.375	54.50	J-55	Yes	9.60	No	Pup Joint		29.6	345.39
12		Mandrel Hanger	13.375	54.50		Yes	1.20	No	Mandrel Hanger		28.4	346.59
13		Landing Joint	13.375	54.50		Yes	32.00	No	Landing Joint		-3.6	378.59
	9	Casing Joints	13.375	54.50	J-55	No	41.54	No	Out #1			
	10	Casing Joints	13.375	54.50	J-55	No	41.55	No	Out #2			
	11	Casing Joints	13.375	54.50	J-55	No	41.54	No	Out #3			
	12	Casing Joints	13.375	54.50	J-55	No	41.54	No	Out #4			
	13	Casing Joints	13.375	54.50	J-55	No	41.53	No	Out #5			
	14	Casing Joints	13.375	54.50	J-55	No	41.55	No	Out #6			
		Casing Joints	13.375	54.50	J-55	No	20.96	No	Out Pup Joint			

Casing Offload Tally

Well Name: CARL ROTTER OHI 8 **Surface, Set Depth: 767.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003300000	4001165868	SWN PRODUCTION COMPANY L...	1,336.70	25.30	1,362.00 KB2,9/16/2020 00:00	
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Conductor Set

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Surface	767.00	

Casing Run Tally

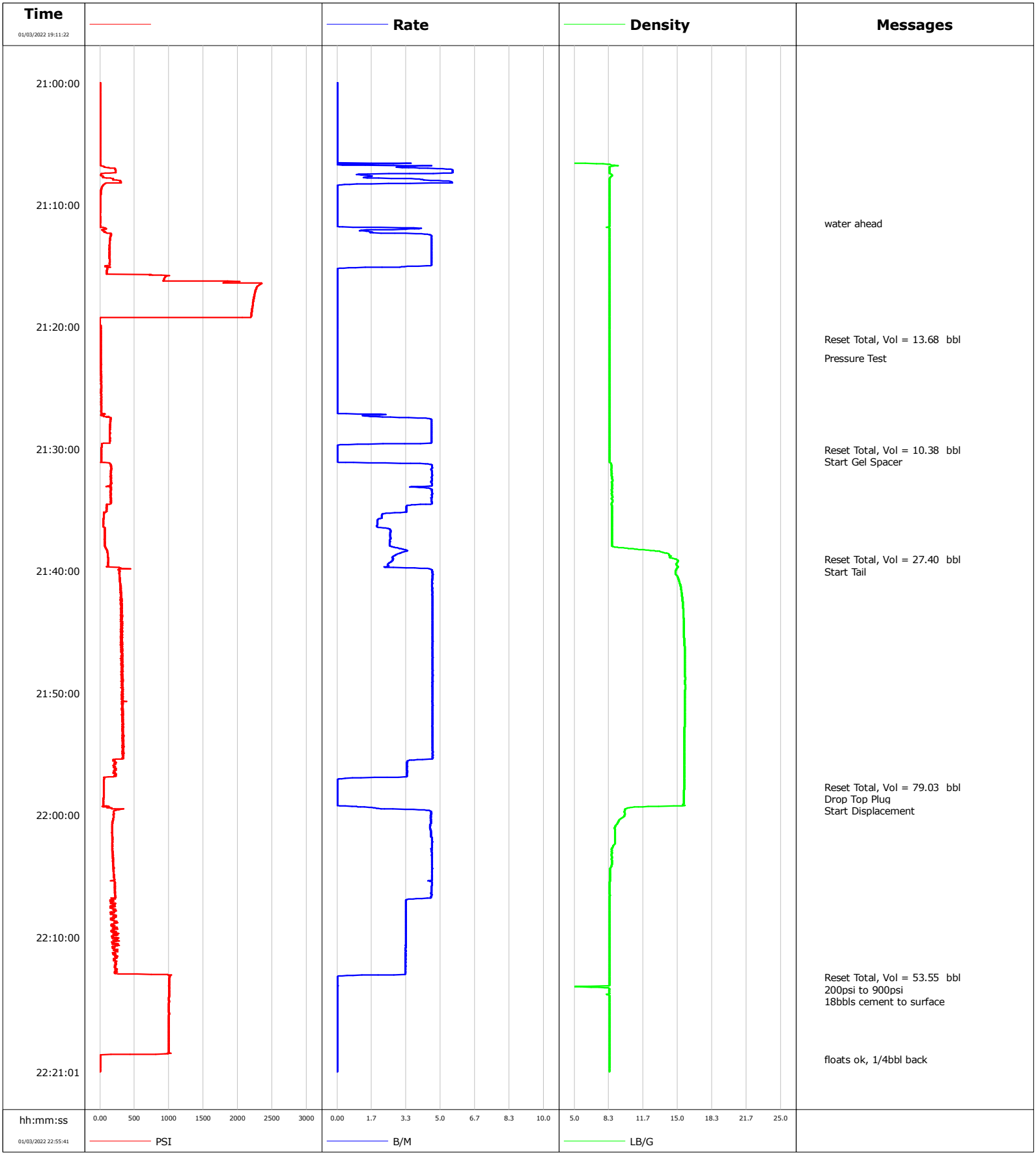
Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	13.375	54.50		Yes	1.89	No	Weatherford Float Shoe		765.1	1.89
2	1	Casing Joints	13.375	54.50	J-55	Yes	41.53	Yes	BS 1		723.6	43.42
3		Float Collar	13.375	54.50		Yes	1.54	No	Weatherford Float Collar		722.0	44.96
4	2	Casing Joints	13.375	54.50	J-55	Yes	41.54	Yes	BS 2		680.5	86.50
5	3	Casing Joints	13.375	54.50	J-55	Yes	41.53	Yes	BS 3		639.0	128.03
6	4	Casing Joints	13.375	54.50	J-55	Yes	41.53	Yes	BS 4		597.4	169.56
7	5	Casing Joints	13.375	54.50	J-55	Yes	41.54	No			555.9	211.10
8	6	Casing Joints	13.375	54.50	J-55	Yes	41.55	Yes	BS 5		514.4	252.65
9	7	Casing Joints	13.375	54.50	J-55	Yes	41.54	No			472.8	294.19
10	8	Casing Joints	13.375	54.50	J-55	Yes	41.57	Yes	BS 6		431.2	335.76
11	9	Casing Joints	13.375	54.50	J-55	Yes	41.54	No			389.7	377.30
12	10	Casing Joints	13.375	54.50	J-55	Yes	41.52	Yes	BS 7		348.2	418.82
13	11	Casing Joints	13.375	54.50	J-55	Yes	41.53	No			306.7	460.35
14	12	Casing Joints	13.375	54.50	J-55	Yes	41.52	Yes	BS 8		265.1	501.87
15	13	Casing Joints	13.375	54.50	J-55	Yes	41.53	No			223.6	543.40
16	14	Casing Joints	13.375	54.50	J-55	Yes	41.54	Yes	BS 9		182.1	584.94
17	15	Casing Joints	13.375	54.50	J-55	Yes	41.54	No			140.5	626.48
18	16	Casing Joints	13.375	54.50	J-55	Yes	41.55	Yes	BS 10		99.0	668.03
19		Casing Joints	13.375	54.50	J-55	Yes	20.42	No	Pup Joint 1		78.6	688.45
20	17	Casing Joints	13.375	54.50	J-55	Yes	41.54	Yes	BS 11		37.0	729.99
21		Mandrel Hanger	13.375	54.50		Yes	1.20	No	Mandrel Hanger		35.8	731.19
22		Landing Joint	13.375	54.50		Yes	39.00	No	Landing Joint		-3.2	770.19
	18	Casing Joints	13.375	54.50	J-55	No	41.52	No	Out 1			
	19	Casing Joints	13.375	54.50	J-55	No	41.55	No	Out 2			
	20	Casing Joints	13.375	54.50	J-55	No	41.54	No	Out 3			
	21	Casing Joints	13.375	54.50	J-55	No	41.53	No	Out 4			

4 total joints out (#18,#19,#20,#21)
1- 10' Pup joint out ***Not in Tally*** and 1 - No Drift ***Not in Tally***

Schlumberger

Cementing Job Report

Well	WTZ 1H	**Client**	SWN
Field		**SIR No.**	EN82-02604
Engineer	Barry Dickerson	**Job Type**	Surface
Country	United States	**Job Date**	01-03-2022



Schlumberger Cementing Service Report

Customer	Job Number
SWN	EN82-02604

Well	Location (legal)	Schlumberger Location	Job Start
WTZ 1H 1H		SOH	Jan/03/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
	Clean-Sandstone	0 deg	17.5 in	407.0 ft	407.0 ft

County	State/Province	BHP	BHST	BHCT	Pore Press. Gradient
Wetzel	WV	psi	64 degF	80 degF	lb/gal

Well Master	API/UWI
0066456841	47-103-03421-00-00

Rig Name	Drilled For	Service Via
SDC 41	Gas	Land

Offshore Zone	Well Class	Well Type
	New	New Well Completion

Drilling Fluid Type	Max. Density	Plastic Viscosity
	lb/gal	cP

Service Line	Job Type
Cementing	Surface

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Service Instructions

25 bbls gel spacer
80bbls Tail@15.6ppg,372sks,Y=1.2,Class A
Drop Top Plug
Displace 53bbls

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
387.0	13.4	54.5	J55	BUTT
0.0	0.0	0.0		

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	53.0 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	60.0 bbl	56.0 bbl	31.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
[X]	[ ]

Lift Pressure	Pipe Rotated	Pipe Reciprocated
200 psi	[ ]	[ ]

No. Centralizers	Top Plugs	Bottom Plugs
	1	

Cement Head Type
Single

Job Scheduled For	Arrived on Location	Leave Location
Jan/03/2022 18:00	Jan/03/2022 18:00	Jan/04/2022 00:00

Casing Tools

Shoe Type	Guide
Shoe Depth	387.0 ft
Stage Tool Type	
Stage Tool Depth	ft
Collar Type	Float
Collar Depth	342.0 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	CMT_TREAT_PRES PSI	CMT_RATE B/M	CMT_DENS LB/G	Volume BBL	Message
01/03/2022	19:11:22	0	0.0	0.08	0.0	
01/03/2022	19:13:22	1	0.0	0.09	0.0	
01/03/2022	19:15:22	-0	0.0	0.08	0.0	
01/03/2022	19:17:22	1	0.0	0.08	0.0	
01/03/2022	19:19:22	1	0.0	0.09	0.0	
01/03/2022	19:23:22	1	0.0	0.08	0.0	
01/03/2022	19:25:22	2	0.0	0.09	0.0	
01/03/2022	19:27:22	1	0.0	0.09	0.0	
01/03/2022	19:29:22	1	0.0	0.08	0.0	
01/03/2022	19:31:22	2	0.0	0.08	0.0	
01/03/2022	19:33:22	2	0.0	0.09	0.0	
01/03/2022	19:35:22	2	0.0	0.09	0.0	
01/03/2022	19:37:22	2	0.0	0.08	0.0	
01/03/2022	19:39:22	3	0.0	0.09	0.0	
01/03/2022	19:41:22	2	0.0	0.09	0.0	
01/03/2022	19:43:22	2	0.0	0.09	0.0	
01/03/2022	19:45:22	2	0.0	0.08	0.0	
01/03/2022	19:47:22	3	0.0	0.09	0.0	
01/03/2022	19:49:22	3	0.0	0.09	0.0	
01/03/2022	19:51:22	2	0.0	0.09	0.0	
01/03/2022	19:53:22	3	0.0	0.09	0.0	

Well	Field	Job Start	Customer	Job Number
WTZ 1H 1H		Jan/03/2022	SWN	EN82-02604

Date	Time 24-hr clock	CMT_TREAT_PRES PSI	CMT_RATE B/M	CMT_DENS LB/G	Volume BBL	Message
01/03/2022	19:57:22	3	0.0	0.09	0.0	
01/03/2022	19:59:22	3	0.0	0.09	0.0	
01/03/2022	20:01:22	3	0.0	0.09	0.0	
01/03/2022	20:03:22	3	0.0	0.09	0.0	
01/03/2022	20:05:22	3	0.0	0.09	0.0	
01/03/2022	20:07:22	4	0.0	0.09	0.0	
01/03/2022	20:09:22	3	0.0	0.09	0.0	
01/03/2022	20:11:22	4	0.0	0.09	0.0	
01/03/2022	20:13:22	3	0.0	0.09	0.0	
01/03/2022	20:15:22	4	0.0	0.09	0.0	
01/03/2022	20:17:22	4	0.0	0.09	0.0	
01/03/2022	20:19:22	5	0.0	0.09	0.0	
01/03/2022	20:21:22	4	0.0	0.09	0.0	
01/03/2022	20:23:22	4	0.0	0.09	0.0	
01/03/2022	20:25:22	3	0.0	0.09	0.0	
01/03/2022	20:27:22	4	0.0	0.09	0.0	
01/03/2022	20:29:22	4	0.0	0.09	0.0	
01/03/2022	20:31:22	4	0.0	0.09	0.0	
01/03/2022	20:33:22	4	0.0	0.09	0.0	
01/03/2022	20:35:22	4	0.0	0.09	0.0	
01/03/2022	20:37:22	4	0.0	0.09	0.0	
01/03/2022	20:39:22	5	0.0	0.09	0.0	
01/03/2022	20:41:22	4	0.0	0.09	0.0	
01/03/2022	20:43:22	4	0.0	0.09	0.0	
01/03/2022	20:45:22	5	0.0	0.09	0.0	
01/03/2022	20:47:22	4	0.0	0.09	0.0	
01/03/2022	20:49:22	5	0.0	0.09	0.0	
01/03/2022	20:51:22	5	0.0	0.09	0.0	
01/03/2022	20:53:22	4	0.0	0.09	0.0	
01/03/2022	20:55:22	4	0.0	0.09	0.0	
01/03/2022	20:57:22	4	0.0	0.09	0.0	
01/03/2022	20:59:22	4	0.0	0.09	0.0	
01/03/2022	21:01:22	5	0.0	0.09	0.0	
01/03/2022	21:03:22	4	0.0	0.09	0.0	
01/03/2022	21:05:22	4	0.0	0.09	0.0	
01/03/2022	21:07:22	223	5.6	8.40	3.1	
01/03/2022	21:09:22	6	0.0	8.41	6.2	
01/03/2022	21:11:22	1	0.0	8.41	6.2	
01/03/2022	21:11:31	1	0.0	8.40	6.2	water ahead
01/03/2022	21:13:22	138	4.6	8.40	12.0	
01/03/2022	21:15:22	100	0.0	8.40	19.9	
01/03/2022	21:17:22	2242	0.0	8.40	19.9	
01/03/2022	21:19:22	-1	0.0	8.40	19.9	
01/03/2022	21:21:00	11	0.0	8.40	19.9	Reset Total, Vol = 13.68 bbl
01/03/2022	21:21:22	12	0.0	8.40	19.9	
01/03/2022	21:22:32	13	0.0	8.40	19.9	Pressure Test
01/03/2022	21:23:22	13	0.0	8.40	19.9	
01/03/2022	21:25:22	14	0.0	8.40	19.9	
01/03/2022	21:27:22	132	1.9	8.40	20.3	
01/03/2022	21:29:22	148	4.6	8.40	29.3	
01/03/2022	21:30:03	19	0.0	8.40	30.2	Reset Total, Vol = 10.38 bbl
01/03/2022	21:30:31	17	0.0	8.40	30.2	Start Gel Spacer
01/03/2022	21:31:22	161	4.6	8.59	31.3	
01/03/2022	21:33:22	160	4.6	8.61	40.4	

Well	Field	Job Start	Customer	Job Number
WTZ 1H 1H		Jan/03/2022	SWN	EN82-02604

Date	Time 24-hr clock	CMT_TREAT_PRES PSI	CMT_RATE B/M	CMT_DENS LB/G	Volume BBL	Message
01/03/2022	21:39:04	118	2.7	14.94	57.6	Reset Total, Vol = 27.40 bbl
01/03/2022	21:39:22	116	2.5	14.92	58.4	
01/03/2022	21:39:44	283	3.4	14.99	59.4	Start Tail
01/03/2022	21:41:22	312	4.6	15.30	66.8	
01/03/2022	21:43:22	306	4.6	15.55	76.1	
01/03/2022	21:45:22	315	4.6	15.61	85.3	
01/03/2022	21:47:22	330	4.6	15.69	94.5	
01/03/2022	21:49:22	332	4.6	15.72	103.7	
01/03/2022	21:51:22	334	4.6	15.69	112.9	
01/03/2022	21:53:22	322	4.6	15.66	122.2	
01/03/2022	21:55:22	346	4.6	15.65	131.4	
01/03/2022	21:57:22	55	0.0	15.65	136.7	
01/03/2022	21:57:40	53	0.0	15.64	136.7	Reset Total, Vol = 79.03 bbl
01/03/2022	21:57:44	53	0.0	15.63	136.7	Drop Top Plug
01/03/2022	21:59:22	136	1.7	10.46	136.8	
01/03/2022	22:01:22	175	4.5	8.93	145.5	
01/03/2022	22:03:22	183	4.6	8.62	154.7	
01/03/2022	22:05:22	155	4.4	8.46	163.9	
01/03/2022	22:07:22	220	3.3	8.40	172.3	
01/03/2022	22:09:22	214	3.3	8.40	178.9	
01/03/2022	22:11:22	190	3.3	8.40	185.6	
01/03/2022	22:13:17	1009	0.0	8.40	191.2	Reset Total, Vol = 53.55 bbl
01/03/2022	22:13:19	1009	0.0	8.40	191.2	200psi to 900psi
01/03/2022	22:13:20	1007	0.0	8.40	191.2	18bbls cement to surface
01/03/2022	22:13:22	1006	0.0	8.40	191.2	
01/03/2022	22:15:22	1001	0.0	8.40	191.2	
01/03/2022	22:17:22	998	0.0	8.40	191.2	
01/03/2022	22:19:22	997	0.0	8.40	191.2	
01/03/2022	22:19:59	5	0.0	8.40	191.2	floats ok, 1/4bbl back
01/03/2022	22:21:22	7	0.0	8.40	191.2	
01/03/2022	22:23:22	10	0.0	8.40	191.2	
01/03/2022	22:25:22	8	0.0	8.40	191.2	
01/03/2022	22:27:22	5	0.0	8.40	191.2	
01/03/2022	22:29:22	5	0.0	8.40	191.2	
01/03/2022	22:31:22	4	0.0	8.40	191.2	
01/03/2022	22:33:22	5	0.0	8.40	191.2	
01/03/2022	22:35:22	13	0.0	8.40	191.2	
01/03/2022	22:37:22	14	0.0	8.40	191.2	
01/03/2022	22:39:22	76	3.1	8.40	193.9	
01/03/2022	22:41:22	237	4.5	8.75	203.4	
01/03/2022	22:43:22	218	6.4	8.29	216.4	
01/03/2022	22:45:22	133	0.0	8.40	221.7	
01/03/2022	22:47:22	347	8.3	8.40	235.3	
01/03/2022	22:49:22	341	8.3	8.40	252.0	
01/03/2022	22:51:22	10	0.0	8.40	261.8	
01/03/2022	22:53:22	11	0.0	8.40	261.8	
01/03/2022	22:55:22	12	0.0	8.40	261.8	

Well	Field	Job Start	Customer	Job Number
WTZ 1H 1H		Jan/03/2022	SWN	EN82-02604

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
4.4			8.4	80.0	0.0	25.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
2355	12	124	900			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
%	80.0 bbl	53.0 bbl	55 degF	Cement Circulated to Surface? [X]	Volume 18.0 bbl
				Washed Thru Perfs [ ]	To ft

Customer or Authorized Representative	Schlumberger Supervisor		
	Barry Dickerson	Circulation Lost [ ]	Job Completed [X]
		-	-

Casing Offload Tally

Well Name: TIMMY MINCH OHI 8 **Surface, Set Depth: 530.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003350000	4001164218	SWN PRODUCTION COMPANY L...	1,208.30	25.70	1,234.00 KB1,6/28/2016 07:06	5/16/2022 23:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Surface	530.00	5/16/2022 18:00

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	13.375	54.50		Yes	2.60	No	Innovex		527.4	2.60
2	1	Casing Joints	13.375	54.50	J-55	Yes	41.56	No			485.8	44.16
3	2	Casing Joints	13.375	54.50	J-55	Yes	41.53	No			444.3	85.69
4		Float Collar	13.375	54.50		Yes	1.50	No	Innovex		442.8	87.19
5	3	Casing Joints	13.375	54.50	J-55	Yes	41.54	No	Cement Basket 10' Below top of Jt BS		401.3	128.73
6	21	External Casing Packer	13.375	54.50		Yes	19.69	No	Innovex DV / Packer		381.6	148.42
7	20	Casing Joints	13.375	54.50	J-55	Yes	7.80	No	Pup on packer		373.8	156.22
8	4	Casing Joints	13.375	54.50	J-55	Yes	41.54	No	Bow Spring		332.2	197.76
9	5	Casing Joints	13.375	54.50	J-55	Yes	41.54	No			290.7	239.30
10	6	Casing Joints	13.375	54.50	J-55	Yes	41.89	No	Bow Spring		248.8	281.19
11	7	Casing Joints	13.375	54.50	J-55	Yes	41.53	No			207.3	322.72
12	8	Casing Joints	13.375	54.50	J-55	Yes	41.39	No	Bow Spring		165.9	364.11
13	9	Casing Joints	13.375	54.50	J-55	Yes	41.70	No			124.2	405.81
14	10	Casing Joints	13.375	54.50	J-55	Yes	41.68	No	Bow Spring		82.5	447.49
15	11	Casing Joints	13.375	54.50	J-55	Yes	41.41	No			41.1	488.90
16	12	Casing Joints	13.375	54.50	J-55	Yes	41.90	No	Bow Spring		-0.8	530.80
		Mandrel Hanger	13.375	54.50		No	0.50	No				
		Landing Joint	13.375	54.40		No	38.00	No				
	13	Casing Joints	13.375	54.50	J-55	No	40.64	No	OUT			
	14	Casing Joints	13.375	54.50	J-55	No	40.07	No	OUT			
	15	Casing Joints	13.375	54.50	J-55	No	37.49	No	OUT			
	16	Casing Joints	13.375	54.50	J-55	No	20.70	No	OUT			
	17	Casing Joints	13.375	54.50	J-55	No	20.06	No	OUT			
	18	Casing Joints	13.375	54.50	J-55	No	9.60	No	OUT			
	19	Casing Joints	13.375	54.50	J-55	No	9.61	No	OUT			

Casing Offload Tally

Well Name: CARL ROTTER OHI 10 **Surface, Set Depth: 764.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003280000	4001171228	SWN PRODUCTION COMPANY L...	1,336.70	25.40	1,362.10 KB2,9/16/2020 00:00	4/14/2022 04:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Surface	764.00	4/14/2022 12:00

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	13.375	54.50		Yes	1.89	No	Weatherford Float Shoe		762.1	1.89
2	1	Casing Joints	13.375	54.50	J-55	Yes	41.53	Yes	BS 1		720.6	43.42
3		Float Collar	13.375	54.50		Yes	1.54	No	Weatherford Float Collar		719.0	44.96
4	2	Casing Joints	13.375	54.50	J-55	Yes	41.55	Yes	BS 2		677.5	86.51
5	3	Casing Joints	13.375	54.50	J-55	Yes	41.55	Yes	BS 3		635.9	128.06
6	4	Casing Joints	13.375	54.50	J-55	Yes	41.56	Yes	BS 4		594.4	169.62
7	5	Casing Joints	13.375	54.50	J-55	Yes	41.52	No			552.9	211.14
8	6	Casing Joints	13.375	54.50	J-55	Yes	41.58	Yes	BS 5		511.3	252.72
9	7	Casing Joints	13.375	54.50	J-55	Yes	41.52	No			469.8	294.24
10	8	Casing Joints	13.375	54.50	J-55	Yes	41.57	Yes	BS 6		428.2	335.81
11	9	Casing Joints	13.375	54.50	J-55	Yes	41.55	No			386.6	377.36
12	10	Casing Joints	13.375	54.50	J-55	Yes	41.56	Yes	BS 7		345.1	418.92
13	11	Casing Joints	13.375	54.50	J-55	Yes	41.53	No			303.6	460.45
14	12	Casing Joints	13.375	54.50	J-55	Yes	41.54	Yes	BS 8		262.0	501.99
15	13	Casing Joints	13.375	54.50	J-55	Yes	41.54	No			220.5	543.53
16	14	Casing Joints	13.375	54.50	J-55	Yes	41.52	Yes	BS 9		179.0	585.05
17	15	Casing Joints	13.375	54.50	J-55	Yes	39.13	No			139.8	624.18
18	16	Casing Joints	13.375	54.50	J-55	Yes	41.53	Yes	BS 10		98.3	665.71
19		Casing Joints	13.375	54.50	J-55	Yes	20.71	No	Pup Joint 1		77.6	686.42
20	17	Casing Joints	13.375	54.50	J-55	Yes	41.53	Yes	BS 11		36.1	727.95
21		Mandrel Hanger	13.375	54.50		Yes	1.20	No	Mandrel Hanger		34.8	729.15
22		Landing Joint	13.375	54.50		Yes	39.00	No	Landing Joint		-4.2	768.15
	18	Casing Joints	13.375	54.50	J-55	No	41.53	No	Out 1			
	19	Casing Joints	13.375	54.50	J-55	No	41.52	No	Out 2			
	20	Casing Joints	13.375	54.50	J-55	No	41.54	No	Out 3			
		Casing Joints	13.375	54.50	J-55	No	9.76	No	Out Pup joint 2			

Casing Offload Tally

Well Name: CARL ROTTER OHI 6 **Surface, Set Depth: 767.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003270000	4001166132	SWN PRODUCTION COMPANY L...	1,336.70	25.30	1,362.00 KB2,9/16/2020 00:00	3/18/2022 01:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Conductor Set

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Surface	767.00	3/18/2022 23:15

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	13.375	54.50		Yes	1.89	No	Weatherford Float Shoe		765.1	1.89
2	1	Casing Joints	13.375	54.50	J-55	Yes	41.59	Yes			723.5	43.48
3		Float Collar	13.375	54.50		Yes	1.52	No	Weatherford Float Collar		722.0	45.00
4	2	Casing Joints	13.375	54.50	J-55	Yes	41.53	Yes			680.5	86.53
5	3	Casing Joints	13.375	54.50	J-55	Yes	41.55	Yes			638.9	128.08
6	4	Casing Joints	13.375	54.50	J-55	Yes	41.51	Yes			597.4	169.59
7	5	Casing Joints	13.375	54.50	J-55	Yes	41.51	No			555.9	211.10
8	6	Casing Joints	13.375	54.50	J-55	Yes	41.54	Yes			514.4	252.64
9	7	Casing Joints	13.375	54.50	J-55	Yes	41.55	No			472.8	294.19
10	8	Casing Joints	13.375	54.50	J-55	Yes	41.55	Yes			431.3	335.74
11	9	Casing Joints	13.375	54.50	J-55	Yes	41.56	No			389.7	377.30
12	10	Casing Joints	13.375	54.50	J-55	Yes	41.55	Yes			348.2	418.85
13	11	Casing Joints	13.375	54.50	J-55	Yes	41.52	No			306.6	460.37
14	12	Casing Joints	13.375	54.50	J-55	Yes	41.51	Yes			265.1	501.88
15	13	Casing Joints	13.375	54.50	J-55	Yes	41.53	No			223.6	543.41
16	14	Casing Joints	13.375	54.50	J-55	Yes	41.53	Yes			182.1	584.94
17	15	Casing Joints	13.375	54.50	J-55	Yes	41.51	No			140.6	626.45
18	16	Casing Joints	13.375	54.50	J-55	Yes	41.56	Yes			99.0	668.01
19		Casing Joints	13.375	54.50	J-55	Yes	20.96	No	20' Pup Joint		78.0	688.97
20	17	Casing Joints	13.375	54.50	J-55	Yes	41.57	Yes			36.5	730.54
21		Mandrel Hanger	13.375	54.50		Yes	1.20	No	Mandrel Hanger		35.3	731.74
		Landing Joint	13.375	54.50		No	39.00	No	Landing Joint			
	18	Casing Joints	13.375	54.50	J-55	No	41.53	No	Out 1			
	19	Casing Joints	13.375	54.50	J-55	No	41.52	No	Out 2			
	20	Casing Joints	13.375	54.50	J-55	No	41.53	No	Out 3			
	21	Casing Joints	13.375	54.50	J-55	No	41.51	No	Out 4			
	22	Casing Joints	13.375	54.50	J-55	No	41.54	No	Out 5			
	23	Casing Joints	13.375	54.50	J-55	No	9.78	No	10' Pup Joint Out			

NORTH

EXISTING SILT FENCE

EXISTING TESLOVICH WELL PAD LOD

EXISTING TANK PAD

PROPOSED TRUCK OFFLOAD AREA

N040.217466
W080.635590

PROPOSED TESLOVICH 22K SECONDARY CONTAINMENT TANK

PROPOSED TESLOVICH 17K REUSE AST TANK

EXISTING ACCESS

309'

24'

12'

35'

75'

20'

10'

10'

10'

10'

15'

LEGEND

- 1000 — EXISTING INDEX CONTOUR (10')
- EXISTING INTERMEDIATE CONTOUR (2')
- EXISTING TAX MAP PARCEL BOUNDARY
- EXISTING FENCE
- G — EXISTING GAS LINE
- EXISTING LIMITS OF DISTURBANCE
- WV SAMB STREAM
- DELINEATED STREAM
- DELINEATED WETLAND
- NWI WETLAND
- EXISTING POND
- EXISTING GRAVEL
- EXISTING PAVED
- PROPOSED REUSE SURFACE LINE (TEMPORARY)
- P — EXISTING PUMP LOCATION SITE
- S — STAGE SPILL KIT
- AST WILL TEMPORARILY STORE REUSE WATER (RECYCLED FLOWBACK/PRODUCTION WATER
- SPILL CONTAINMENT

SCALE IN FEET
0 20' 40'

NOTE

1. AST WILL TEMPORARILY STORE A BLEND OF FRESHWATER AND REUSE WATER (RECYCLED FLOWBACK/PRODUCTION WATER). THE AST WILL HOLD A MAXIMUM OF 17,000 BARRELS (714,000 GALLONS) OF WATER AND WAS PLACED INSIDE A 22,000 BARRELS (924,000 GALLONS) AST FOR SECONDARY CONTAINMENT.

REVISION RECORD

NO	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.
120 Genesis Boulevard · Bridgeport, WV 26330
Ph: 304.933.3119 · 855.488.9539 · Fax: 304.933.3327
www.cecinc.com

SWN WATER RESOURCES COMPANY, LLC.

LINDA GREATHOUSE TO TESLOVICH TWL

TESLOVICH REUSE AST
AST EXHIBIT
SITE PLAN

DATE:	JUNE 2021
DRAWN BY:	KES
DWG SCALE:	AS SHOWN
CHECKED BY:	JMA
PROJECT NO:	312-319
APPROVED BY:	JMP

DRAWING NO.: 1

SHEET 1 OF 1

P:\310-320\312-319\--CAD\Dwg\EXHIBITS\312319-AST EXHIBIT.dwg[1] LS(6/24/2021 - Cesh) - LP: 6/24/2021 4:43 PM

Unable to Process

Segmented Radial Cement Bond Gamma Ray, CCL Log

APPALACHIAN WELL SURVEYS

Company Southwestern Energy
Well Brian Teslovich BRK 3H
Field Panhandle
County Brooke State WV

Company Southwestern Energy
Well Brian Teslovich BRK 3H
Field Panhandle
County Brooke State WV

Location: API # : 47-009-00311-00-00
Lat: 40.216657
Lon:-80.633358
SEC N/A TWP N/A RGE N/A

Other Services
None

Permanent Datum	Ground Level	Elevation 1149'
Log Measured From	K.B., 26'	
Drilling Measured From	K.B.	

Elevation
K.B. 1175'
D.F. 1174'
G.L. 1149'

Date	7-Nov-2021		
Run Number	One		
Depth Driller	323'		
Depth Logger	321'		
Bottom Logged Interval	320'		
Top Log Interval	Surface		
Open Hole Size	17.5"		
Type Fluid	F/W		
Density / Viscosity	8.3#		
Max. Recorded Temp.	64.7 deg F		
Estimated Cement Top	Surface		
Time Well Ready	04:00		
Time Logger on Bottom	04:15		
Equipment Number	16		
Location	Cambridge, OH		
Recorded By	C. Yelverton		
Witnessed By	R. Rudd		

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To
One	17.5"	Surface	323'				

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	13.375"	54.5	Surface	323'
Prot. String				
Production String				
Liner				

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

ZERO @ K.B.

Thank You For Using Appalachian Well Surveys!!!

Main Pass

APPALACHIAN

WELL SURVEYS

Database File:	swn_brian teslovich brk 3h_13_375scbl.db
Dataset Pathname:	pass3.3
Presentation Format:	!45obm13
Dataset Creation:	Sun Nov 07 04:35:12 2021 by Calc 7.0 B1
Charted by:	Depth in Feet scaled 1:240

395	Travel Time (usec)	295
-15	*Casing Collars*	1.7
0	Temperature (degF)	200
0	GR (GAPI)	180

TEMP (degF)

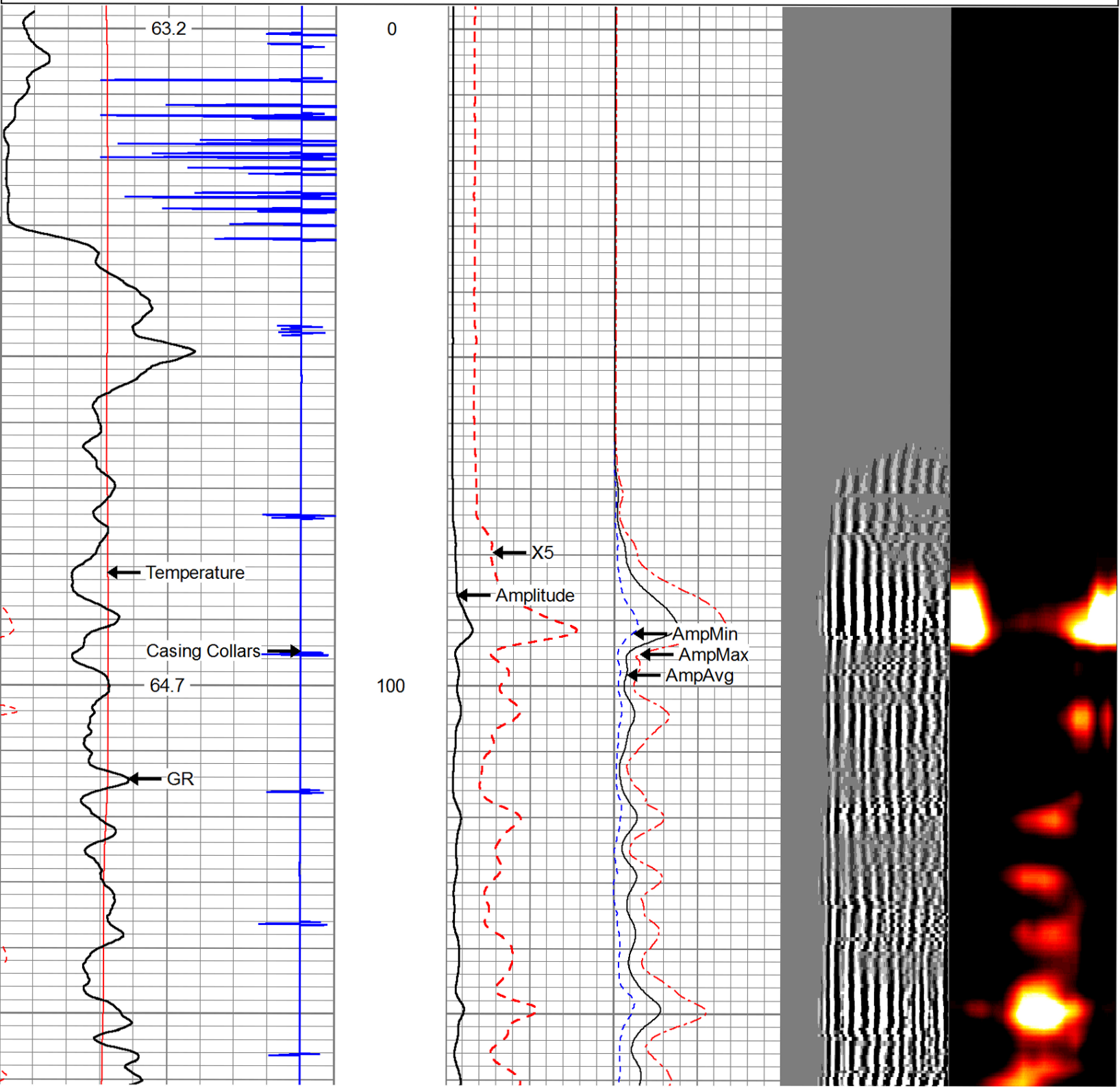
	Amplitude	
0	(mV)	100
0	X5 (mV)	20

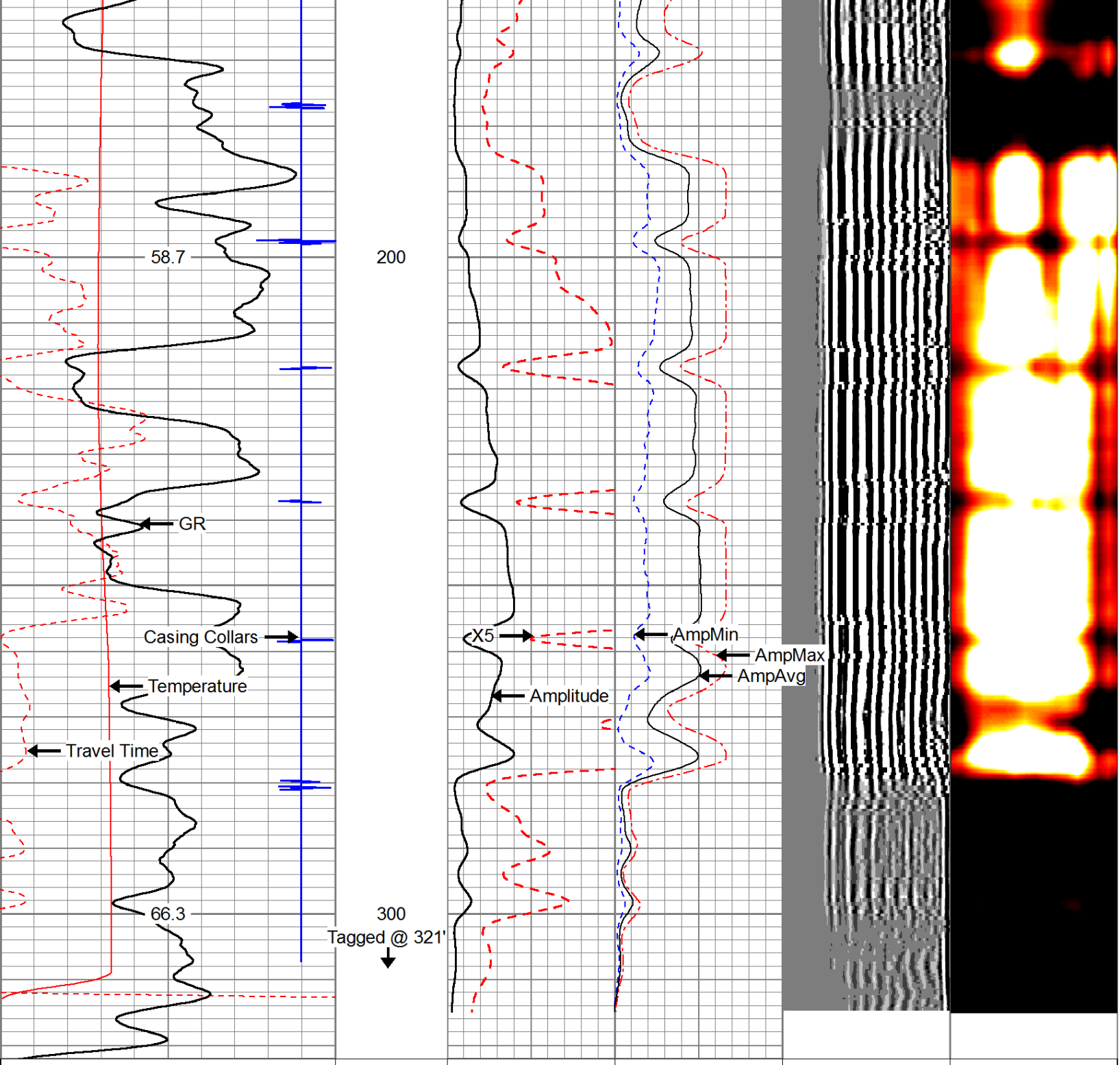
0	AmpMin	150
0	AmpMax	150
0	AmpAvg	150

300 VDL 1300

1 Sector Map 16

20 60





395	Travel Time (usec)	295
-15	*Casing Collars*	1.7
0	Temperature (degF)	200
0	GR (GAPI)	180

TEMP (degF)

	Amplitude	
0	(mV)	100
0	X5 (mV)	20

0	AmpMin	150
0	AmpMax	150
0	AmpAvg	150

300 VDL 1300

1 Sector Map 16

20 60

APPALACHIAN WELL SURVEYS

Repeat Pass

Database File:	swn_brian teslovich brk 3h_13_375scbl.db
Dataset Pathname:	pass3.2
Presentation Format:	!45obm13
Dataset Creation:	Sun Nov 07 04:33:45 2021 by Calc 7.0 B1
Charted by:	Depth in Feet scaled 1:240

395	Travel Time (usec)	295
-15	*Casing Collars*	1.7
0	Temperature (degF)	200
0	GR (GAPI)	180

TEMP (degF)

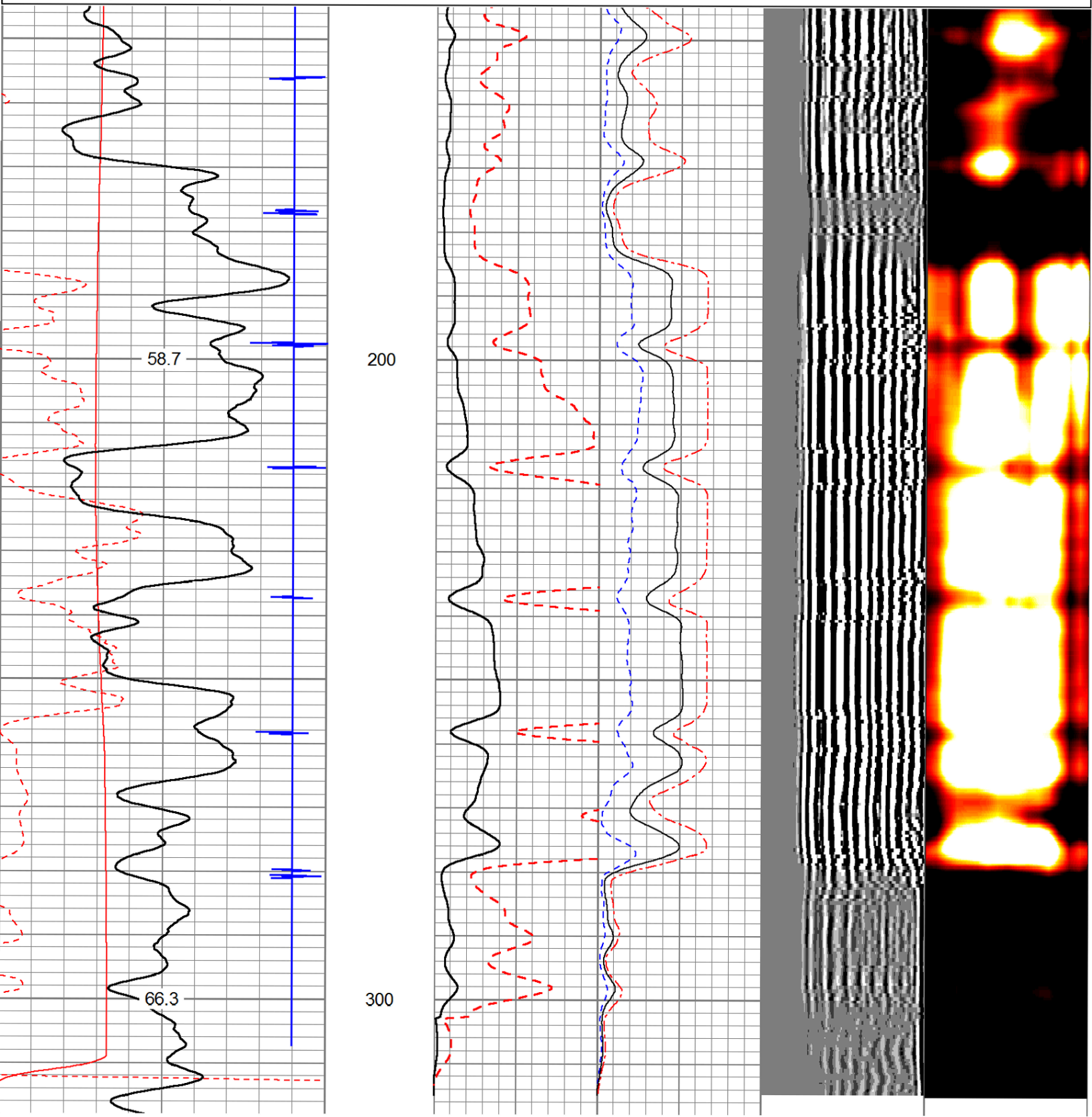
	Amplitude	
0	(mV)	100
0	X5 (mV)	20

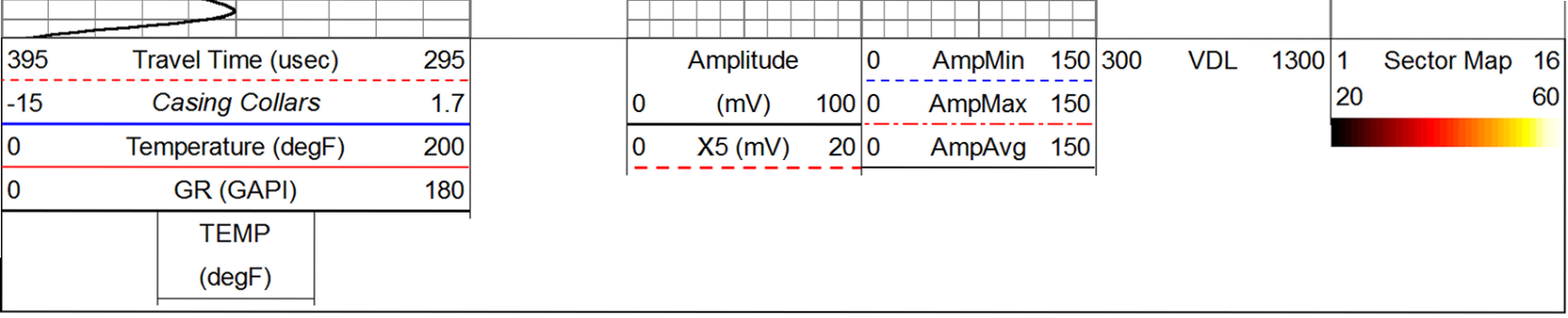
0	AmpMin	150
0	AmpMax	150
0	AmpAvg	150

300 VDL 1300

1 Sector Map 16

20 60





Log Variables

Database:C:\Warrior\Data\swn_brian teslovich brk 3h_13_375scbl.db
Dataset: field/well/run1/pass3

Top - Bottom

XXXX	PPT usec	CASEWGHT lb/ft	MAXAMPL mV	MINAMPL mV	MINATTN db/ft	SRFTEMP degF	CASEOD in
0	0	54.5	41.3	2.5	0.8	0	13.375

PERFS	TDEPTH ft	BOTTEMP degF	BOREID in
0	0	100	17.5

Calibration Report

Database File: swn_brian teslovich brk 3h_13_375scbl.db
Dataset Pathname: pass3
Dataset Creation: Sun Nov 07 04:20:27 2021 by Log 7.0 B1

Gamma Ray Calibration Report

Serial Number:	27GRL20-XXXX	
Tool Model:	27GRL20	
Performed:	Sun Jun 13 15:33:21 1993	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	1.0000	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	45SBT20-005_13_375	
Tool Model:	Tek16_Ex_Temp	
Calibration Casing Diameter:	13.375	in
Calibration Depth:	0.742	ft

Master Calibration, performed Sun Nov 07 04:16:28 2021:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.006	1.895	1.000	41.300	21.337	0.876
CAL	0.003	1.000				
5'	0.003	2.268	1.000	41.300	17.788	0.949
SUM						
S1	0.013	1.835	0.000	100.000	54.866	-0.702
S2	0.012	1.935	0.000	100.000	51.980	-0.603
S3	0.014	1.865	0.000	100.000	54.019	-0.768
S4	0.015	1.956	0.000	100.000	51.516	-0.786

S5	0.014	1.855	0.000	100.000	54.315	-0.738
S6	0.015	1.864	0.000	100.000	54.093	-0.821
S7	0.015	1.858	0.000	100.000	54.262	-0.836
S8	0.016	1.968	0.000	100.000	51.207	-0.799
S9	0.017	1.965	0.000	100.000	51.332	-0.889
S10	0.013	1.968	0.000	100.000	51.148	-0.682
S11	0.014	1.965	0.000	100.000	51.252	-0.734
S12	0.011	1.865	0.000	100.000	53.911	-0.567
S13	0.013	1.897	0.000	100.000	53.078	-0.680
S14	0.011	1.869	0.000	100.000	53.847	-0.615
S15	0.015	1.869	0.000	100.000	53.949	-0.805
S16	0.016	1.858	0.000	100.000	54.285	-0.885

Internal Reference Calibration, performed Sun Sep 23 05:07:57 2018:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.003	1.000	1.000	0.000

Air Zero Calibration, performed Sun Nov 07 04:16:09 2021:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1	0.000	0.000	0.000
S2	0.000	0.000	0.000
S3	0.000	0.000	0.000
S4	0.000	0.000	0.000
S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000
S9	0.000	0.000	0.000
S10	0.000	0.000	0.000
S11	0.000	0.000	0.000
S12	0.000	0.000	0.000
S13	0.000	0.000	0.000
S14	0.000	0.000	0.000

Temperature Calibration Report

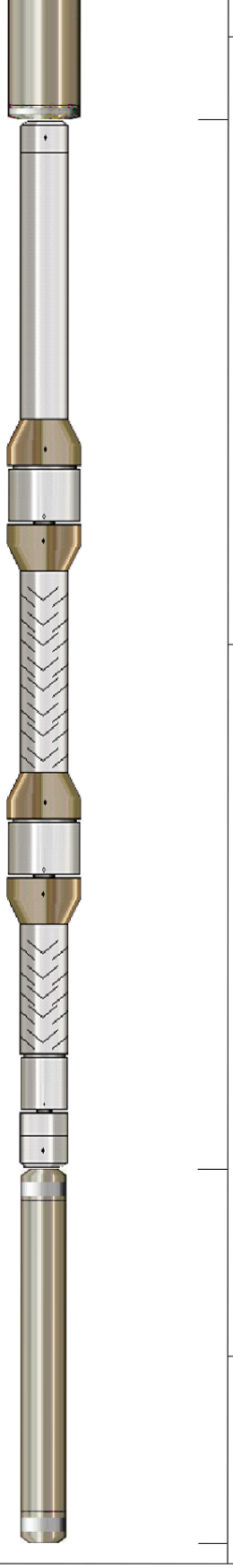
Serial Number: 45SBT20-005_13_375
Tool Model: Tek16_Ex_Temp
Performed: Sun Sep 23 04:54:34 2018

	Reference		Reading	
Low Reference:	0.00	degF	0.00	usec
High Reference:	1.00	degF	1.00	usec

Gain: 0.33
Offset: 0.00
Delta Spacing 2

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
			Cablehead 1 7/16" Standard Cable Head	1.00	1.43	5.00

CCL	14.68	CCL-45CCL60 (45CCL60-XXXX) 4 1/2" Titan Logging CCL	1.63	4.50	80.00
TEMP	11.00				
WVF3FT	8.93	SCBL-Tek16_Ex_Temp (45SBT20-005_13_10.29 TEKCO 4.5" 400 Deg F 16 Sector RIB w Ext. Temp		4.50	234.00
WVFCAL	8.93				
WVFS1	8.93				
WVFS2	8.93				
WVFS3	8.93				
WVFS4	8.93				
WVFS5	8.93				
WVFS6	8.93				
WVFS7	8.93				
WVFS8	8.93				
WVFS9	8.93				
WVFS10	8.93				
WVFS11	8.93				
WVFS12	8.93				
WVFS13	8.93				
WVFS14	8.93				
WVFS15	8.93				
WVFS16	8.93				
WVF5FT	7.43				
WVFTEMP	3.67				
WVFSYNC	3.67				
		GR-27GRL20 (27GRL20-XXXX) 2-3/4" Gamma Ray	3.67	2.75	30.00
GR	1.08				



Dataset:	swn_brian teslovich brk 3h_13_375scbl.db: field/well/run1/pass3.3
Total Length:	16.58 ft
Total Weight:	349.00 lb
O.D.	4.50 in

PALACHI

Company	Southwestern Energy
Well	Brian Teslovich
Field	Panhandle

County	Brooke
State	WV

Nine

Radial Cement Bond
Variable Density Log
W/Gamma/CCL/Temp

Company Southwestern Energy
Well Brian Teslovich BRK 1H
Field Marcellus
County Brooke State WV
Location: API # : 47-006-00325-00-00

Company	Southwestern Energy
Well	Brian Teslovich BRK 1H
Field	Marcellus
County	Brooke
State	WV

Location:	SEC	TWP	RGE	API # : 47-006-00325-00-00
Permanent Datum		Ground Level	Elevation	
Log Measured From		KB		
Drilling Measured From				

Other Services

Elevation
K.B.
D.F.
G.L.

Date	10/17/2021
Run Number	One
Depth Driller	N/A
Depth Logger	220'
Bottom Logged Interval	220'
Top Log Interval	Surface
Open Hole Size	N/A
Type Fluid	Water
Density / Viscosity	N/A
Max. Recorded Temp.	82.6
Estimated Cement Top	N/A
Time Well Ready	
Time Logger on Bottom	
Equipment Number	Unit #116
Location	Charleroi, PA
Recorded By	Calvin Drummond
Witnessed By	Chris Johnson

Borehole Record

Run Number	Bit	From	To

Tubing Record

Size	Weight	From	To

Casing Record

	Size	Wgt/Ft	Top	Bottom
Surface String				
Prot. String				
Production String	4.50"	10.5 LBS	Surface	N/A
Liner				

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Log Zeroed at KB 26'

Thank You For Using Nine Energy Service

Nine

Cement Log 13.375"

Database File	swn_brian_teslovich_1h_rcbl_17_nov_2021.db
Dataset Pathname	pass7
Presentation Format	probe 16 sector
Dataset Creation	Wed Nov 17 18:20:11 2021
Charted by	Depth in Feet scaled 1:240

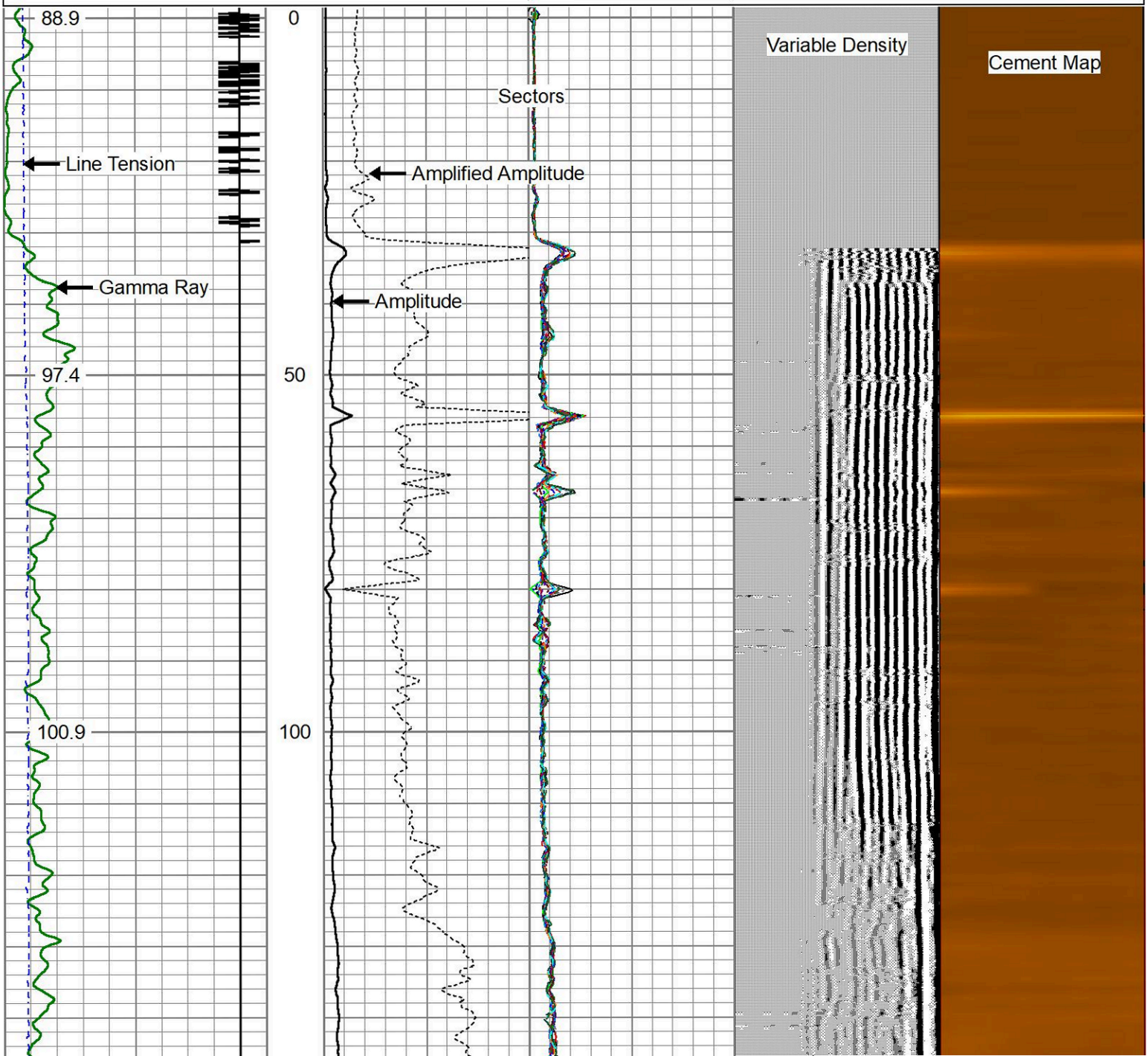
390	Travel Time (usec)	290
36	CCL$1	-4
0	Gamma Ray (GAPI)	150
0	Line Tension (lb)	5000
	Temp (degF)	

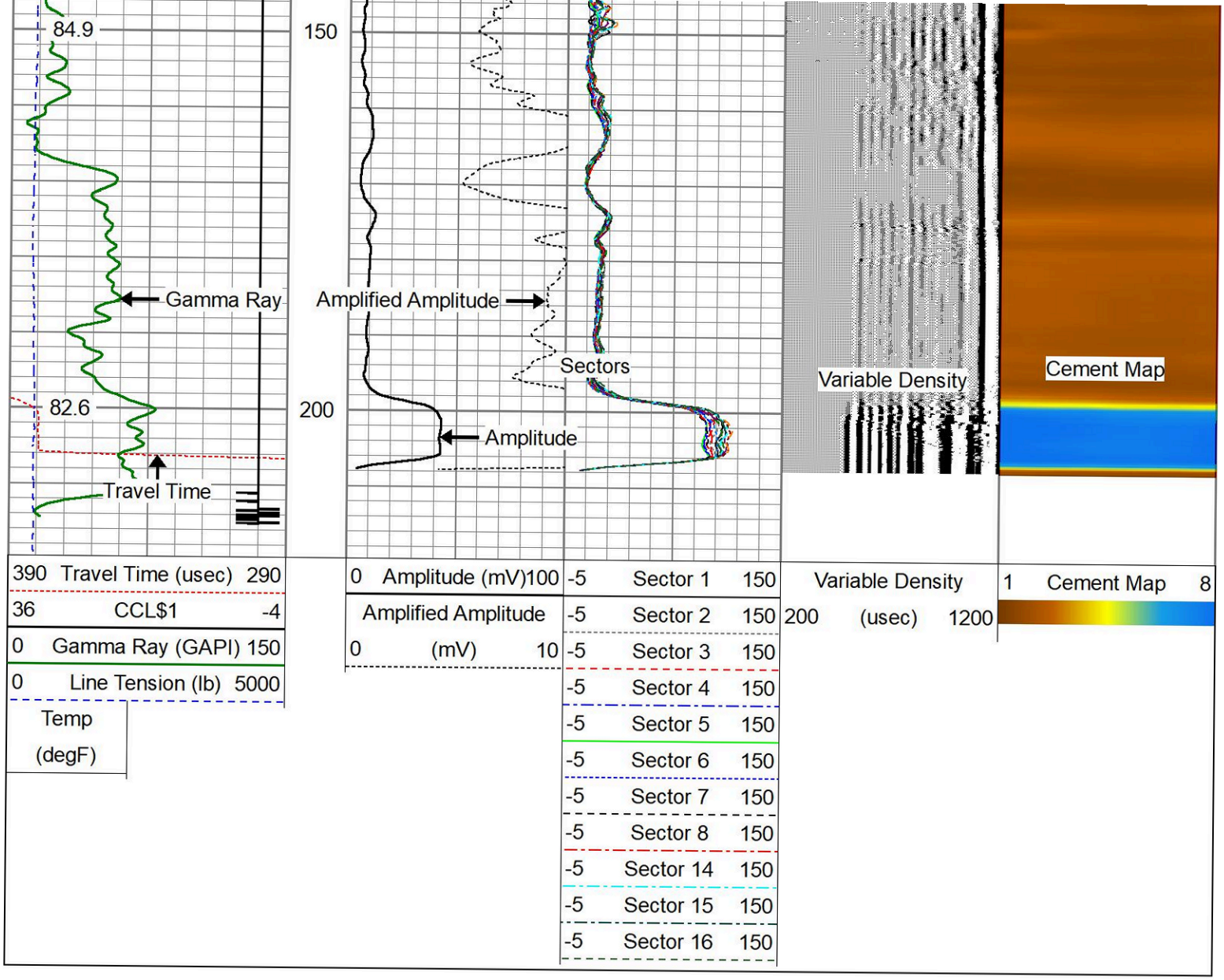
0	Amplitude (mV)	100
	Amplified Amplitude	
0	(mV)	10

-5	Sector 1	150
-5	Sector 2	150
-5	Sector 3	150
-5	Sector 4	150
-5	Sector 5	150
-5	Sector 6	150
-5	Sector 7	150
-5	Sector 8	150
-5	Sector 14	150
-5	Sector 15	150
-5	Sector 16	150

	Variable Density	
200	(usec)	1200

1	Cement Map	8





Calibration Report

Database File	swn_brian_teslovich_1h_rcbl_17_nov_2021.db
Dataset Pathname	pass7
Dataset Creation	Wed Nov 17 18:20:11 2021

Gamma Ray Calibration Report

Serial Number:	test	
Tool Model:	GCT275-0000	
Performed:	Wed Sep 01 11:10:48 2021	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.7000	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	test	
Tool Model:	RADII-351A	
Calibration Casing Diameter:	13.375	in
Calibration Depth:	219.508	ft

Master Calibration, performed Wed Nov 17 18:20:06 2021:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.008	0.537	2.000	42.031	73.421	2.617
CAL	1.003	0.976	2.000	42.031	-1479.299	1485.486
5'	-0.014	0.582	2.000	42.031	67.174	2.939
S1	-0.011	0.393	0.000	100.000	247.582	2.678
S2	-0.013	0.442	0.000	100.000	219.784	2.785
S3	-0.010	0.510	0.000	100.000	192.057	2.014
S4	-0.011	0.584	0.000	100.000	168.151	1.784
S5	-0.009	0.680	0.000	100.000	145.086	1.298
S6	-0.012	0.745	0.000	100.000	132.191	1.543
S7	-0.008	0.779	0.000	100.000	127.120	1.007
S8	-0.013	0.768	0.000	100.000	128.122	1.612
S9	-0.007	0.710	0.000	100.000	139.374	1.034
S10	-0.012	0.623	0.000	100.000	157.554	1.825
S11	-0.009	0.542	0.000	100.000	181.488	1.560
S12	-0.012	0.467	0.000	100.000	208.681	2.596
S13	-0.009	0.413	0.000	100.000	236.606	2.244
S14	-0.011	0.388	0.000	100.000	250.405	2.751
S15	-0.010	0.379	0.000	100.000	256.722	2.589
S16	-0.012	0.381	0.000	100.000	254.442	3.143

Wellsite Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	1.003	0.976	1.000	0.000

Air Zero Calibration, performed Wed Nov 17 10:43:42 2021:

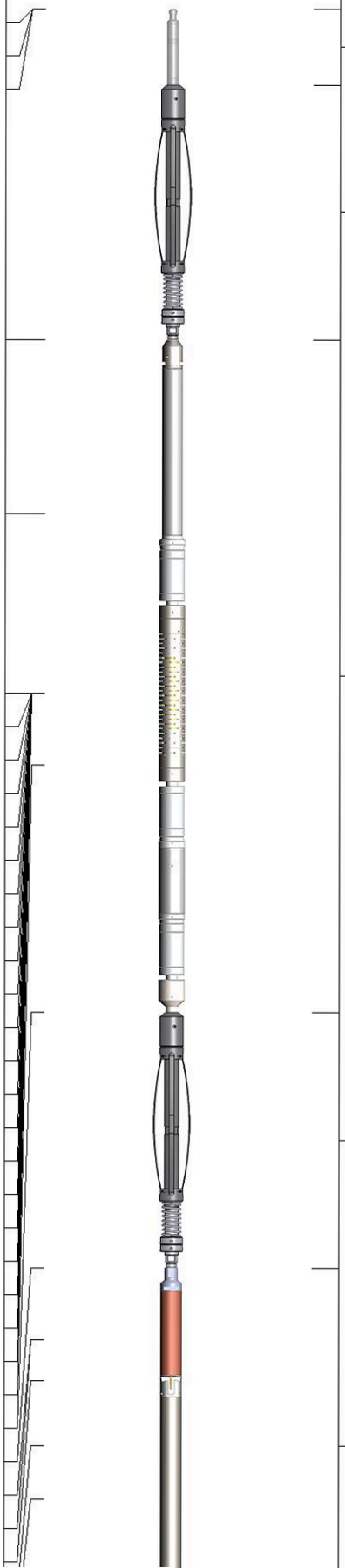
	Raw (v)	Calibrated (mv)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
S1	0.000	0.000	0.000
S2	0.000	0.000	0.000
S3	0.000	0.000	0.000
S4	0.000	0.000	0.000
S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000
S9	0.000	0.000	0.000
S10	0.000	0.000	0.000
S11	0.000	0.000	0.000
S12	0.000	0.000	0.000
S13	0.000	0.000	0.000

Inclinometer Calibration Report

Performed: Thu Jun 11 13:06:14 2020

	Low Read.	High Read.	Low Ref.	High Ref.	
X Accelerometer	-901.00	927.00	-1.00	1.00	gee

Y Accelerometer	-949.00	917.00	-1.00	1.00	gee
Z Accelerometer	-3.12	882.95	0.00	1.00	gee

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
mSec_Count	21.94		Cable_Head-1_7/16 Titan 1 7/16" Cable Head	1.02	1.44	3.31
RBT_Status	21.94					
Error_Ct	21.94					
			Centralizers-5419-312-S600 Titan 3 1/8" Adjustable Centralizer	3.42	3.13	34.00
RBT_HV	17.50					
RBT_IntTemp	15.19					
RBT_ACCZ	12.78		RBT16-RADII-351A (test) Probe RADII 351-A	8.98	3.50	150.00
RBT_ACCY	12.78					
RBT_ACCX	12.78					
WVFS16	12.78					
WVFS15	12.78					
WVFS14	12.78					
WVFS13	12.78					
WVFS12	12.78					
WVFS11	12.78					
WVFS10	12.78					
WVFS9	12.78					
WVFS8	12.78					
WVFS7	12.78					
WVFS6	12.78		Centralizers-5419-312-S600 Titan 3 1/8" Adjustable Centralizer	3.42	3.13	34.00
WVFS5	12.78					
WVFS4	12.78					
WVFS3	12.78					
WVFS2	12.78					
WVFS1	12.78					
WVFCAL	12.78					
WVF3FT	12.78					
WVF5FT	11.82					
WVFSYNC	8.52					
GCT_HV	5.10		GC-GCT275-0000 (test) Probe 2.75" Gamma Ray - CCL w/ Temp	4.77	2.75	55.00
CCL$2	4.14					
CCL$1	4.14					
GCT_Temp	3.59					

GR	2.72		Plug-FA108-0000 1.38" Bull Plug	0.33	1.38	1.00
GCT_IntTemp	2.00					

Dataset: swn_brian_teslovich_1h_rcbl_17_nov_2021.db: field/well/run1/pass7
Total length: 21.94 ft
Total weight: 277.31 lb
O.D.: 3.50 in

Nine

Company	Southwestern Energy
Well	Brian Teslovich BRK 1H
Field	Kenndy Storage
County	Brooke
State	WV

Columbia Gas Transmission, LLC
700 Louisiana Street, Suite 1300
Houston, TX 77002-2761
e-mail: us_land@tcenergy.com

December 17, 2021

Ralph & Joann Lewis
7582 Saltlick Rd.
Terra Alta, WV 26764

RE: Landowner 45-Day Prior Notification
Project Name: CPG Data Gathering & Troubleshooting Well - WV
Tract No.: 6-43-6
Preston County, West Virginia

Dear Landowner:

Please be advised that Columbia Gas Transmission, LLC ("Columbia Gas") plans to temporarily take Terra Alta 7417 storage well out of service for investigative work on or near your property in Preston County, West Virginia. Columbia Gas plans to perform these activities in accordance with the Certificate of Public Convenience and Necessity granted by the Federal Energy Regulatory Commission ("FERC" or "Commission") to Columbia Gas in FERC Docket No. CP83-76-000 and pursuant to the Commission's regulations as codified in the Code of Federal Regulations, Title 18, Section 157, Subpart F. Columbia Gas is a wholly owned indirect subsidiary of TransCanada Pipeline USA Ltd. Its principal office is located at 700 Louisiana Street, Suite 1300, Houston, Texas 77002-2700.

Columbia Gas Columbia proposes to temporarily take Terra Alta 7417 storage well out of service for investigative work on annular pressure issues at milepost X76W7417 in Preston County, West Virginia. In addition, they will repair MI logging truck, log well, and set bridge plug. This project may involve earth disturbance, the presence of workers and equipment, temporary noise and dust, the replacement and/or installation of above and/or below ground facilities, new or modified access road(s) and grading and excavation. It may be necessary to utilize temporary workspace adjacent to the pipeline within the permanent right-of-way and easement for such activities.

Columbia Gas anticipates the project will take place between December 2021 and January 2022. However, the project could take longer depending on external factors such as weather, and the scheduling of personnel and equipment. After the construction activities are completed, site restoration activities will commence.

Unless modified by appropriate regulatory agencies, Columbia Gas plans to follow FERC's current *"Upland Erosion Control, Revegetation, and Maintenance Plan"* during construction and restoration activities and, in areas where streams or wetlands are encountered, Columbia Gas plans to follow FERC's current *"Wetland and Waterbody Construction and Mitigation Procedures."*

Landowner 45-Day Prior Notification
Project Name: CPG Data Gathering & Troubleshooting Well - WV
Landowner Name: Ralph & Joann Lewis
Preston County, West Virginia

Addressing concerns during construction:
Columbia Gas is committed to providing landowners with clear and simple directions to address any concerns you may have prior to or during our construction and/or restoration activities on your property. Should you have any questions or concerns, Columbia Gas suggests the following:
Call the Land Representative, **Lorrie Steadman at phone number 301-729-5624**; or

- Call our toll-free number at **1-877-287-1782, or email:** us_land@tcenergy.com.
- If you call after business hours, please leave a detailed message and your call will be returned as soon as practicable.
- Please be prepared to identify the project description and location.
- You should expect to receive a response within 48 hours.
- If you fail to receive a response within 48 hours; or, if you are not satisfied with the responses you received, you may call our toll-free hotline number and ask to speak to the manager of US Land Services East, Ms. Karen Franks.
- If you remain unsatisfied with our initial and follow-up responses, you may contact FERC Landowner Helpline at 1-877-337-2237 or by e-mail at *landownerhelp@ferc.gov* or writing to: Commission's Landowner Helpline, Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426.

For your information, we have enclosed copies of FERC's Enforcement Hotline procedures and a FERC brochure that may answer some of your questions regarding natural gas pipelines. The brochure addresses rights of landowners impacted by natural gas pipeline facilities, how FERC conducts its activities, siting of pipeline facilities and safety and environmental issues.

Columbia Gas strives to be a good neighbor as it provides a safe, clean, and reliable source of energy to many of the nation's consumers and industries. If you have any questions, we encourage you to call us. However, in the event you wish to direct your questions or comments to the Commission, you may do so by using the Commission's "FERC Landowner Helpline" number or email address listed above.

We have sent this letter to you as FERC regulations require that we provide 45 days advance notice of our project, so that you can read the materials sent and have time to address any questions or concerns. The Commission's regulations provide that a landowner may waive the 45-day waiting period associated with the landowner notification process. Below is a request asking you to waive the 45-day notice period, which will allow us to proceed with the construction before the 45-day period has expired. We are requesting this waiver to allow for logistical construction issues such as weather and availability of equipment, and personnel. The waiver does not constitute a waiver of any of your rights other than the 45-day waiting period. Your signing of the waiver is very much appreciated.

Should you decide to sign the waiver, please return it in the enclosed, stamped, return envelope or scan a copy and send via e-mail to us_land@tcenergy.com.

Sincerely,

Columbia Gas Transmission, LLC

Karen Franks

Karen Franks, PMP
Manager, US Land Services East

Landowner 45-Day Prior Notification
Project Name: CPG Data Gathering & Troubleshooting Well - WV
Landowner Name: Ralph & Joann Lewis
Preston County, West Virginia

45-DAY LANDOWNER NOTIFICATION WAIVER:

I acknowledge that I have read this letter, and I agree to waive the 45 days advance landowner notification requirement prior to construction.

LANDOWNER (please print and sign your name):

_____ _____

Print Name Date

_____

Signature

Following completion of construction and/or maintenance activities, our Land Representative will follow up with you by phone or email. Please indicate your preferred contact number and email address:

Phone: _____

E-Mail: _____

Federal Energy Regulatory Commission

Report market abuse concerns:

Enforcement Hotline

Enforcement Hotline
Telephone: 202-502-8390
Toll-free: 1-888-889-8030
FAX: 202-208-0057
E-mail: hotline@ferc.gov

US Mail:

888 First St. NE - 5th Floor
Washington, DC 20426

Concerned About Potential Violations?

Individuals with knowledge of potential violations are an important source of information for the FERC enforcement program. The Enforcement Hotline invites market participants and the general public to call, email or write the Hotline to report market activities or transactions that may be market manipulation, fraud, an abuse of an affiliate relationship, a tariff violation, a violation of a Commission order, or other possible violation. Enforcement staff can receive information anonymously and protects the confidentiality of whistleblowers to the fullest extent possible. All information and documents obtained through the Hotline are non-public, consistent with 18 C.F.R. § 1b.9 of the Commission's regulations.

Past Hotline calls have included complaints about:

- Market Manipulation;
- Fraud;
- Bidding anomalies;
- Inappropriate use of financial instruments;
- Fluctuations in available capacity on electric transmission lines and natural gas pipelines;
- Interconnection discrimination;
- Possible Tariff violations; and
- Undue preferences to affiliates.

If you want to contact the Hotline with information about a potential violation, please email Hotline@ferc.gov or call toll free 1-888-889-8030.
Please Do Not Contact the Enforcement Hotline for Compliance Not Related to Potential Violations, Landowner Issues, or NARUC Related Issues. The Enforcement Hotline is only for enforcement related violations. To receive assistance in other areas, contact the appropriate offices listed below.

Who to Contact With Compliance-Related Questions?
To receive assistance regarding compliance with Commission regulations and other inquiries not related to potential violations, please contact the Commission's Compliance Help Desk. More information about the Compliance Help Desk may be found.

Who to Contact If You are a Landowner Concerned About FERC Jurisdictional Projects?
To receive assistance with disputes involving the construction and operation of FERC jurisdictional projects, landowners should contact the Commission's Landowner Helpline Toll Free at 1-877-337-2237 or by Email at LandownerHelp@ferc.gov.

Concerned About Local Natural Gas or Electricity Service?
Problems involving natural gas or electric service or billing for retail customers are not within the Commission's jurisdiction. Such problems should be directed to your state commission or, if relevant, local regulatory agency. Websites for each state commission can be found through the National Association of Regulatory Utility Commissioners (NARUC).

Concerned About Pipeline Safety?
If you have a question regarding safety of an interstate natural gas pipeline, you should contact the Department of Transportation's Office of Pipeline Safety.

Concerned About Hydroelectric License and Exemption Compliance?
Complaints or reports regarding non-compliance with hydroelectric licenses may be directed to the Commission's Office of Energy Projects at 844-434-0053. The Hotline number is staffed Monday-Friday from 8:00 am to 4:30 pm ET excluding Federal holidays. Callers may leave a message and the call will be returned during the next business day.

The Enforcement Hotline cannot assist in matters relating to docketed or contested Commission proceedings. Communications through the Enforcement Hotline to advisory staff would violate the Commission's rule at 18 C.F.R.§ 385.2201 prohibiting off-the-record communications. Communications related to a pending contested proceeding are not confidential and must be identified in the Federal Register and placed in a public file associated with the docket.

Last updated on January 05, 2021

TC Energy

Columbia Gas Transmission, LLC
700 Louisiana Street, Suite 1300
Houston, TX 77002-2761
e-mail: us_land@tcenergy.com

December 28, 2021

Via FedEx
Ralph & Joann Lewis
7582 Saltlick Rd.
Terra Alta, WV 26764

RE: Landowner 45-Day Prior Notification
Project Name: CPG Data Gathering & Troubleshooting well - WV
Tract No.: 6-43-6
Preston County, WV

Dear Landowner:

Please be advised that Columbia Gas Transmission, LLC ("Columbia Gas") proposes to temporarily take Terra Alta 7417 storage well out of service for investigating work and needed repairs, at milepost X76W7417, located on or near your property in Preston County, WV. Columbia Gas plans to perform these activities in accordance with the Certificate of Public Convenience and Necessity granted by the Federal Energy Regulatory Commission ("FERC" or "Commission") to Columbia Gas in FERC Docket No. CP83-76-000 and pursuant to the Commission's regulations as codified in the Code of Federal Regulations, Title 18, Section 157, Subpart F. Columbia Gas is a wholly owned indirect subsidiary of TransCanada Pipeline USA Ltd. Its principal office is located at 700 Louisiana Street, Suite 1300, Houston, Texas 77002-2700.

The project may require additional temporary workspace outside of the authorized construction workspace of the existing facilities, and new or modified access road(s). This project may involve some or all of the following activities: earth disturbance, the presence of workers and equipment, temporary noise and dust, the replacement, removal and/or installation of above and/or below ground facilities, grading and excavation.

Columbia Gas anticipates the project will take place between December 2021 and January 2022. However, the project could take longer depending on external factors such as weather, and the scheduling of personnel and equipment. After the construction activities are completed, site restoration activities will commence.

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Columbia Gas Transmission, LLC

Karen Franks

Karen Franks, PMP
Manager, US Land Services East

Federal Energy Regulatory Commission

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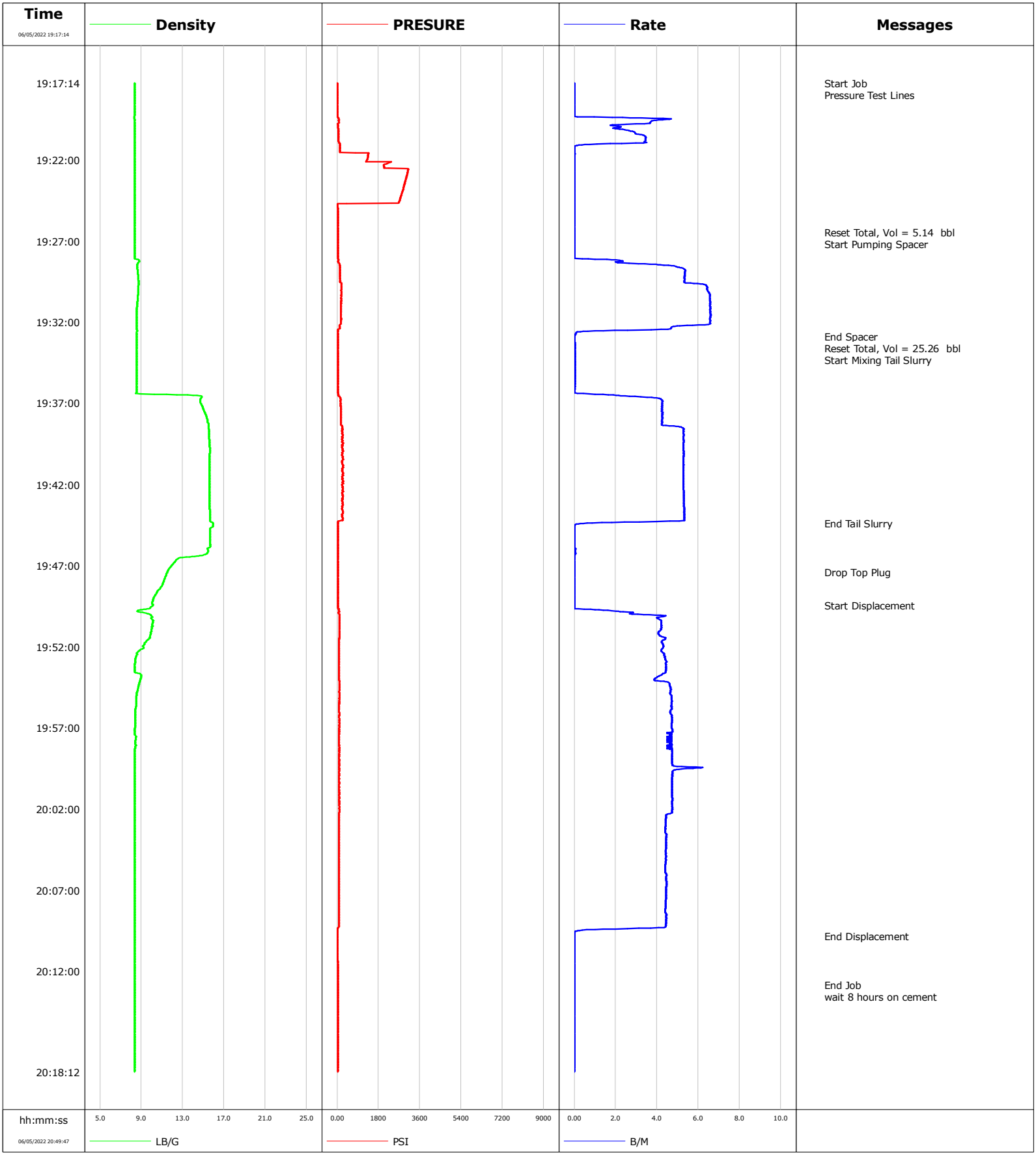
Last updated on January 05, 2021

Schlumberger

Cementing Job Report

Well	TIMMOTHY MINCH OHI 10	**Client**	SWN PRODUCTION COMPANY
Field	UNDESIGNATED	**SIR No.**	EOHC-01077
Engineer	BRIAN FOOTE	**Job Type**	Stage 1
Country	United States	**Job Date**	06-05-2022



Schlumberger Cementing Service Report

Customer	Job Number
SWN PRODUCTION COMPANY	EOHC-01077

Well	Location (legal)	Schlumberger Location	Job Start
TIMMOTHY MINCH OHI 10 10	WHEELING,WV	STRASBURG	Jun/05/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
UNDESIGNATED	Clean-Sandstone	1 deg	17.5 in	555.0 ft	555.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
OHIO	West Virginia	psi	65 degF	80 degF	lb/gal

Well Mast	API/UWI
47-069-00336-00-00	47-069-00336-00-00

Rig Name	Drilled For	Service Via
SDC 40	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
AIR	lb/gal	cP

Service Line	Job Type
Cementing	Stage 1

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Service Instructions

CEMENT 530' 13 3/8 CASING WITH
25 BBLS GEL
39 BBLS TAIL 15.6 PPG
DROP PLUG
DISPLACE 71

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
530.0	13.4	54.5	J55	BUTT
0.0	0.0	0.0		

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	71.8 bbl	Seal Bore	ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	81.4 bbl	19.9 bbl	51.9 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement	Lift Pressure	Pipe Rotated	Pipe Reciprocated	No. Centralizers	Top Plugs	Bottom Plugs	Cement Head Type
☐	☐	80 psi	☐	☐	6	1		Single

Casing Tools

Shoe Type	Float
Shoe Depth	530.0 ft
Stage Tool Type	DV
Stage Tool Depth	395.0 ft
Collar Type	Float
Collar Depth	465.0 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Job Scheduled For	Arrived on Location	Leave Location
Jun/05/2022	Jun/05/2022	Jun/05/2022

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/05/2022	19:17:14	13	0.0	0.0	8.34	Started Acquisition
06/05/2022	19:17:16	13	0.0	0.0	8.34	Pressure Test Lines
06/05/2022	19:17:39	13	0.0	0.0	8.34	
06/05/2022	19:18:04	14	0.0	0.0	8.34	
06/05/2022	19:18:29	12	0.0	0.0	8.34	
06/05/2022	19:18:54	13	0.0	0.0	8.34	
06/05/2022	19:19:19	14	0.0	0.0	8.33	
06/05/2022	19:19:44	66	3.7	1.4	8.34	
06/05/2022	19:20:09	49	2.5	2.4	8.35	
06/05/2022	19:20:34	61	3.4	3.6	8.35	
06/05/2022	19:20:59	115	2.3	5.0	8.35	
06/05/2022	19:21:24	109	0.0	5.1	8.35	
06/05/2022	19:22:14	2146	0.0	5.1	8.35	
06/05/2022	19:22:39	3084	0.0	5.1	8.35	
06/05/2022	19:23:04	3013	0.0	5.1	8.35	
06/05/2022	19:23:29	2930	0.0	5.1	8.35	
06/05/2022	19:23:54	2858	0.0	5.1	8.35	
06/05/2022	19:24:19	2760	0.0	5.1	8.35	
06/05/2022	19:24:44	20	0.0	5.1	8.35	
06/05/2022	19:25:09	28	0.0	5.1	8.35	
06/05/2022	19:25:34	28	0.0	5.1	8.35	

Well	Field	Job Start	Customer	Job Number
TIMMOTHY MINCH OHI 10 10	UNDESIGNATED	Jun/05/2022	SWN PRODUCTION COMPANY	EOHC-01077

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/05/2022	19:26:24	27	0.0	5.1	8.35	
06/05/2022	19:26:28	27	0.0	5.1	8.35	Reset Total, Vol = 5.14 bbl
06/05/2022	19:26:31	27	0.0	0.0	8.35	Start Pumping Spacer
06/05/2022	19:26:49	27	0.0	0.0	8.35	
06/05/2022	19:27:14	28	0.0	0.0	8.35	
06/05/2022	19:27:39	28	0.0	0.0	8.35	
06/05/2022	19:28:04	37	0.0	0.0	8.34	
06/05/2022	19:28:29	133	4.4	1.0	8.60	
06/05/2022	19:28:54	130	5.4	3.1	8.66	
06/05/2022	19:29:19	128	5.3	5.4	8.69	
06/05/2022	19:29:44	175	6.4	7.7	8.72	
06/05/2022	19:30:09	173	6.5	10.4	8.69	
06/05/2022	19:30:34	173	6.6	13.1	8.64	
06/05/2022	19:30:59	170	6.6	15.9	8.58	
06/05/2022	19:31:24	165	6.6	18.6	8.57	
06/05/2022	19:31:49	177	6.6	21.3	8.56	
06/05/2022	19:32:14	106	5.0	24.0	8.55	
06/05/2022	19:32:39	33	0.1	25.3	8.56	
06/05/2022	19:32:52	33	0.0	25.3	8.56	End Spacer
06/05/2022	19:32:54	34	0.0	25.3	8.56	Reset Total, Vol = 25.26 bbl
06/05/2022	19:33:01	34	0.0	0.0	8.56	Start Mixing Tail Slurry
06/05/2022	19:33:04	34	0.0	0.0	8.56	
06/05/2022	19:33:29	33	0.0	0.0	8.56	
06/05/2022	19:33:54	32	0.0	0.0	8.56	
06/05/2022	19:34:19	32	0.0	0.0	8.55	
06/05/2022	19:34:44	32	0.0	0.0	8.55	
06/05/2022	19:35:09	30	0.0	0.1	8.55	
06/05/2022	19:35:34	31	0.0	0.1	8.55	
06/05/2022	19:35:59	31	0.0	0.1	8.55	
06/05/2022	19:36:24	37	0.4	0.1	8.48	
06/05/2022	19:36:49	152	4.3	1.4	14.69	
06/05/2022	19:37:14	154	4.2	3.1	14.92	
06/05/2022	19:37:39	166	4.3	4.9	15.19	
06/05/2022	19:38:04	169	4.2	6.7	15.41	
06/05/2022	19:38:29	224	5.2	8.5	15.50	
06/05/2022	19:38:54	227	5.3	10.7	15.54	
06/05/2022	19:39:19	255	5.3	12.9	15.59	
06/05/2022	19:39:44	223	5.3	15.1	15.63	
06/05/2022	19:40:09	208	5.3	17.3	15.61	
06/05/2022	19:40:34	212	5.3	19.5	15.61	
06/05/2022	19:40:59	243	5.3	21.7	15.60	
06/05/2022	19:41:24	251	5.3	23.9	15.61	
06/05/2022	19:41:49	269	5.3	26.1	15.61	
06/05/2022	19:42:14	251	5.3	28.3	15.59	
06/05/2022	19:42:39	257	5.3	30.5	15.59	
06/05/2022	19:43:04	238	5.3	32.7	15.59	
06/05/2022	19:43:29	214	5.3	35.0	15.61	
06/05/2022	19:43:54	213	5.3	37.2	15.63	
06/05/2022	19:44:19	39	2.4	39.3	15.84	
06/05/2022	19:44:24	39	0.4	39.4	15.94	End Tail Slurry
06/05/2022	19:44:44	39	0.0	39.4	15.64	
06/05/2022	19:45:09	39	0.0	39.4	15.64	
06/05/2022	19:45:34	37	0.0	39.4	15.65	
06/05/2022	19:45:59	37	0.1	39.4	15.41	

Well	Field	Job Start	Customer	Job Number
TIMMOTHY MINCH OHI 10 10	UNDESIGNATED	Jun/05/2022	SWN PRODUCTION COMPANY	EOHC-01077

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/05/2022	19:46:49	37	0.0	39.4	12.19	
06/05/2022	19:47:14	37	0.0	39.4	11.65	
06/05/2022	19:47:25	37	0.0	39.4	11.51	Drop Top Plug
06/05/2022	19:47:39	37	0.0	39.4	11.36	
06/05/2022	19:48:04	35	0.0	39.4	11.11	
06/05/2022	19:48:29	35	0.0	39.4	10.71	
06/05/2022	19:48:54	37	0.0	39.4	10.28	
06/05/2022	19:49:19	36	0.0	39.4	10.03	
06/05/2022	19:49:26	39	0.0	39.4	10.15	Start Displacement
06/05/2022	19:49:44	83	1.2	39.5	8.93	
06/05/2022	19:50:09	88	4.2	40.7	10.06	
06/05/2022	19:50:34	93	4.2	42.4	10.06	
06/05/2022	19:50:59	91	4.2	44.2	9.98	
06/05/2022	19:51:24	90	4.3	45.9	9.82	
06/05/2022	19:51:49	84	4.3	47.7	9.31	
06/05/2022	19:52:14	80	4.2	49.5	8.81	
06/05/2022	19:52:39	78	4.4	51.3	8.47	
06/05/2022	19:53:04	77	4.4	53.1	8.38	
06/05/2022	19:53:29	75	4.4	55.0	8.37	
06/05/2022	19:53:54	69	4.0	56.8	8.96	
06/05/2022	19:54:19	90	4.6	58.5	8.77	
06/05/2022	19:54:44	88	4.7	60.4	8.62	
06/05/2022	19:55:09	86	4.7	62.4	8.51	
06/05/2022	19:55:34	84	4.7	64.4	8.48	
06/05/2022	19:55:59	84	4.6	66.3	8.39	
06/05/2022	19:56:49	85	4.7	70.2	8.38	
06/05/2022	19:57:14	90	4.8	72.2	8.34	
06/05/2022	19:57:39	84	4.7	74.1	8.45	
06/05/2022	19:58:04	88	4.5	76.1	8.49	
06/05/2022	19:58:29	85	4.7	78.0	8.35	
06/05/2022	19:58:54	85	4.7	80.0	8.35	
06/05/2022	19:59:19	86	4.7	82.0	8.35	
06/05/2022	19:59:44	84	4.7	84.1	8.35	
06/05/2022	20:00:09	88	4.7	86.1	8.35	
06/05/2022	20:00:34	89	4.7	88.1	8.35	
06/05/2022	20:00:59	88	4.7	90.0	8.35	
06/05/2022	20:01:24	86	4.8	92.0	8.35	
06/05/2022	20:01:49	90	4.7	94.0	8.35	
06/05/2022	20:02:14	82	4.7	96.0	8.35	
06/05/2022	20:02:39	79	4.4	97.8	8.35	
06/05/2022	20:03:04	77	4.4	99.7	8.35	
06/05/2022	20:03:29	80	4.4	101.5	8.35	
06/05/2022	20:03:54	79	4.4	103.4	8.35	
06/05/2022	20:04:19	80	4.4	105.2	8.35	
06/05/2022	20:04:44	78	4.4	107.1	8.35	
06/05/2022	20:05:09	78	4.4	108.9	8.35	
06/05/2022	20:05:34	78	4.4	110.7	8.35	
06/05/2022	20:05:59	81	4.4	112.6	8.35	
06/05/2022	20:06:24	81	4.4	114.4	8.35	
06/05/2022	20:06:49	80	4.4	116.3	8.35	
06/05/2022	20:07:14	79	4.4	118.1	8.35	
06/05/2022	20:07:39	80	4.4	120.0	8.35	
06/05/2022	20:08:04	79	4.4	121.8	8.35	
06/05/2022	20:08:29	81	4.5	123.7	8.35	

Well	Field	Job Start	Customer	Job Number
TIMMOTHY MINCH OHI 10 10	UNDESIGNATED	Jun/05/2022	SWN PRODUCTION COMPANY	EOHC-01077

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/05/2022	20:09:19	39	4.1	127.4	8.35	
06/05/2022	20:09:44	17	0.0	127.7	8.35	
06/05/2022	20:09:50	17	0.0	127.7	8.35	End Displacement
06/05/2022	20:10:09	17	0.0	127.7	8.35	
06/05/2022	20:10:34	17	0.0	127.7	8.35	
06/05/2022	20:10:59	17	0.0	127.7	8.35	
06/05/2022	20:11:24	21	0.0	127.7	8.35	
06/05/2022	20:11:49	26	0.0	127.7	8.36	
06/05/2022	20:12:14	29	0.0	127.7	8.36	
06/05/2022	20:12:39	29	0.0	127.7	8.35	
06/05/2022	20:12:50	29	0.0	127.7	8.36	End Job
06/05/2022	20:13:00	29	0.0	127.7	8.36	wait 8 hours on cement
06/05/2022	20:13:04	29	0.0	127.7	8.36	
06/05/2022	20:13:29	30	0.0	127.7	8.36	
06/05/2022	20:13:54	29	0.0	127.7	8.36	
06/05/2022	20:14:19	29	0.0	127.7	8.36	
06/05/2022	20:14:44	29	0.0	127.7	8.36	
06/05/2022	20:15:09	29	0.0	127.7	8.36	
06/05/2022	20:15:34	28	0.0	127.7	8.36	
06/05/2022	20:15:59	27	0.0	127.7	8.36	
06/05/2022	20:16:24	27	0.0	127.7	8.36	
06/05/2022	20:16:49	28	0.0	127.7	8.36	
06/05/2022	20:17:14	28	0.0	127.7	8.36	
06/05/2022	20:17:39	27	0.0	127.7	8.36	
06/05/2022	20:18:04	27	0.0	127.7	8.36	
06/05/2022	20:18:29	27	0.0	127.7	8.36	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
4.1			6.6	39.0	0.0	25.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
270	19	144	0			bbl	15.60 lb/gal

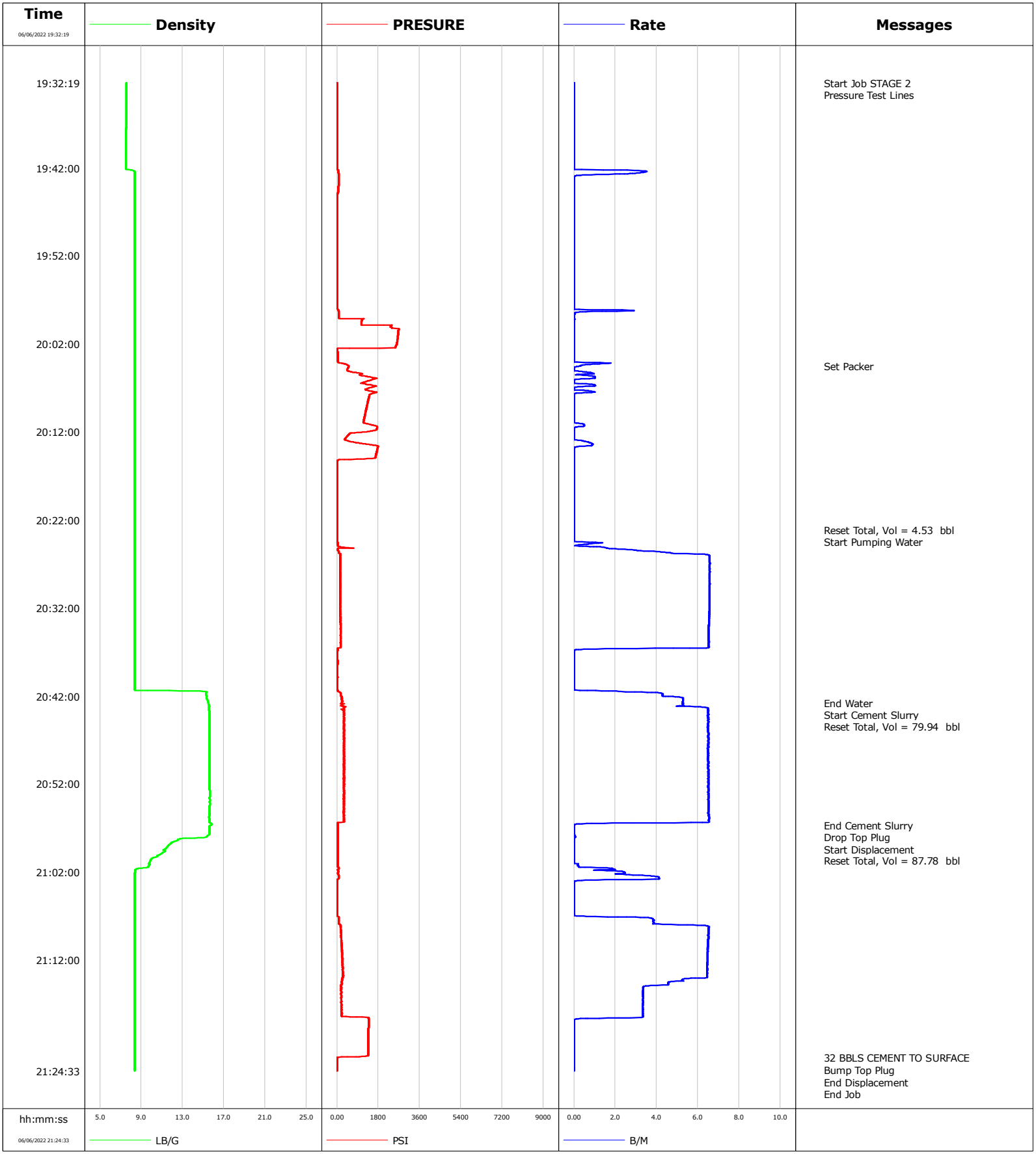
Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
%	39.0 bbl	80.0 bbl	67 degF	Cement Circulated to Surface? ☐	Volume bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
COMPANY MAN	BRIAN FOOTE	☐ -	☐ -

Schlumberger

Cementing Job Report

Well	TIMMOTHY MINCH OHI 10	**Client**	SWN PRODUCTION COMPANY
Field	UNDESIGNATED	**SIR No.**	EOHC-01077
Engineer	BRIAN FOOTE	**Job Type**	STAGE 2
Country	United States	**Job Date**	06-05-2022



Schlumberger Cementing Service Report

Customer	Job Number
SWN PRODUCTION COMPANY	EOHC-01077

Well	Location (legal)	Schlumberger Location	Job Start
TIMMOTHY MINCH OHI 10 10	WHEELING,WV	STRASBURG	Jun/05/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
UNDESIGNATED	Clean-Sandstone	1 deg	17.5 in	555.0 ft	555.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
OHIO	West Virginia	psi	65 degF	80 degF	lb/gal

Well Mast	API/UWI
47-069-00336-00-00	47-069-00336-00-00

Rig Name	Drilled For	Service Via
SDC 40	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
AIR	lb/gal	cP

Service Line	Job Type
Cementing	STAGE 2

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Service Instructions

CEMENT 530' 13 3/8 CASING WITH
94 BBLS TAIL 15.6 PPG
DROP PLUG
DISPLACE 61
32 BBLS CEM TO SURFACE

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
530.0	13.4	54.5	J55	BUTT
0.0	0.0	0.0		

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	61.0 bbl	Seal Bore	ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	81.4 bbl	19.9 bbl	51.9 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
X	X

Lift Pressure	Pipe Rotated	Pipe Reciprocated
213 psi	☐	☐

No. Centralizers	Top Plugs	Bottom Plugs
6	1	

Cement Head Type	Job Scheduled For	Arrived on Location	Leave Location
Single	Jun/05/2022	Jun/05/2022	Jun/05/2022

Casing Tools

Shoe Type	Float
Shoe Depth	530.0 ft
Stage Tool Type	DV
Stage Tool Depth	395.0 ft
Collar Type	Float
Collar Depth	465.0 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/06/2022	19:32:19	7	0.0	0.0	7.54	Started Acquisition
06/06/2022	19:32:20	7	0.0	0.0	7.54	Start Job STAGE 2
06/06/2022	19:32:28	7	0.0	0.0	7.54	Pressure Test Lines
06/06/2022	19:33:04	7	0.0	0.0	7.54	
06/06/2022	19:33:49	7	0.0	0.0	7.54	
06/06/2022	19:34:34	7	0.0	0.0	7.54	
06/06/2022	19:35:19	7	0.0	0.0	7.54	
06/06/2022	19:36:04	6	0.0	0.0	7.53	
06/06/2022	19:36:49	6	0.0	0.0	7.53	
06/06/2022	19:37:34	6	0.0	0.0	7.52	
06/06/2022	19:38:19	6	0.0	0.0	7.52	
06/06/2022	19:39:49	6	0.0	0.0	7.51	
06/06/2022	19:40:34	6	0.0	0.0	7.51	
06/06/2022	19:41:19	7	0.0	0.0	7.50	
06/06/2022	19:42:04	6	0.0	0.0	7.50	
06/06/2022	19:42:49	72	0.4	1.6	8.35	
06/06/2022	19:43:34	68	0.0	1.7	8.35	
06/06/2022	19:44:19	64	0.0	1.7	8.35	
06/06/2022	19:45:04	19	0.0	1.7	8.35	
06/06/2022	19:45:49	18	0.0	1.7	8.35	
06/06/2022	19:46:34	17	0.0	1.7	8.35	

Well	Field	Job Start	Customer	Job Number
TIMMOTHY MINCH OHI 10 10	UNDESIGNATED	Jun/05/2022	SWN PRODUCTION COMPANY	EOHC-01077

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/06/2022	19:48:04	17	0.0	1.7	8.35	
06/06/2022	19:48:49	18	0.0	1.7	8.35	
06/06/2022	19:49:34	17	0.0	1.7	8.35	
06/06/2022	19:50:19	17	0.0	1.7	8.35	
06/06/2022	19:51:04	17	0.0	1.7	8.35	
06/06/2022	19:51:49	17	0.0	1.7	8.35	
06/06/2022	19:52:34	17	0.0	1.7	8.35	
06/06/2022	19:53:19	17	0.0	1.7	8.35	
06/06/2022	19:54:04	17	0.0	1.7	8.35	
06/06/2022	19:54:49	17	0.0	1.7	8.35	
06/06/2022	19:55:34	17	0.0	1.7	8.35	
06/06/2022	19:56:19	16	0.0	1.7	8.35	
06/06/2022	19:57:04	17	0.0	1.7	8.35	
06/06/2022	19:57:49	17	0.0	1.7	8.35	
06/06/2022	19:58:34	74	0.0	2.2	8.35	
06/06/2022	19:59:19	1078	0.0	2.2	8.35	
06/06/2022	20:00:04	2333	0.0	2.2	8.35	
06/06/2022	20:00:49	2665	0.0	2.2	8.35	
06/06/2022	20:01:34	2630	0.0	2.2	8.35	
06/06/2022	20:02:19	2553	0.0	2.2	8.35	
06/06/2022	20:03:04	39	0.0	2.2	8.35	
06/06/2022	20:03:49	35	0.0	2.2	8.35	
06/06/2022	20:04:31	526	0.3	2.6	8.35	Set Packer
06/06/2022	20:04:34	511	0.1	2.6	8.35	
06/06/2022	20:05:19	1041	0.9	2.7	8.35	
06/06/2022	20:06:04	1501	0.0	3.3	8.35	
06/06/2022	20:06:49	1653	0.6	3.5	8.35	
06/06/2022	20:07:34	1620	0.3	3.8	8.35	
06/06/2022	20:08:19	1365	0.0	3.8	8.35	
06/06/2022	20:09:04	1298	0.0	3.8	8.35	
06/06/2022	20:09:49	1236	0.0	3.8	8.35	
06/06/2022	20:10:34	1175	0.0	3.8	8.35	
06/06/2022	20:11:19	1719	0.5	4.0	8.35	
06/06/2022	20:12:04	892	0.0	4.0	8.35	
06/06/2022	20:12:49	332	0.0	4.0	8.35	
06/06/2022	20:13:34	1760	0.8	4.5	8.35	
06/06/2022	20:14:19	1724	0.0	4.5	8.35	
06/06/2022	20:15:04	1044	0.0	4.5	8.35	
06/06/2022	20:15:49	11	0.0	4.5	8.35	
06/06/2022	20:16:34	11	0.0	4.5	8.35	
06/06/2022	20:17:19	10	0.0	4.5	8.35	
06/06/2022	20:18:04	9	0.0	4.5	8.35	
06/06/2022	20:18:49	8	0.0	4.5	8.35	
06/06/2022	20:19:34	8	0.0	4.5	8.35	
06/06/2022	20:20:19	8	0.0	4.5	8.35	
06/06/2022	20:21:04	9	0.0	4.5	8.35	
06/06/2022	20:21:49	8	0.0	4.5	8.35	
06/06/2022	20:22:34	9	0.0	4.5	8.35	
06/06/2022	20:23:06	9	0.0	4.5	8.35	Reset Total, Vol = 4.53 bbl
06/06/2022	20:23:11	9	0.0	0.0	8.35	Start Pumping Water
06/06/2022	20:23:19	9	0.0	0.0	8.35	
06/06/2022	20:24:04	9	0.0	0.0	8.35	
06/06/2022	20:24:49	39	0.3	0.3	8.35	
06/06/2022	20:25:34	67	4.0	1.6	8.35	

Well	Field	Job Start	Customer	Job Number
TIMMOTHY MINCH OHI 10 10	UNDESIGNATED	Jun/05/2022	SWN PRODUCTION COMPANY	EOHC-01077

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/06/2022	20:27:04	152	6.6	10.9	8.35	
06/06/2022	20:27:49	151	6.6	15.8	8.35	
06/06/2022	20:28:34	136	6.6	20.8	8.35	
06/06/2022	20:29:19	135	6.6	25.7	8.35	
06/06/2022	20:30:04	136	6.6	30.6	8.36	
06/06/2022	20:30:49	141	6.6	35.5	8.36	
06/06/2022	20:31:34	143	6.6	40.5	8.36	
06/06/2022	20:32:19	147	6.5	45.4	8.35	
06/06/2022	20:33:04	154	6.5	50.3	8.35	
06/06/2022	20:33:49	161	6.5	55.2	8.36	
06/06/2022	20:34:34	164	6.5	60.1	8.36	
06/06/2022	20:35:19	165	6.5	65.0	8.36	
06/06/2022	20:36:04	154	6.5	69.9	8.36	
06/06/2022	20:36:49	22	0.0	73.3	8.36	
06/06/2022	20:37:34	21	0.0	73.3	8.36	
06/06/2022	20:38:19	21	0.0	73.3	8.36	
06/06/2022	20:39:04	20	0.0	73.3	8.36	
06/06/2022	20:39:49	22	0.0	73.3	8.36	
06/06/2022	20:40:34	21	0.0	73.3	8.36	
06/06/2022	20:41:19	19	0.1	73.3	8.36	
06/06/2022	20:42:04	199	4.9	75.9	15.33	
06/06/2022	20:42:45	211	5.3	79.5	15.48	End Water
06/06/2022	20:42:47	205	5.3	79.7	15.49	Start Cement Slurry
06/06/2022	20:42:50	160	5.3	79.9	15.49	Reset Total, Vol = 79.94 bbl
06/06/2022	20:43:34	296	6.5	4.3	15.57	
06/06/2022	20:44:19	296	6.5	9.2	15.60	
06/06/2022	20:45:04	298	6.5	14.0	15.60	
06/06/2022	20:45:49	304	6.5	18.9	15.61	
06/06/2022	20:46:34	298	6.5	23.8	15.61	
06/06/2022	20:47:19	299	6.5	28.7	15.61	
06/06/2022	20:48:04	324	6.5	33.5	15.60	
06/06/2022	20:48:49	320	6.5	38.4	15.60	
06/06/2022	20:49:34	323	6.5	43.3	15.60	
06/06/2022	20:50:19	317	6.5	48.2	15.60	
06/06/2022	20:51:04	315	6.5	53.0	15.60	
06/06/2022	20:51:49	315	6.5	57.9	15.60	
06/06/2022	20:52:34	318	6.5	62.8	15.61	
06/06/2022	20:53:19	292	6.5	67.7	15.63	
06/06/2022	20:54:04	297	6.5	72.6	15.62	
06/06/2022	20:54:49	302	6.5	77.4	15.60	
06/06/2022	20:55:34	283	6.5	82.3	15.61	
06/06/2022	20:56:19	183	6.5	87.2	15.58	
06/06/2022	20:56:41	23	0.0	87.8	15.72	End Cement Slurry
06/06/2022	20:56:53	25	0.0	87.8	15.58	Drop Top Plug
06/06/2022	20:56:58	25	0.0	87.8	15.58	Start Displacement
06/06/2022	20:57:02	25	0.0	87.8	15.58	Reset Total, Vol = 87.78 bbl
06/06/2022	20:57:04	25	0.0	0.0	15.58	
06/06/2022	20:57:49	23	0.0	0.0	15.43	
06/06/2022	20:58:34	25	0.0	0.0	12.04	
06/06/2022	20:59:19	24	0.0	0.0	11.37	
06/06/2022	21:00:04	24	0.0	0.0	10.61	
06/06/2022	21:00:49	24	0.0	0.0	9.83	
06/06/2022	21:01:34	72	1.9	0.3	8.69	
06/06/2022	21:02:19	68	3.2	1.9	8.34	

Well	Field	Job Start	Customer	Job Number
TIMMOTHY MINCH OHI 10 10	UNDESIGNATED	Jun/05/2022	SWN PRODUCTION COMPANY	EOHC-01077

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/06/2022	21:03:49	16	0.0	4.0	8.35	
06/06/2022	21:04:34	16	0.0	4.0	8.35	
06/06/2022	21:05:19	16	0.0	4.0	8.35	
06/06/2022	21:06:04	16	0.0	4.0	8.35	
06/06/2022	21:06:49	15	0.0	4.0	8.35	
06/06/2022	21:07:34	67	3.8	5.9	8.35	
06/06/2022	21:08:19	177	6.5	9.8	8.35	
06/06/2022	21:09:04	202	6.5	14.7	8.35	
06/06/2022	21:09:49	181	6.5	19.5	8.35	
06/06/2022	21:10:34	200	6.5	24.4	8.35	
06/06/2022	21:11:19	215	6.5	29.3	8.35	
06/06/2022	21:12:04	229	6.5	34.1	8.35	
06/06/2022	21:12:49	237	6.5	39.0	8.35	
06/06/2022	21:13:34	244	6.5	43.8	8.35	
06/06/2022	21:14:19	199	5.3	48.3	8.35	
06/06/2022	21:15:04	205	3.3	51.5	8.35	
06/06/2022	21:15:49	193	3.3	54.0	8.35	
06/06/2022	21:16:34	213	3.3	56.5	8.35	
06/06/2022	21:17:19	180	3.3	59.0	8.35	
06/06/2022	21:18:04	189	3.3	61.5	8.35	
06/06/2022	21:18:49	1379	0.0	63.1	8.35	
06/06/2022	21:20:19	1360	0.0	63.1	8.35	
06/06/2022	21:21:04	1358	0.0	63.1	8.36	
06/06/2022	21:21:49	1361	0.0	63.1	8.36	
06/06/2022	21:22:34	1365	0.0	63.1	8.36	
06/06/2022	21:23:00	84	0.0	63.1	8.36	32 BBLS CEMENT TO SURFACE
06/06/2022	21:23:19	11	0.0	63.1	8.36	
06/06/2022	21:24:04	10	0.0	63.1	8.35	
06/06/2022	21:24:27	11	0.0	63.1	8.35	Bump Top Plug
06/06/2022	21:24:28	11	0.0	63.1	8.36	End Displacement

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
4.9			6.6	89.0	0.0	0.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
1375	213	326	1375			bbl	15.60 lb/gal

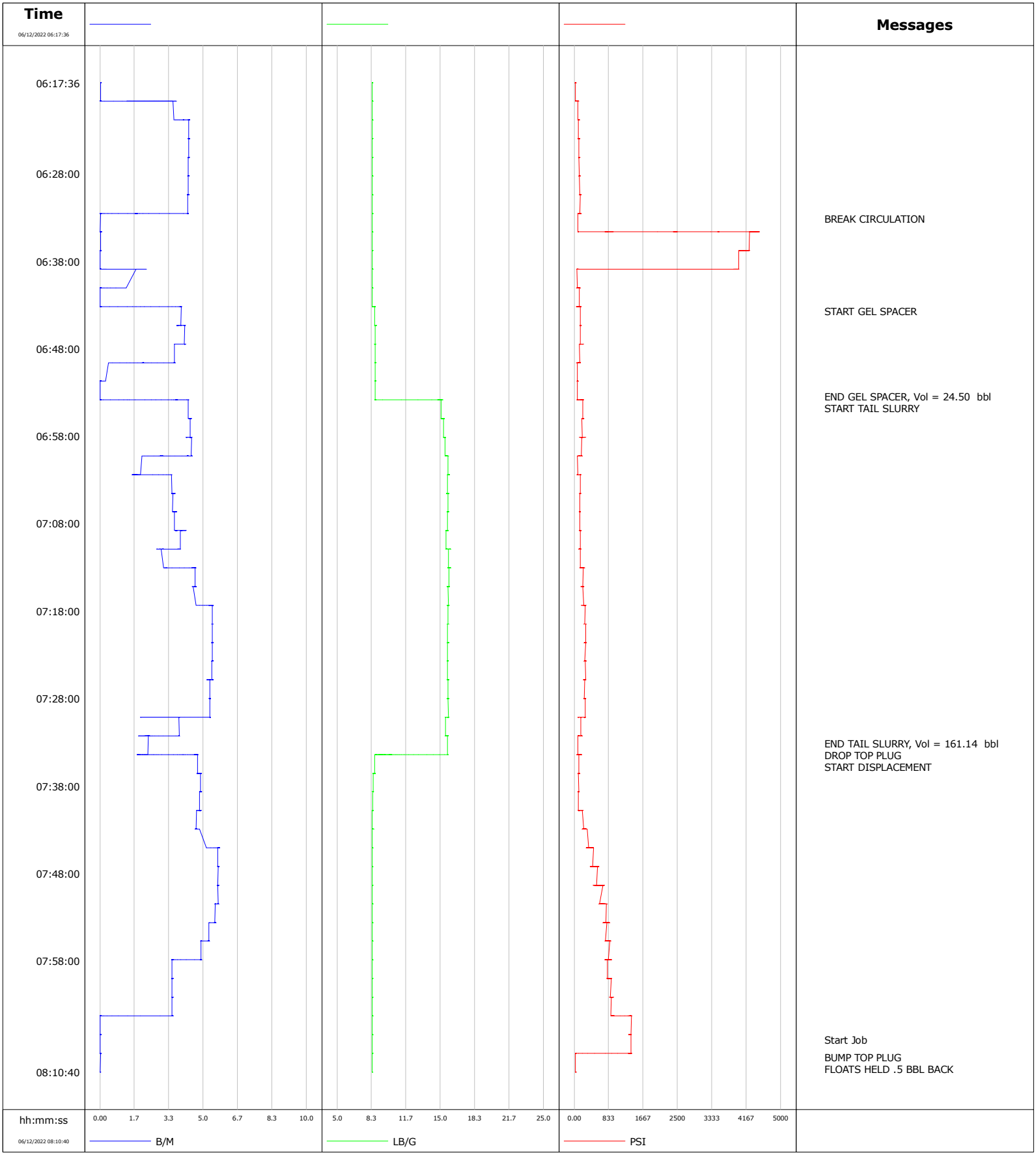
Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume
%	132.0 bbl	61.1 bbl	67 degF	X	32.0 bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
COMPANY MAN	BRIAN FOOTE	-	X -

Schlumberger

Cementing Job Report

Well	TIMMOTHY MINCH OHI 10H	**Client**	SOUTHWESTERN
Field	PANHANDLE	**SIR No.**	EOHC-01086
Engineer	JOSHUA NEDROW	**Job Type**	INTERMEDIATE
Country	UNITED STATES	**Job Date**	6/12/2022



Schlumberger Cementing Service Report

Customer	Job Number
SOUTHWESTERN	EOHC-01086

Well	Location (legal)	Schlumberger Location	Job Start
TIMMOTHY MINCH OHI 10H 10H	TIMMOTHY MINCH PAD	STRASBURG	Jun/11/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
PANHANDLE	Limestone	deg	12.3 in	1922.0 ft	1922.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
OHIO	WEST VIRGINIA	psi	81 degF	80 degF	lb/gal
Well Master 0066503141	**API/UWI** 47-069-00336				

Rig Name	Drilled For	Service Via
SDC 40	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
KCL BRINE	8.90 lb/gal	cP

Service Line	Job Type
Cementing	INTERMEDIATE

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Service Instructions

FILL LINES/PRESSURE TEST
BREAK CIRCULATION
PUMP 25 BBLS GEL SPACER
PUMP 161 BBLS TAIL SLURRY @ 15.6 PPG
SKS:762 YLD: 1.19 MW: 5.27
DROP TOP PLUG
DISPLACE 143.9 BBLS FRESH WATER
FLOATS HELD .5 BBLS BACK
44 BBLS CEMENT TO SURFACE

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
1902.0	9.6	36.0	K55	8RD
0.0	0.0	0.0		

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	143.9 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	147.0 bbl	34.0 bbl	76.5 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
X	X

Lift Pressure	Pipe Rotated	Pipe Reciprocated
728 psi	☐	☐

No. Centralizers	Top Plugs	Bottom Plugs
27	1	0

Cement Head Type
Single

Job Scheduled For	Arrived on Location	Leave Location
Jun/11/2022 21:30	Jun/11/2022 20:00	Jun/12/2022 10:30

Casing Tools

Shoe Type	Float
Shoe Depth	1902.0 ft
Stage Tool Type	
Stage Tool Depth	ft
Collar Type	Float
Collar Depth	1861.5 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	CPF1_DENSITY LB/G	CPF1_TTL_RATE B/M	CPF1_PRESS PSI	Message
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	

Well	Field	Job Start	Customer	Job Number
TIMMOTHY MINCH OHI 10H 10H	PANHANDLE	Jun/11/2022	SOUTHWESTERN	EOHC-01086

Date	Time 24-hr clock	CPF1_DENSITY LB/G	CPF1_TTL_RATE B/M	CPF1_PRESS PSI	Message
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	
06/12/2022	06:17:36	8.40	0.0	0.0	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
4.5			5.5	161.0		25.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
4000	0.0	550	1349			bbl	lb/gal

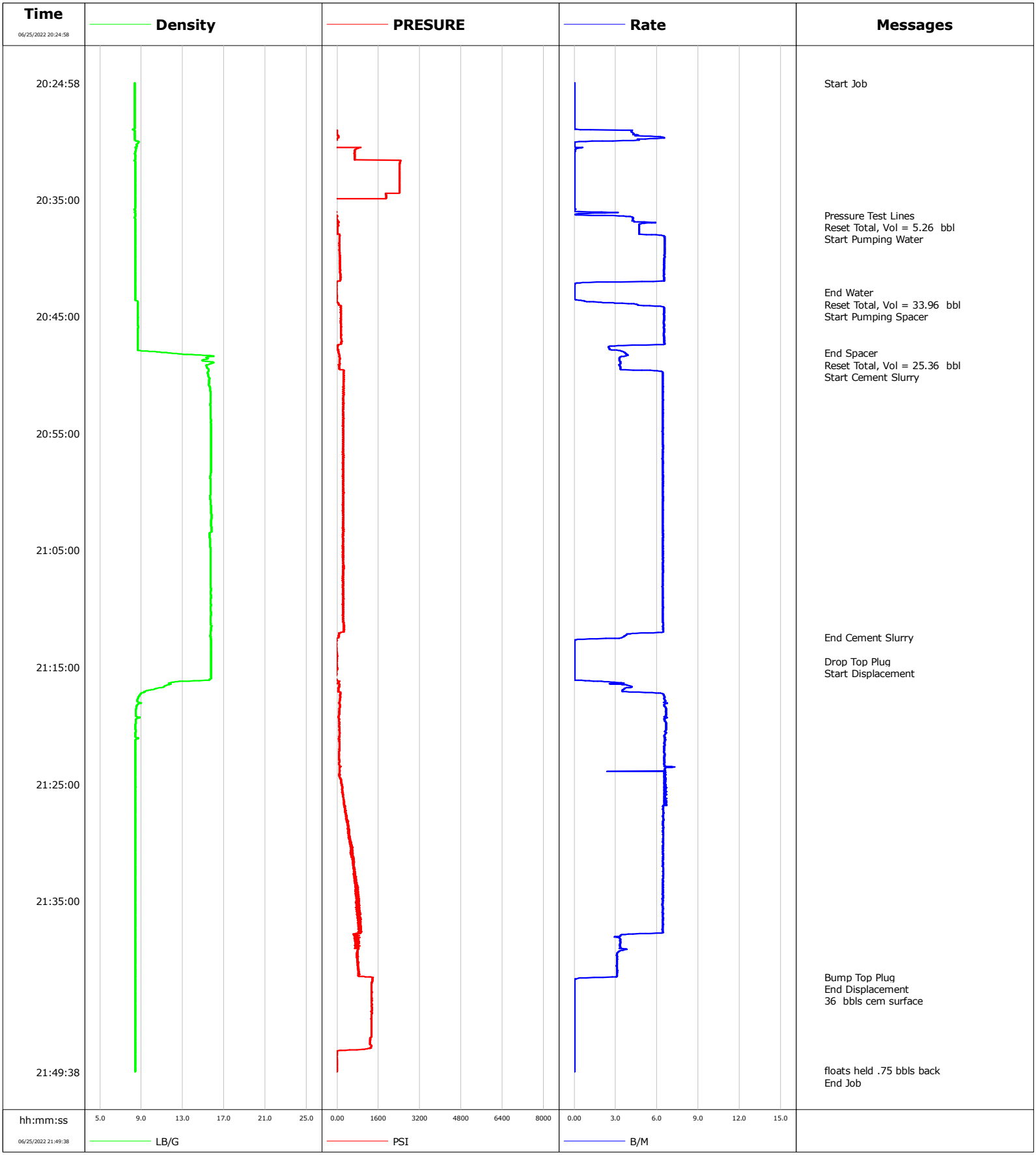
Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
%	161.0 bbl	143.9 bbl	67 degF	Cement Circulated to Surface? [X]	Volume 44.0 bbl
				Washed Thru Perfs [ ]	To ft

Customer or Authorized Representative	Schlumberger Supervisor		
JACK HAMM	JOSHUA NEDROW	Circulation Lost [ ]	Job Completed [X]
		-	-

Schlumberger

Cementing Job Report

Well	TIMMY MINCH OHI 210H	**Client**	SWN PRODUCTION COMPANY
Field	TWILIGHT	**SIR No.**	EOHC-01538
Engineer	BRAIN FOOTE	**Job Type**	INTERMEDIATE
Country	United States	**Job Date**	06-25-2022



Schlumberger Cementing Service Report

Customer	Job Number
SWN PRODUCTION COMPANY	EOHC-01538

Well	Location (legal)	Schlumberger Location	Job Start
TIMMY MINCH OHI 210H 210H	WHELLING ,WV	STRASBURG	Jun/25/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
TWILIGHT	Clean-Sandstone	1 deg	12.3 in	1926.0 ft	1926.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
OHIO	West Virginia	psi	81 degF	80 degF	lb/gal

Well Mast	API/UWI
47-069-00337-00-00	47-069-00337-00-00

Rig Name	Drilled For	Service Via
SDC #40	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
AIR	lb/gal	cP

Service Line	Job Type
Cementing	INTERMEDIATE

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Service Instructions

CEMENT 1909' OF 9 5/8 36 # WITH
25 BBL GEL
149.5 BBL TAIL 15.6 PPG
705 SK 1.19 YLD 5.27 H20
DROP TOP PLUG
DISP 144.4 BBL H20
FLOATS HELD .75 BBL BACK
36 BBL CEMENT TO SURFACE

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
1909.6	9.6	36.0	J55	BUTT
0.0	0.0	0.0		

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	144.4 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	147.6 bbl	35.9 bbl	75.5 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
X	X

Lift Pressure	Pipe Rotated	Pipe Reciprocated
832 psi	☐	☐

No. Centralizers	Top Plugs	Bottom Plugs
	1	

Cement Head Type
Single

Job Scheduled For	Arrived on Location	Leave Location
Jun/25/2022	Jun/25/2022	Jun/25/2022

Casing Tools		Squeeze Job	
Shoe Type	Float	Squeeze Type	
Shoe Depth	1909.0 ft	Tool Type	
Stage Tool Type		Tool Depth	ft
Stage Tool Depth	ft	Tail Pipe Size	in
Collar Type	Float	Tail Pipe Depth	ft
Collar Depth	1868.0 ft	Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/25/2022	20:24:58	-87	0.0	0.0	8.36	Started Acquisition
06/25/2022	20:24:59	-88	0.0	0.0	8.36	Start Job
06/25/2022	20:25:34	-88	0.0	0.0	8.36	
06/25/2022	20:26:10	-88	0.0	0.0	8.36	
06/25/2022	20:26:46	-87	0.0	0.1	8.36	
06/25/2022	20:27:22	-88	0.0	0.1	8.36	
06/25/2022	20:27:58	-90	0.0	0.1	8.36	
06/25/2022	20:28:34	-91	0.0	0.1	8.36	
06/25/2022	20:29:10	-12	4.2	0.8	8.36	
06/25/2022	20:29:46	-35	5.5	3.8	8.37	
06/25/2022	20:30:22	-80	0.0	4.8	8.53	
06/25/2022	20:30:58	668	0.0	4.8	8.40	
06/25/2022	20:31:34	669	0.0	4.8	8.39	
06/25/2022	20:32:10	2412	0.0	4.9	8.39	
06/25/2022	20:32:46	2410	0.0	4.9	8.39	
06/25/2022	20:33:22	2412	0.0	4.9	8.39	
06/25/2022	20:33:58	2413	0.0	4.9	8.39	
06/25/2022	20:34:34	1887	0.0	4.9	8.38	
06/25/2022	20:35:10	-85	0.0	4.9	8.38	
06/25/2022	20:35:46	-82	0.1	4.9	8.38	
06/25/2022	20:36:17	-69	0.1	5.2	8.39	Pressure Test Lines

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH OHI 210H 210H	TWILIGHT	Jun/25/2022	SWN PRODUCTION COMPANY	EOHC-01538

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/25/2022	20:36:22	-12	3.3	0.1	8.39	
06/25/2022	20:36:23	-11	3.6	0.2	8.39	Start Pumping Water
06/25/2022	20:36:58	28	5.6	2.7	8.39	
06/25/2022	20:37:34	11	4.7	5.6	8.39	
06/25/2022	20:38:10	94	6.5	8.7	8.39	
06/25/2022	20:38:46	86	6.5	12.7	8.39	
06/25/2022	20:39:22	94	6.5	16.6	8.39	
06/25/2022	20:39:58	102	6.5	20.5	8.39	
06/25/2022	20:40:34	101	6.5	24.4	8.39	
06/25/2022	20:41:10	103	6.5	28.4	8.39	
06/25/2022	20:41:46	134	6.5	32.3	8.39	
06/25/2022	20:42:22	-21	0.0	34.0	8.39	
06/25/2022	20:42:55	-19	0.0	34.0	8.39	End Water
06/25/2022	20:42:56	-18	0.0	34.0	8.39	Reset Total, Vol = 33.96 bbl
06/25/2022	20:42:58	-22	0.0	0.0	8.39	
06/25/2022	20:42:59	-18	0.0	0.0	8.39	Start Pumping Spacer
06/25/2022	20:43:34	-30	0.1	0.0	8.39	
06/25/2022	20:44:10	128	6.5	2.0	8.63	
06/25/2022	20:44:46	136	6.5	5.9	8.63	
06/25/2022	20:45:22	142	6.5	9.8	8.65	
06/25/2022	20:45:58	137	6.5	13.7	8.67	
06/25/2022	20:46:34	161	6.5	17.6	8.66	
06/25/2022	20:47:10	159	6.5	21.5	8.64	
06/25/2022	20:47:46	12	2.5	24.2	8.65	
06/25/2022	20:48:07	59	3.7	25.3	11.83	End Spacer
06/25/2022	20:48:08	58	3.7	25.4	12.07	Reset Total, Vol = 25.36 bbl
06/25/2022	20:48:11	74	3.7	0.2	12.68	Start Cement Slurry
06/25/2022	20:48:22	78	3.7	0.9	16.02	
06/25/2022	20:48:58	81	3.3	2.9	15.95	
06/25/2022	20:49:34	246	4.3	4.9	15.48	
06/25/2022	20:50:10	265	6.4	8.7	15.52	
06/25/2022	20:50:46	249	6.4	12.5	15.52	
06/25/2022	20:51:22	238	6.4	16.4	15.66	
06/25/2022	20:51:58	216	6.4	20.2	15.68	
06/25/2022	20:52:34	235	6.4	24.1	15.66	
06/25/2022	20:53:10	239	6.4	27.9	15.67	
06/25/2022	20:53:46	257	6.4	31.8	15.72	
06/25/2022	20:54:22	207	6.4	35.6	15.73	
06/25/2022	20:54:58	217	6.4	39.5	15.73	
06/25/2022	20:55:34	264	6.4	43.3	15.74	
06/25/2022	20:56:10	254	6.4	47.2	15.73	
06/25/2022	20:56:46	236	6.4	51.0	15.73	
06/25/2022	20:57:22	235	6.4	54.9	15.74	
06/25/2022	20:57:58	243	6.4	58.7	15.75	
06/25/2022	20:58:34	239	6.4	62.6	15.68	
06/25/2022	20:59:10	232	6.4	66.4	15.71	
06/25/2022	20:59:46	212	6.4	70.3	15.70	
06/25/2022	21:00:22	223	6.4	74.2	15.66	
06/25/2022	21:00:58	246	6.4	78.0	15.69	
06/25/2022	21:01:34	246	6.4	81.9	15.75	
06/25/2022	21:02:10	230	6.4	85.7	15.76	
06/25/2022	21:02:46	225	6.4	89.6	15.72	
06/25/2022	21:03:22	250	6.4	93.4	15.80	
06/25/2022	21:03:58	232	6.4	97.3	15.63	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH OHI 210H 210H	TWILIGHT	Jun/25/2022	SWN PRODUCTION COMPANY	EOHC-01538

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/25/2022	21:05:10	203	6.4	105.0	15.67	
06/25/2022	21:05:46	225	6.4	108.8	15.70	
06/25/2022	21:06:22	255	6.4	112.7	15.69	
06/25/2022	21:06:58	232	6.4	116.6	15.69	
06/25/2022	21:07:34	227	6.4	120.4	15.70	
06/25/2022	21:08:10	212	6.4	124.3	15.71	
06/25/2022	21:08:46	237	6.4	128.1	15.71	
06/25/2022	21:09:22	254	6.4	132.0	15.70	
06/25/2022	21:09:58	237	6.4	135.8	15.69	
06/25/2022	21:10:34	208	6.4	139.7	15.72	
06/25/2022	21:11:10	237	6.4	143.5	15.68	
06/25/2022	21:11:46	281	6.4	147.4	15.72	
06/25/2022	21:12:22	60	3.6	150.5	15.66	
06/25/2022	21:12:24	63	3.6	150.6	15.74	End Cement Slurry
06/25/2022	21:12:58	-29	0.0	151.2	15.74	
06/25/2022	21:13:34	-35	0.0	151.2	15.74	
06/25/2022	21:14:10	2	0.0	151.2	15.74	
06/25/2022	21:14:29	-7	0.0	151.2	15.74	Drop Top Plug
06/25/2022	21:14:46	-26	0.0	151.2	15.74	
06/25/2022	21:15:22	-18	0.0	151.2	15.74	
06/25/2022	21:15:30	-39	0.0	151.2	15.74	Start Displacement
06/25/2022	21:15:58	-42	0.0	151.2	15.75	
06/25/2022	21:16:34	83	3.9	152.4	11.39	
06/25/2022	21:17:10	119	5.2	154.7	9.27	
06/25/2022	21:17:46	108	6.5	158.5	8.62	
06/25/2022	21:18:22	100	6.6	162.5	8.52	
06/25/2022	21:18:58	78	6.7	166.5	8.45	
06/25/2022	21:19:34	77	6.5	170.4	8.46	
06/25/2022	21:20:10	84	6.7	174.4	8.42	
06/25/2022	21:20:46	80	6.6	178.4	8.40	
06/25/2022	21:21:22	92	6.5	182.3	8.38	
06/25/2022	21:21:58	87	6.5	186.3	8.39	
06/25/2022	21:22:34	76	6.5	190.2	8.39	
06/25/2022	21:23:10	75	6.5	194.1	8.39	
06/25/2022	21:23:46	91	6.6	198.1	8.39	
06/25/2022	21:24:22	100	6.5	201.9	8.41	
06/25/2022	21:24:58	160	6.6	205.9	8.39	
06/25/2022	21:25:34	212	6.6	209.8	8.39	
06/25/2022	21:26:10	248	6.5	213.8	8.39	
06/25/2022	21:26:46	261	6.5	217.8	8.39	
06/25/2022	21:27:22	320	6.5	221.6	8.39	
06/25/2022	21:27:58	369	6.5	225.5	8.39	
06/25/2022	21:28:34	421	6.4	229.4	8.39	
06/25/2022	21:29:10	477	6.4	233.2	8.39	
06/25/2022	21:29:46	462	6.5	237.1	8.39	
06/25/2022	21:30:22	517	6.4	241.0	8.39	
06/25/2022	21:30:58	620	6.5	244.8	8.39	
06/25/2022	21:31:34	639	6.4	248.7	8.39	
06/25/2022	21:32:10	628	6.5	252.5	8.39	
06/25/2022	21:32:46	645	6.4	256.4	8.39	
06/25/2022	21:33:22	733	6.5	260.3	8.39	
06/25/2022	21:33:58	776	6.4	264.1	8.39	
06/25/2022	21:34:34	804	6.4	268.0	8.39	
06/25/2022	21:35:10	807	6.4	271.8	8.39	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH OHI 210H 210H	TWILIGHT	Jun/25/2022	SWN PRODUCTION COMPANY	EOHC-01538

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/25/2022	21:36:22	910	6.4	279.5	8.39	
06/25/2022	21:36:58	895	6.4	283.4	8.39	
06/25/2022	21:37:34	847	6.4	287.2	8.39	
06/25/2022	21:38:10	819	3.3	290.0	8.39	
06/25/2022	21:38:46	750	3.3	292.0	8.39	
06/25/2022	21:39:22	799	3.2	294.0	8.39	
06/25/2022	21:39:58	783	3.1	295.9	8.39	
06/25/2022	21:40:34	808	3.1	297.7	8.39	
06/25/2022	21:41:10	855	3.1	299.6	8.39	
06/25/2022	21:41:31	1246	3.1	300.7	8.39	Bump Top Plug
06/25/2022	21:41:32	1304	2.8	300.7	8.39	End Displacement
06/25/2022	21:41:46	1364	0.0	300.9	8.39	
06/25/2022	21:42:00	1345	0.0	300.9	8.39	36 bbls cem surface
06/25/2022	21:42:22	1324	0.0	300.9	8.39	
06/25/2022	21:42:58	1336	0.0	300.9	8.39	
06/25/2022	21:43:34	1325	0.0	300.9	8.39	
06/25/2022	21:44:10	1344	0.0	300.9	8.39	
06/25/2022	21:44:46	1333	0.0	300.9	8.39	
06/25/2022	21:45:22	1329	0.0	300.9	8.39	
06/25/2022	21:45:58	1325	0.0	300.9	8.39	
06/25/2022	21:46:34	1321	0.0	301.0	8.39	
06/25/2022	21:47:10	1273	0.0	301.0	8.39	
06/25/2022	21:47:46	478	0.0	301.0	8.39	
06/25/2022	21:48:22	-35	0.0	301.0	8.39	
06/25/2022	21:48:58	-7	0.0	301.0	8.39	
06/25/2022	21:49:32	-5	0.0	301.0	8.39	floats held .75 bbls back
06/25/2022	21:49:33	-5	0.0	301.0	8.39	End Job

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
4.6			7.3	150.0	0.0	25.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
1336	832	485	1336			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
%	149.5 bbl	144.4 bbl	68 degF	Cement Circulated to Surface? [X]	Volume 36.0 bbl
				Washed Thru Perfs [ ]	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
COMAPNY MAN	BRAIN FOOTE	-	-

INNOVEX

Date:	5/19/2022	Rig:	SWN SDC 40
Customer:	SWN PRODUCTION COMPANY	Service Rep:	IAN STEFANISZYN
Co Rep:	JACK / CHRIS	Casing Co. :	COSTY'S
Lease/Well:	TIMMY MINCH OHI / 8H	Cement Co. :	SCHLUMBERGER
Closest City:	WHEELING	AFE/API:	1008089

HOLE INFO		TOOL INFO	
Hole Depth (ft):	595	Element OD (in):	15.25
Open Hole Size (in):	17.5	Element Length (ft):	10
Mud Wt (#/gal):	8.4	ICP Opening PSI:	1200
Mud Type:	H20	ICP Closing PSI:	730
Dev @ TD:		Stage Tool Open PSI:	450
TVD:		Stage Tool Close PSI:	1000
Annular Fill (ft/bbl):	8.083		

CASING INFO

	Top	Bottom		Top	Bottom
Size:	13 3/8		Burst:	2730	
Weight:	54.5		80% Burst:	2184	
Grade:	J55		Capacity:	0.15459	
Thread:	BTC		Previous Csg Size:		20
ID:	12.615		Prev. Csg Wt (#/ft):		94
Casing Depth:	530		Previous Csg Depth:		136

MAKE CASING DEPTH EQUAL HOLE DEPTH

TOOLS AND EQUIPMENT

(All tools and equipment - manufactuer, type, part or serial numbers with batch reference number)

	Part Number	SO# or Serial #
Float Shoe:	315-340-0300-0006-CE	46031
Float Collar:	350-340-0100-0006-BB	18935
Baffle:		
Stage Tool #1:	500-340-0309-0006-CI	55035-2
Stage Tool #2:		
Plug Set #1:		
Plug Set #2:		
Packer #1:	01-1338-A01-L-54.5/48-N-BTC	140523-03
Packer #2:		
Contigency Collar:		
Contingency Cone:		
Cancellation Cone:		

CENTRALIZER INFO

		Type	Manufacturer (if known)
Centralizers Above ICP/DV:	#1	Hinged Bowspring	SUMMIT
	#2		
Centralizers Below ICP/DV:	#1	Hinged Bowspring	SUMMIT
	#2		

CEMENT INFO

1st Spacer Volume (bbls)	Type Addatives:	Weight:		BBLS:
10	GEL SPACER	8.6		10
1st Lead Sx	Type Addatives:	Yield:	Weight:	BBLS:
				0
1st Tail Sx	Type/Addatives:	Yield:	Weight:	BBLS:
165	CEMENT	1.19	15.6	35
2nd Spacer Volume (bbls)	Type Addatives:	Weight:		BBLS:
15	GEL SPACER	8.6		15
2nd Lead Sx	Type / Addatives:	Yield:	Weight:	BBLS:
				0
2nd Tail Sx	Type / Addatives:	Yield:	Weight:	BBLS:
475	CEMENT	1.19	15.6	101
3rd Spacer Volume (bbls)	Type Addatives:	Weight:		BBLS:
				0
3rd Lead Sx	Type / Addatives:	Yield:	Weight:	BBLS:
				0
3rd Tail Sx	Type / Addatives:	Yield:	Weight:	BBLS:
				0

DISPLACEMENT

1st Stage	Fluid:	H2O	Calculated Bbls	69	Actual Bbls	69
2nd Stage	Fluid:	H2O	Calculated Bbls	59	Actual Bbls	59
3rd Stage	Fluid:		Calculated Bbls		Actual Bbls	

DISPLACEMENT INFO

1st Stage	Returns?	No Returns	Bump Plug?	Yes	Max Pump Rate (bpm):	8.40
2nd Stage	Returns?	Full Returns	Bump Plug?		Max Pump Rate (bpm):	6.50
3rd Stage	Returns?		Bump Plug?		Max Pump Rate (bpm):	

INNOVEX

AS RUN

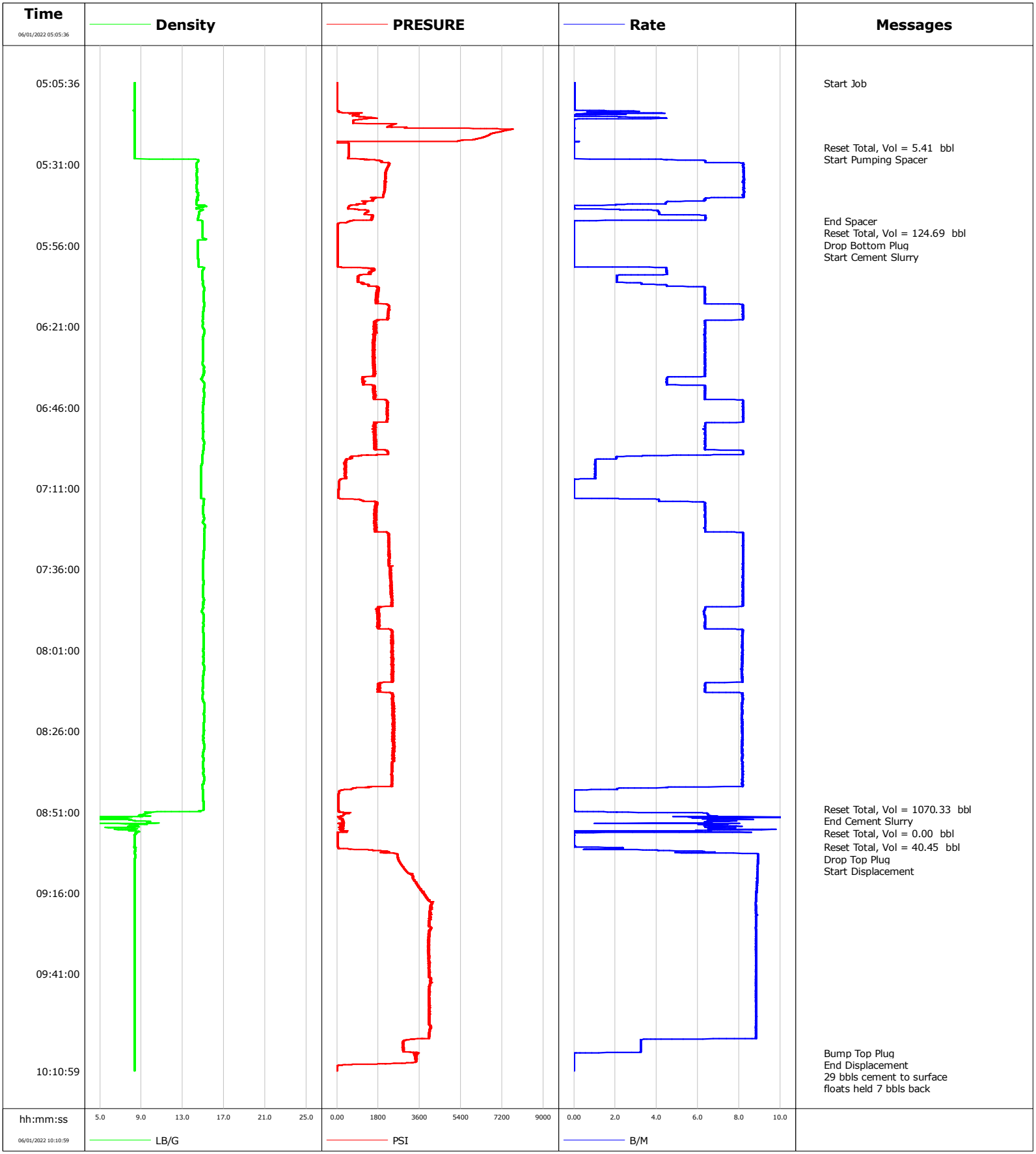
Customer:	SWN PRODUCTION COMPANY	**Casing Size:**	13 3/8	**Weight:**	54.5
Well:	TIMMY MINCH OHI / 8H	**Grade:**	J55		
County:	OHIO **State:** EST VIRGINIA	**Thread:**	BTC		
Rig:	SWN SDC 40	**ID:**	12.615		
Date:	5/19/2022	**Service Rep:**	IAN STEFANISZYN		

Description	Length	Top Depth	BBLS
Stickup Above Floor	1.30	-1.30	0.00
8 Joints Casing 13.375 54.5# BTC J55	373.80	0.00	0.20
8' Pup Joint 13.375 54.5# BTC J55	7.80	373.80	57.99
2 Stage Mechanical Stage Tool w/ Composite Seat Opening PSI: 450 Closing PSI: 1000 Actual PSI: 615 Actual PSI: 1447	2.69	381.60	59.19
11.25" OD Inflateable Casing Packer; 10' Element Opening PSI: 1200 Closing PSI: 730 Actual PSI: 1100 Actual PSI: N/A Pressure Drop: 3723 Inflate Volume: 0.75	17.00	384.29	59.61
1 Joints Casing 13.375 54.5# BTC J55	41.54	401.29	62.24
	0.00	442.83	68.66
Joints Casing	0.00	442.83	68.66
Float Collar	1.50	442.83	68.66
2 Joints Casing 13.375 54.5# BTC J55	83.09	444.33	68.89
Float Shoe	2.60	527.42	81.74
Off Bottom	30.00	530.02	#VALUE!
Well TD		595.00	

Schlumberger

Cementing Job Report

Well	TIMMY MINCH OHI 8H	**Client**	SWN PRODUCTION COMPANY
Field	PANHANDLE	**SIR No.**	EOHC-00945
Engineer	BRIAN FOOTE	**Job Type**	PRODUCTION
Country	United States	**Job Date**	05-31-2022



Schlumberger Cementing Service Report

Customer	Job Number
SWN PRODUCTION COMPANY	EOHC-00945

Well	Location (legal)	Schlumberger Location	Job Start
TIMMY MINCH OHI 8H 8H	WHEELING WV	STRASBURG	May/31/2022

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
PANHANDLE	SHALE	90 deg	8.8 in	23454.0 ft	6287.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
OHIO	West Virginia	psi	128 degF	128 degF	lb/gal

Well Mast	API/UWI
47-069-00335-00-00	47-069-00335-00-00

Rig Name	Drilled For	Service Via
SDC #40	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
OIL MUD	14.00 lb/gal	cP

Service Line	Job Type
Cementing	PRODUCTION

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Service Instructions

CEMENT 23454 20# PRODUCTION CASING WITH
120 BBLS MPE 14.5 PPG
DROP BOTTOM PLUG
1035 BBLS CEM 15 PPG
4508 SKS CLASS A
YLD 1.29 H20 5.98
DROP TOP PLUG
519.6 BBLS DISPLACEMENT
FLOATS HELD 7 BBLS BACK,
29 BBLS CEM TO SURFACE

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
23454.0	5.5	20.0	P110	BUTT
0.0	0.0	0.0		

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	519.6 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	520.7 bbl	91.5 bbl	896.5 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
X	X

Lift Pressure	Pipe Rotated	Pipe Reciprocated
2850 psi		

No. Centralizers	Top Plugs	Bottom Plugs
461	1	1

Cement Head Type
Single

Job Scheduled For	Arrived on Location	Leave Location
May/31/2022	May/31/2022	May/31/2022

Casing Tools

Shoe Type	Float
Shoe Depth	23457.0 ft
Stage Tool Type	
Stage Tool Depth	ft
Collar Type	Float
Collar Depth	23405.0 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/01/2022	05:05:36	8	0.0	0.0	8.36	Started Acquisition
06/01/2022	05:05:37	9	0.0	0.0	8.36	Start Job
06/01/2022	05:06:36	9	0.0	0.0	8.35	
06/01/2022	05:07:36	8	0.0	0.1	8.35	
06/01/2022	05:08:36	9	0.0	0.1	8.35	
06/01/2022	05:09:36	9	0.0	0.2	8.35	
06/01/2022	05:10:36	9	0.0	0.2	8.36	
06/01/2022	05:11:36	9	0.0	0.2	8.35	
06/01/2022	05:12:36	9	0.0	0.3	8.35	
06/01/2022	05:13:36	1	0.0	0.3	8.35	
06/01/2022	05:14:36	68	1.9	1.2	8.35	
06/01/2022	05:15:36	747	0.1	2.7	8.35	
06/01/2022	05:16:36	1641	4.5	4.7	8.35	
06/01/2022	05:17:36	704	0.0	5.4	8.35	
06/01/2022	05:18:36	2440	0.0	5.4	8.35	
06/01/2022	05:19:36	2969	0.0	5.4	8.35	
06/01/2022	05:20:36	7228	0.0	5.4	8.35	
06/01/2022	05:21:36	6665	0.0	5.4	8.35	
06/01/2022	05:22:36	6326	0.0	5.4	8.35	
06/01/2022	05:23:36	5326	0.0	5.4	8.35	
06/01/2022	05:24:36	510	0.0	5.4	8.35	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH OHI 8H 8H	PANHANDLE	May/31/2022	SWN PRODUCTION COMPANY	EOHC-00945

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/01/2022	05:25:36	511	0.0	0.0	8.35	
06/01/2022	05:25:38	511	0.0	0.0	8.35	Start Pumping Spacer
06/01/2022	05:26:36	512	0.0	0.0	8.35	
06/01/2022	05:27:36	513	0.0	0.0	8.35	
06/01/2022	05:28:36	495	0.0	0.0	8.35	
06/01/2022	05:29:36	1819	6.2	1.7	14.52	
06/01/2022	05:30:36	2260	8.2	8.6	14.36	
06/01/2022	05:31:36	2207	8.2	16.8	14.31	
06/01/2022	05:32:36	2155	8.2	25.0	14.42	
06/01/2022	05:33:36	2122	8.2	33.2	14.34	
06/01/2022	05:35:36	2081	8.2	49.6	14.38	
06/01/2022	05:36:36	2119	8.2	57.8	14.41	
06/01/2022	05:37:36	2084	8.2	66.0	14.37	
06/01/2022	05:38:36	2083	8.2	74.3	14.39	
06/01/2022	05:39:36	2048	8.2	82.5	14.49	
06/01/2022	05:40:36	2003	8.2	90.7	14.50	
06/01/2022	05:41:36	1542	6.3	98.1	14.37	
06/01/2022	05:42:36	1241	4.5	103.8	14.32	
06/01/2022	05:43:36	578	0.1	107.0	14.43	
06/01/2022	05:44:36	482	0.0	107.0	14.29	
06/01/2022	05:45:36	1333	4.1	110.2	14.59	
06/01/2022	05:46:36	1571	6.3	114.6	14.56	
06/01/2022	05:47:36	1515	6.4	121.0	14.47	
06/01/2022	05:48:27	551	0.0	124.7	14.90	End Spacer
06/01/2022	05:48:35	490	0.0	124.7	14.91	Reset Total, Vol = 124.69 bbl
06/01/2022	05:48:36	482	0.0	0.0	14.91	
06/01/2022	05:48:41	456	0.0	0.0	14.91	Drop Bottom Plug
06/01/2022	05:48:47	444	0.0	0.0	14.91	Start Cement Slurry
06/01/2022	05:49:36	29	0.0	0.0	14.93	
06/01/2022	05:50:36	30	0.0	0.0	14.92	
06/01/2022	05:51:36	29	0.0	0.0	14.94	
06/01/2022	05:52:36	30	0.0	0.0	14.93	
06/01/2022	05:53:36	29	0.0	0.0	14.93	
06/01/2022	05:54:36	30	0.0	0.0	14.47	
06/01/2022	05:55:36	31	0.0	0.0	14.47	
06/01/2022	05:56:36	31	0.0	0.0	14.47	
06/01/2022	05:57:36	31	0.0	0.0	14.47	
06/01/2022	05:58:36	30	0.0	0.0	14.47	
06/01/2022	05:59:36	29	0.0	0.0	14.48	
06/01/2022	06:00:36	30	0.0	0.0	14.55	
06/01/2022	06:01:36	30	0.0	0.0	14.56	
06/01/2022	06:02:36	169	1.9	0.0	14.73	
06/01/2022	06:03:36	1576	4.5	4.4	14.96	
06/01/2022	06:04:36	1485	4.5	8.9	14.87	
06/01/2022	06:05:36	929	2.1	11.9	14.87	
06/01/2022	06:06:36	943	2.1	14.0	14.90	
06/01/2022	06:07:36	1192	3.3	16.3	14.95	
06/01/2022	06:08:36	1790	5.5	20.3	15.02	
06/01/2022	06:09:36	1835	6.3	26.6	15.07	
06/01/2022	06:10:36	1727	6.3	32.9	15.03	
06/01/2022	06:11:36	1720	6.3	39.3	15.00	
06/01/2022	06:12:36	1779	6.3	45.6	15.01	
06/01/2022	06:13:36	1771	6.3	51.9	15.06	
06/01/2022	06:14:36	2279	8.2	59.4	15.06	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH OHI 8H 8H	PANHANDLE	May/31/2022	SWN PRODUCTION COMPANY	EOHC-00945

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/01/2022	06:16:36	2247	8.2	75.7	14.99	
06/01/2022	06:17:36	2234	8.2	83.9	14.96	
06/01/2022	06:18:36	2186	8.2	92.1	14.97	
06/01/2022	06:19:36	1734	6.3	99.1	14.95	
06/01/2022	06:20:36	1652	6.3	105.5	14.93	
06/01/2022	06:21:36	1674	6.3	111.8	15.01	
06/01/2022	06:22:36	1660	6.3	118.2	15.10	
06/01/2022	06:23:36	1687	6.3	124.5	15.03	
06/01/2022	06:24:36	1629	6.3	130.8	14.96	
06/01/2022	06:25:36	1564	6.3	137.2	14.96	
06/01/2022	06:26:36	1603	6.3	143.5	14.98	
06/01/2022	06:27:36	1647	6.3	149.8	14.97	
06/01/2022	06:28:36	1651	6.3	156.2	14.97	
06/01/2022	06:29:36	1603	6.3	162.5	14.97	
06/01/2022	06:30:36	1555	6.3	168.8	14.98	
06/01/2022	06:31:36	1640	6.3	175.2	14.96	
06/01/2022	06:32:36	1619	6.3	181.5	14.94	
06/01/2022	06:33:36	1596	6.3	187.9	15.05	
06/01/2022	06:34:36	1644	6.3	194.2	15.09	
06/01/2022	06:35:36	1673	6.3	200.5	15.03	
06/01/2022	06:36:36	1172	4.5	206.7	14.91	
06/01/2022	06:37:36	1137	4.5	211.2	14.90	
06/01/2022	06:38:36	1199	4.5	215.7	15.12	
06/01/2022	06:39:36	1669	6.3	221.2	15.08	
06/01/2022	06:40:36	1578	6.3	227.5	15.02	
06/01/2022	06:42:36	1650	6.3	240.2	15.06	
06/01/2022	06:43:36	2125	7.9	246.6	15.03	
06/01/2022	06:44:36	2195	8.2	254.8	15.00	
06/01/2022	06:45:36	2206	8.2	263.0	14.98	
06/01/2022	06:46:36	2162	8.2	271.2	14.96	
06/01/2022	06:47:36	2206	8.2	279.4	14.94	
06/01/2022	06:48:36	2190	8.2	287.5	14.99	
06/01/2022	06:49:36	2208	8.2	295.7	14.99	
06/01/2022	06:50:36	1693	7.9	303.9	14.96	
06/01/2022	06:51:36	1597	6.4	310.3	14.97	
06/01/2022	06:52:36	1650	6.3	316.7	14.96	
06/01/2022	06:53:36	1558	6.3	323.0	15.00	
06/01/2022	06:54:36	1621	6.3	329.4	14.98	
06/01/2022	06:55:36	1620	6.3	335.7	14.93	
06/01/2022	06:56:36	1636	6.3	342.1	15.06	
06/01/2022	06:57:36	1722	6.3	348.4	15.03	
06/01/2022	06:58:36	1688	6.3	354.7	15.01	
06/01/2022	06:59:36	2233	8.2	361.9	14.99	
06/01/2022	07:00:36	1771	7.1	370.1	14.91	
06/01/2022	07:01:36	573	2.0	373.3	14.90	
06/01/2022	07:02:36	351	1.0	374.7	14.90	
06/01/2022	07:03:36	341	1.0	375.7	14.84	
06/01/2022	07:04:36	354	1.0	376.7	14.80	
06/01/2022	07:05:36	357	1.0	377.8	14.79	
06/01/2022	07:06:36	358	1.0	378.8	14.79	
06/01/2022	07:07:36	360	1.0	379.8	14.77	
06/01/2022	07:08:36	99	0.0	380.3	14.77	
06/01/2022	07:09:36	73	0.0	380.3	14.77	
06/01/2022	07:10:36	67	0.0	380.3	14.77	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH OHI 8H 8H	PANHANDLE	May/31/2022	SWN PRODUCTION COMPANY	EOHC-00945

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/01/2022	07:12:36	63	0.0	380.3	14.79	
06/01/2022	07:13:36	61	0.0	380.3	14.78	
06/01/2022	07:14:36	1046	4.1	382.1	15.04	
06/01/2022	07:15:36	1683	6.3	387.4	15.03	
06/01/2022	07:16:36	1730	6.3	393.7	14.99	
06/01/2022	07:17:36	1710	6.3	400.1	14.98	
06/01/2022	07:18:36	1627	6.4	406.4	14.98	
06/01/2022	07:19:36	1704	6.3	412.7	15.01	
06/01/2022	07:20:36	1701	6.4	419.1	15.05	
06/01/2022	07:21:36	1628	6.4	425.4	14.95	
06/01/2022	07:22:36	1705	6.3	431.8	15.17	
06/01/2022	07:23:36	1651	6.4	438.1	15.09	
06/01/2022	07:24:36	2164	8.1	444.7	15.10	
06/01/2022	07:25:36	2250	8.2	452.9	15.08	
06/01/2022	07:26:36	2269	8.2	461.1	15.07	
06/01/2022	07:27:36	2271	8.2	469.3	15.06	
06/01/2022	07:28:36	2236	8.2	477.4	15.06	
06/01/2022	07:29:36	2251	8.2	485.6	15.06	
06/01/2022	07:30:36	2301	8.2	493.8	15.04	
06/01/2022	07:31:36	2269	8.2	502.0	15.02	
06/01/2022	07:32:36	2281	8.2	510.2	15.02	
06/01/2022	07:33:36	2259	8.2	518.4	14.99	
06/01/2022	07:34:36	2259	8.2	526.5	14.99	
06/01/2022	07:35:36	2341	8.2	534.7	15.00	
06/01/2022	07:36:36	2281	8.2	542.9	14.98	
06/01/2022	07:37:36	2364	8.2	551.1	14.98	
06/01/2022	07:38:36	2345	8.2	559.3	14.97	
06/01/2022	07:39:36	2351	8.2	567.4	15.01	
06/01/2022	07:40:36	2353	8.2	575.6	15.01	
06/01/2022	07:41:36	2352	8.2	583.8	14.97	
06/01/2022	07:42:36	2382	8.2	592.0	14.97	
06/01/2022	07:43:36	2392	8.2	600.1	14.98	
06/01/2022	07:44:36	2374	8.2	608.3	14.95	
06/01/2022	07:45:36	2408	8.2	616.5	15.05	
06/01/2022	07:46:36	2380	8.2	624.7	15.00	
06/01/2022	07:47:36	1775	6.5	632.7	14.98	
06/01/2022	07:49:36	1834	6.3	645.4	14.98	
06/01/2022	07:50:36	1750	6.3	651.7	15.03	
06/01/2022	07:51:36	1825	6.3	658.0	15.03	
06/01/2022	07:52:36	1851	6.3	664.4	14.98	
06/01/2022	07:53:36	1731	6.3	670.7	15.00	
06/01/2022	07:54:36	2345	8.1	677.3	14.96	
06/01/2022	07:55:36	2398	8.2	685.5	15.00	
06/01/2022	07:56:36	2420	8.1	693.7	15.02	
06/01/2022	07:57:36	2411	8.2	701.8	15.03	
06/01/2022	07:58:36	2379	8.1	710.0	15.03	
06/01/2022	07:59:36	2397	8.1	718.1	15.00	
06/01/2022	08:00:36	2428	8.2	726.3	15.00	
06/01/2022	08:01:36	2360	8.2	734.4	15.01	
06/01/2022	08:02:36	2427	8.2	742.6	15.01	
06/01/2022	08:03:36	2418	8.1	750.7	15.03	
06/01/2022	08:04:36	2429	8.2	758.8	15.01	
06/01/2022	08:05:36	2378	8.1	767.0	15.03	
06/01/2022	08:06:36	2473	8.1	775.1	15.09	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH OHI 8H 8H	PANHANDLE	May/31/2022	SWN PRODUCTION COMPANY	EOHC-00945

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/01/2022	08:08:36	2415	8.1	791.4	15.01	
06/01/2022	08:09:36	2447	8.2	799.5	14.97	
06/01/2022	08:10:36	2372	8.1	807.6	14.94	
06/01/2022	08:11:36	1824	6.3	814.6	14.98	
06/01/2022	08:12:36	1869	6.4	821.0	14.95	
06/01/2022	08:13:36	1848	6.3	827.3	14.93	
06/01/2022	08:14:36	2424	8.2	834.7	14.95	
06/01/2022	08:15:36	2444	8.2	842.8	14.93	
06/01/2022	08:16:36	2438	8.2	851.0	14.99	
06/01/2022	08:17:36	2465	8.1	859.1	15.11	
06/01/2022	08:18:36	2409	8.1	867.2	15.13	
06/01/2022	08:19:36	2481	8.1	875.4	15.10	
06/01/2022	08:20:36	2448	8.1	883.5	15.04	
06/01/2022	08:21:36	2452	8.1	891.6	15.08	
06/01/2022	08:22:36	2468	8.1	899.8	15.08	
06/01/2022	08:23:36	2504	8.2	907.9	15.04	
06/01/2022	08:24:36	2513	8.1	916.0	15.03	
06/01/2022	08:25:36	2464	8.1	924.2	15.05	
06/01/2022	08:26:36	2430	8.1	932.3	15.01	
06/01/2022	08:27:36	2410	8.1	940.5	14.99	
06/01/2022	08:28:36	2451	8.2	948.6	14.99	
06/01/2022	08:29:36	2516	8.1	956.8	15.04	
06/01/2022	08:30:36	2503	8.1	964.9	15.10	
06/01/2022	08:31:36	2461	8.1	973.0	15.06	
06/01/2022	08:32:36	2465	8.1	981.2	14.99	
06/01/2022	08:33:36	2446	8.2	989.3	14.94	
06/01/2022	08:34:36	2416	8.1	997.5	15.02	
06/01/2022	08:35:36	2400	8.2	1005.6	15.00	
06/01/2022	08:36:36	2406	8.1	1013.7	14.99	
06/01/2022	08:37:36	2407	8.2	1021.9	15.00	
06/01/2022	08:38:36	2390	8.2	1030.1	15.03	
06/01/2022	08:39:36	2374	8.1	1038.2	15.02	
06/01/2022	08:40:36	2421	8.2	1046.4	15.07	
06/01/2022	08:41:36	2405	8.2	1054.5	15.04	
06/01/2022	08:42:36	2356	8.2	1062.7	14.90	
06/01/2022	08:43:36	704	2.3	1069.3	14.93	
06/01/2022	08:44:36	90	0.0	1070.3	14.99	
06/01/2022	08:45:36	63	0.0	1070.3	14.99	
06/01/2022	08:46:36	59	0.0	1070.3	15.00	
06/01/2022	08:47:36	58	0.0	1070.3	15.00	
06/01/2022	08:48:36	57	0.0	1070.3	15.00	
06/01/2022	08:49:36	56	0.0	1070.3	15.00	
06/01/2022	08:50:05	56	0.0	1070.3	15.01	Reset Total, Vol = 1070.33 bbl
06/01/2022	08:50:22	64	0.0	0.0	15.01	End Cement Slurry
06/01/2022	08:50:25	68	0.0	0.0	14.97	Reset Total, Vol = 0.00 bbl
06/01/2022	08:50:36	72	0.0	0.0	14.63	
06/01/2022	08:51:36	314	6.5	3.5	9.38	
06/01/2022	08:52:36	139	6.0	10.3	8.14	
06/01/2022	08:53:36	274	6.5	17.6	8.29	
06/01/2022	08:54:36	100	7.3	23.9	7.48	
06/01/2022	08:56:36	257	6.5	38.0	8.30	
06/01/2022	08:57:36	27	0.0	40.4	8.49	
06/01/2022	08:58:36	29	0.0	40.4	8.35	
06/01/2022	08:59:36	29	0.0	40.4	8.35	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH OHI 8H 8H	PANHANDLE	May/31/2022	SWN PRODUCTION COMPANY	EOHC-00945

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/01/2022	09:01:36	29	0.1	40.4	8.34	
06/01/2022	09:01:50	40	0.1	40.4	8.30	Reset Total, Vol = 40.45 bbl
06/01/2022	09:01:59	49	2.3	0.2	8.47	Drop Top Plug
06/01/2022	09:02:00	50	2.3	0.2	8.44	Start Displacement
06/01/2022	09:02:36	1194	2.1	1.4	8.39	
06/01/2022	09:03:36	2088	5.4	6.5	8.38	
06/01/2022	09:04:36	2630	8.9	15.1	8.39	
06/01/2022	09:05:36	2691	8.9	24.0	8.36	
06/01/2022	09:06:36	2743	8.9	32.9	8.36	
06/01/2022	09:07:36	2837	8.9	41.8	8.36	
06/01/2022	09:08:36	2941	8.9	50.7	8.36	
06/01/2022	09:09:36	3073	8.9	59.6	8.36	
06/01/2022	09:10:36	3302	8.9	68.5	8.36	
06/01/2022	09:11:36	3306	8.9	77.3	8.35	
06/01/2022	09:12:36	3439	8.9	86.2	8.35	
06/01/2022	09:13:36	3510	8.9	95.0	8.35	
06/01/2022	09:14:36	3638	8.9	103.9	8.35	
06/01/2022	09:15:36	3691	8.8	112.7	8.36	
06/01/2022	09:16:36	3851	8.8	121.6	8.35	
06/01/2022	09:17:36	3956	8.8	130.4	8.36	
06/01/2022	09:18:36	4044	8.8	139.2	8.35	
06/01/2022	09:19:36	4133	8.8	148.0	8.36	
06/01/2022	09:20:36	4173	8.8	156.8	8.35	
06/01/2022	09:21:36	4038	8.8	165.6	8.35	
06/01/2022	09:22:36	4136	8.8	174.4	8.35	
06/01/2022	09:23:36	4016	8.8	183.3	8.35	
06/01/2022	09:24:36	4040	8.8	192.1	8.35	
06/01/2022	09:25:36	4042	8.8	200.9	8.35	
06/01/2022	09:26:36	4054	8.8	209.7	8.35	
06/01/2022	09:27:36	4029	8.8	218.5	8.35	
06/01/2022	09:28:36	4051	8.8	227.3	8.35	
06/01/2022	09:29:36	4001	8.8	236.2	8.35	
06/01/2022	09:30:36	3998	8.8	245.0	8.35	
06/01/2022	09:31:36	4034	8.8	253.8	8.35	
06/01/2022	09:32:36	3986	8.8	262.6	8.35	
06/01/2022	09:33:36	3978	8.8	271.4	8.35	
06/01/2022	09:34:36	4022	8.8	280.2	8.35	
06/01/2022	09:35:36	4045	8.8	289.1	8.35	
06/01/2022	09:36:36	4042	8.8	297.9	8.35	
06/01/2022	09:37:36	4013	8.8	306.7	8.35	
06/01/2022	09:38:36	4005	8.8	315.5	8.35	
06/01/2022	09:39:36	4058	8.8	324.3	8.35	
06/01/2022	09:40:36	4036	8.8	333.1	8.35	
06/01/2022	09:41:36	4000	8.8	342.0	8.35	
06/01/2022	09:42:36	4105	8.8	350.8	8.35	
06/01/2022	09:43:36	4088	8.8	359.6	8.35	
06/01/2022	09:44:36	4026	8.8	368.4	8.35	
06/01/2022	09:45:36	4054	8.8	377.2	8.35	
06/01/2022	09:46:36	4044	8.8	386.0	8.35	
06/01/2022	09:47:36	3987	8.8	394.8	8.35	
06/01/2022	09:48:36	4019	8.8	403.7	8.35	
06/01/2022	09:49:36	4022	8.8	412.5	8.35	
06/01/2022	09:50:36	4054	8.8	421.3	8.35	
06/01/2022	09:51:36	4048	8.8	430.1	8.35	

Well	Field	Job Start	Customer	Job Number
TIMMY MINCH OHI 8H 8H	PANHANDLE	May/31/2022	SWN PRODUCTION COMPANY	EOHC-00945

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Volume BBL	Density LB/G	Message
06/01/2022	09:53:36	4043	8.8	447.8	8.35	
06/01/2022	09:54:36	4030	8.8	456.6	8.35	
06/01/2022	09:55:36	4032	8.8	465.4	8.35	
06/01/2022	09:56:36	4059	8.8	474.2	8.35	
06/01/2022	09:57:36	4109	8.8	483.0	8.35	
06/01/2022	09:58:36	4021	8.8	491.8	8.35	
06/01/2022	09:59:36	4000	8.8	500.7	8.35	
06/01/2022	10:00:36	4048	8.8	509.5	8.35	
06/01/2022	10:01:36	2976	3.2	515.5	8.35	
06/01/2022	10:03:36	2889	3.2	521.9	8.35	
06/01/2022	10:04:36	2876	3.2	525.2	8.35	
06/01/2022	10:05:28	3336	0.1	527.6	8.35	Bump Top Plug
06/01/2022	10:05:30	3339	0.0	527.6	8.35	End Displacement
06/01/2022	10:05:36	3554	0.0	527.6	8.35	
06/01/2022	10:06:36	3401	0.0	527.6	8.35	
06/01/2022	10:07:36	3414	0.0	527.6	8.35	
06/01/2022	10:07:41	3471	0.0	527.6	8.35	29 bbls cement to surface
06/01/2022	10:08:36	2831	0.0	527.6	8.35	
06/01/2022	10:09:36	17	0.0	527.6	8.35	
06/01/2022	10:10:36	9	0.0	527.6	8.35	
06/01/2022	10:10:46	9	0.0	527.6	8.35	floats held 7 bbls back

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
6.8			9.5	1070.0	0.0	124.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
4200	2800	2038	3430			bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp		
%	1035.8 bbl	519.6 bbl	75 degF	Cement Circulated to Surface? [X]	Volume 29.0 bbl
				Washed Thru Perfs [ ]	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
COMPANY MAN	BRIAN FOOTE	-	-

Casing Offload Tally

Well Name: TIMMY MINCH OHI 10 **Surface, Set Depth: 530.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003360000	4001164286	SWN PRODUCTION COMPANY L...	1,208.10	25.90	1,234.00 KB1,6/28/2016 07:07	
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Conductor Set

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Surface	530.00	

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	13.375	54.50		Yes	2.63	No	Innovex Eccentric float shoe		527.4	2.63
2	1	Casing Joints	13.375	54.50	J-55	Yes	40.64	Yes	BS 1		486.7	43.27
3		Casing Joints	13.375	54.50	J-55	Yes	20.06	No	Pup Joint		466.7	63.33
4		Float Collar	13.375	54.50		Yes	1.52	No	Innovex float collar		465.2	64.85
5		Casing Joints	13.375	54.50	J-55	Yes	9.60	No	Pup Joint		455.6	74.45
6	2	Casing Joints	13.375	54.50	J-55	Yes	40.07	Yes	BS 2 with Cement Basket		415.5	114.52
7		Stage Tool	13.375	54.50		Yes	19.69	No	Innovex DV tool PKR		395.8	134.21
8		Casing Pup Joint	13.375	54.50		Yes	7.81	No	Pup joint on DV tool		388.0	142.02
9	3	Casing Joints	13.375	54.50	J-55	Yes	41.55	Yes	BS 3		346.4	183.57
10	4	Casing Joints	13.375	54.50	J-55	Yes	41.54	Yes	BS 4		304.9	225.11
11	5	Casing Joints	13.375	54.50	J-55	Yes	37.48	No			267.4	262.59
12	6	Casing Joints	13.375	54.50	J-55	Yes	41.54	Yes	BS 5		225.9	304.13
13	7	Casing Joints	13.375	54.50	J-55	Yes	41.56	No			184.3	345.69
14	8	Casing Joints	13.375	54.50	J-55	Yes	41.53	Yes	BS 6		142.8	387.22
15	9	Casing Joints	13.375	54.50	J-55	Yes	41.57	No			101.2	428.79
16	10	Casing Joints	13.375	54.50	J-55	Yes	41.56	Yes	BS 7		59.6	470.35
17		Casing Joints	13.375	54.50	J-55	Yes	20.71	No	Pup Joint		38.9	491.06
18		Mandrel Hanger	13.375	54.50		Yes	1.20	No	Mandrel Hanger		37.7	492.26
19		Landing Joint	13.375	54.50		Yes	39.00	No	Landing joint		-1.3	531.26
16	11	Casing Joints	13.375	54.50	J-55	No	39.21	No	Out #1		36.4	509.56
	12	Casing Joints	13.375	54.50	J-55	No	41.55	No	OUT #2			
	13	Casing Joints	13.375	54.50	J-55	No	41.53	No	OUT #3			
	14	Casing Joints	13.375	54.50	J-55	No	41.54	No	OUT #4			
	15	Casing Joints	13.375	54.50	J-55	No	41.53	No	OUT #5			
	16	Casing Joints	13.375	54.50	J-55	No	39.21	No	OUT #6			
	17	Casing Joints	13.375	54.50	J-55	No	41.54	No	OUT #7			
		Casing Joints	13.375	54.50	J-55	No	9.62	No	Pup Joint			

INNOVEX

109 N. Madison Ave
Grove City, Pa 16127
724-605-1397

START DATE: 6/23/2022 FINISH DATE: 6/23/2022

CUSTOMER: SWN PRODUCTION COMPANY

CUSTOMER REP: WADE GRAY / BRYAN TRAHAN

LEASE / WELL: TIMMY MINCH OHI / 210H

CLOSEST CITY: WHEELING

COUNTY: OHIO STATE: WEST VIRGINIA

DRILLING RIG: SWN SDC 40

RIG EMAIL: SDC40@SWN.COM

RIG PHONE NUMBER: 724-231-3543

AFE: 1009077

CEMENT CO: SCHLUMBERGER

CASING CO: COSTY'S

INNOVEX REP: IAN STEFANISZYN

CELL: 814-657-8205

E-MAIL: IAN.STEFANSZYN@INNOVEX-INC.COM

INNOVEX

Date:	6/23/2022	Rig:	SWN SDC 40
Customer:	SWN PRODUCTION COMPANY	Service Rep:	IAN STEFANISZYN
Co Rep:	WADE GRAY / BRYAN TRAHAN	Casing Co. :	COSTY'S
Lease/Well:	TIMMY MINCH OHI / 210H	Cement Co. :	SCHLUMBERGER
Closest City:	WHEELING	AFE/API:	1009077

HOLE INFO		TOOL INFO		CASING INFO					
					Top	Bottom		Top	Bottom
Hole Depth (ft):	576	Element OD (in):	15.25	Size:	13 3/8		Burst:	2730	
Open Hole Size (in):	17.5	Element Length (ft):	10	Weight:	54.5		80% Burst:	2184	
Mud Wt (#/gal):	8.4	ICP Opening PSI:	1200	Grade:	J55		Capacity:	0.15459	
Mud Type:	H20	ICP Closing PSI:	730	Thread:	BTC		Previous Csg Size:		20
Dev @ TD:		Stage Tool Open PSI:	450	ID:	12.615		Prev. Csg Wt (#/ft):		94
TVD:		Stage Tool Close PSI:	1000	Casing Depth:	556		Previous Csg Depth:		136
Annular Fill (ft/bbl):	8.083			***MAKE CASING DEPTH EQUAL HOLE DEPTH***					

TOOLS AND EQUIPMENT

(All tools and equipment - manufactuer, type, part or serial numbers with batch reference number)

	Part Number	SO# or Serial #
Float Shoe:	315-340-0100-0006	49733
Float Collar:	350-340-0100-0006-BB	18935
Baffle:		
Stage Tool #1:	500-340-0309-0006-CI	55035
Stage Tool #2:		
Plug Set #1:		
Plug Set #2:		
Packer #1:	01-1338-A01-L-54.5/48-N-BTC	140523-02
Packer #2:		
Contigency Collar:		
Contingency Cone:		
Cancellation Cone:		

CENTRALIZER INFO

		Type	Manufacturer (if known)
Centralizers Above ICP/DV:	#1	Hinged Bowspring	SUMMIT
	#2		
Centralizers Below ICP/DV:	#1	Hinged Bowspring	SUMMIT
	#2		

CEMENT INFO

1st Spacer Volume (bbls)	Type Addatives:	Weight:			BBLS:
25	GEL SPACER	8.6			25
1st Lead Sx	Type Addatives:	Yield:	Weight:		BBLS:
					0
1st Tail Sx	Type/Addatives:	Yield:	Weight:		BBLS:
160	CEMENT	1.19	15.6		34
2nd Spacer Volume (bbls)	Type Addatives:	Weight:			BBLS:
	GEL SPACER				0
2nd Lead Sx	Type / Addatives:	Yield:	Weight:		BBLS:
					0
2nd Tail Sx	Type / Addatives:	Yield:	Weight:		BBLS:
410	CEMENT	1.19	15.6		87
3rd Spacer Volume (bbls)	Type Addatives:	Weight:			BBLS:
					0
3rd Lead Sx	Type / Addatives:	Yield:	Weight:		BBLS:
					0
3rd Tail Sx	Type / Addatives:	Yield:	Weight:		BBLS:
					0

DISPLACEMENT

1st Stage	Fluid:	H2O	Calculated Bbls	76	Actual Bbls	76
2nd Stage	Fluid:	H2O	Calculated Bbls	63	Actual Bbls	63
3rd Stage	Fluid:		Calculated Bbls		Actual Bbls	

DISPLACEMENT INFO

1st Stage	Returns?	No Returns	Bump Plug?	Yes	Max Pump Rate (bpm):	6.60
2nd Stage	Returns?	Full Returns	Bump Plug?	Yes	Max Pump Rate (bpm):	6.60
3rd Stage	Returns?		Bump Plug?		Max Pump Rate (bpm):	

INNOVEX

AS RUN

Customer:	SWN PRODUCTION COMPANY	**Casing Size:**	13 3/8 **Weight:** 54.5
Well:	TIMMY MINCH OHI / 210H	**Grade:**	J55
County:	OHIO **State:** EST VIRGINIA	**Thread:**	BTC
Rig:	SWN SDC 40	**ID:**	12.615
Date:	6/23/2022	**Service Rep:**	IAN STEFANISZYN

Schematic	Description	Length	Top Depth	BBLS
	Stickup Above Floor	3.40	-3.40	0.00
	9 Joints Casing 13.375 54.5# BTC J55	404.00	0.00	0.53
	8' Pup Joint 13.375 54.5# BTC J55	7.47	404.00	62.98
	2 Stage Mechanical Stage Tool w/ Composite Seat Opening PSI: 450 Closing PSI: 1000 Actual PSI: 600 Actual PSI: 1405	2.69	411.47	64.14
	11.25" OD Inflateable Casing Packer; 10' Element Opening PSI: 1200 Closing PSI: 730 Actual PSI: 1100 Actual PSI: N/A Pressure Drop: 3330 Inflate Volume: 1	17.00	414.16	64.55
	1 Joints Casing / Pup Joint 13.375 54.5# BTC J55	62.00	431.16	67.18
		0.00	493.16	76.76
	Joints Casing	0.00	493.16	76.76
	Float Collar	1.47	493.16	76.76
	1 Joints Casing / Pup Joint 13.375 54.5# BTC J55	59.65	494.63	76.99
	Float Shoe	1.81	554.28	86.21
	Off Bottom	20.00	556.09	#VALUE!
	Well TD		576.00	

INNOVEX

JOB LOG

Customer: SWN PRODUCTION COMPANY
Well: TIMMY MINCH OHI / 210H
Service Supervisor: IAN STEFANISZYN
Rig: SWN SDC 40

DATE	TIME	RATE	PSI	DESCRIPTION	VOLUME
6/23/22	1:15 AM			LEAVE GROVE CITY	
	4:15 AM			ARRIVE ON LOCATION	
	4:30 AM			CHECK EQUIPMENT	
	5:00 AM			COSTY'S ARRIVES	
	4:55 AM			RE-PIN PACKER OPENING PIN PRESSURE TO **1200 PSI**	
	10:00 AM			R/U COSTY'S	
	10:56 AM			SAFETY MEETING WITH SWN AND COSTY'S	
	11:14 AM		12000	M/U FLOAT SHOE	
	11:30 AM		12000	M/U FLOAT COLLAR / CEMENT BASKET ABOVE	
	11:37 AM			M/U CEMENT BASKET PUP JOINT #2	
	11:43 AM		6500	M/U PACKER/STAGE TOOL ASSEMBLY	
	12:46 PM			LAND CASING	
				R/D COSTY'S	
	1:15 PM			R/U SCHLUMBERGER	
	2:35 PM			SAFETY MEETING	
	2:47 PM			FILL LINES	5 BBLS
	2:50 PM		3262	PRESSURE TEST	
	2:58 PM	8.3 BPM	265	CIRCULATE	200 BBLS
	3:30 PM	4.6 BPM	90	8.6# GEL SPACER	25 BBLS
	3:30 PM	4.6 BPM	210	15.6# TAIL CEMENT	34 BBLS
	3:38 PM			SHUT DOWN / DROP FLEX PLUG	
	3:43 PM	6.6 BPM		DISPLACE WITH 8.4# H2O	76.2 BBLS
	3:58 PM	3.7 BPM	80-610	BUMP PLUG +500	
	4:03 PM	1 BPM	600-1100	PRESSURE UP TO INFLATE PACKER	
				PACKER TAKES ON FLUID - PRESSURE UP IN STAGES TO KEEP PRESSURE	
				FROM FALLING BELOW 900 PSI	
	4:06 PM		1711	PRESSURE STABALIZES / HOLD	
	4:07 PM		1711-600	BLEED BACK TO BUMP +500 - **1 BBL LOST TO PACKER**	
	4:09 PM		600-1338	PRESSURE UP TO ENSURE PACKER IS FULLY INFLATED - YES	
	4:11 PM		1338-0	BLEED BACK ALL - **1 BBL RETURNED**	
	4:15 PM			DROP FFOC / WAIT 5 MINUTES	
	4:30 PM		600	OPEN STAGE TOOL / PUMP 8.4# FRESH WATER ESTABLISH CIRCULATION	10 BBLS
	4:40 PM	5.3 BPM	260	15.6# TAIL CEMENT	87 BBLS
	4:59 PM			SHUT DOWN / DROP CLOSING PLUG	
	5:05 PM	6.6 BPM		DISPLACE WITH 8.4# H2O	63.5 BBLS

	5:18 PM	3.3 BPM	220 - 1405	BUMP PLUG +1000 / HOLD 5 MINUTES	
	5:23 PM		1405-0	BLEED BACK ALL - **1/2 BBL RETURNED**	
				JOB COMPLETE	
	5:30 PM			PAPERWORK	
	6:15 PM			TICKET SIGNED / LEAVE LOCATION	
	8:30:00 PM			ARRIVE IN GROVE CITY	

Casing Offload Tally

Well Name: TIMMY MINCH OHI 210 **Production, Set Depth: 19,857.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003370000	4001164289	SWN PRODUCTION COMPANY L...	1,208.20	25.80	1,234.00 KB1,6/28/2016 07:12	6/22/2022 22:45
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Production	19,857.00	7/2/2022 21:15

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	5.500	20.00		Yes	1.38	No	Varel Double Float shoe		19,855.6	1.38
2	1	Casing Joints	5.500	20.00	P-110 HP	Yes	43.84	Yes	CDC total string 2 x SBBS 8.25"		19,811.8	45.22
3		Foat Collar	5.500	20.00	P-110 EC	Yes	1.86	No	Weatherford float collar		19,809.9	47.08
4	2	Casing Joints	5.500	20.00	P-110 HP	Yes	43.94	No			19,766.0	91.02
5		Toe Sleeve	5.500	20.00		Yes	3.58	No	Wellbose Toe Sleeve 10k		19,762.4	94.60
6	3	Casing Joints	5.500	20.00	P-110 HP	Yes	42.56	No			19,719.8	137.16
7		Toe Sleeve	5.500	20.00		Yes	3.58	No	Wellbose Toe Sleeve 10k		19,716.3	140.74
8	4	Casing Joints	5.500	20.00	P-110 HP	Yes	40.35	Yes	8.25" SBBS 3		19,675.9	181.09
9		Toe Sleeve	5.500	20.00		Yes	3.58	No	Wellbose Toe Sleeve 10k		19,672.3	184.67
10	5	Casing Joints	5.500	20.00	P-110 HP	Yes	44.19	Yes	8.25" SBBS		19,628.1	228.86
11	6	Casing Joints	5.500	20.00	P-110 HP	Yes	42.46	Yes	8.25" SBBS 5		19,585.7	271.32
12	7	Casing Joints	5.500	20.00	P-110 HP	Yes	42.35	Yes	8.25" SBBS		19,543.3	313.67
13	8	Casing Joints	5.500	20.00	P-110 HP	Yes	42.06	Yes	8.25" SBBS		19,501.3	355.73
14	9	Casing Joints	5.500	20.00	P-110 HP	Yes	38.91	Yes	8.25" SBBS		19,462.4	394.64
15	10	Casing Joints	5.500	20.00	P-110 HP	Yes	43.91	Yes	8.25" SBBS		19,418.5	438.55
16	11	Casing Joints	5.500	20.00	P-110 HP	Yes	44.02	Yes	8.25" SBBS 10		19,374.4	482.57
17	12	Casing Joints	5.500	20.00	P-110 HP	Yes	44.22	Yes	8.25" SBBS		19,330.2	526.79
18	13	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS		19,286.0	571.00
19	14	Casing Joints	5.500	20.00	P-110 HP	Yes	42.44	Yes	8.25" SBBS		19,243.6	613.44
20	15	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS		19,199.4	657.65
21	16	Casing Joints	5.500	20.00	P-110 HP	Yes	41.78	Yes	8.25" SBBS		19,157.6	699.43
22	17	Casing Joints	5.500	20.00	P-110 HP	Yes	41.55	Yes	8.25" SBBS		19,116.0	740.98
23	18	Casing Joints	5.500	20.00	P-110 HP	Yes	44.40	Yes	8.25" SBBS		19,071.6	785.38
24	19	Casing Joints	5.500	20.00	P-110 HP	Yes	41.87	Yes	8.25" SBBS		19,029.8	827.25
25	20	Casing Joints	5.500	20.00	P-110 HP	Yes	42.78	Yes	8.25" SBBS		18,987.0	870.03
26	21	Casing Joints	5.500	20.00	P-110 HP	Yes	44.51	Yes	8.25" SBBS 20		18,942.5	914.54
27	22	Casing Joints	5.500	20.00	P-110 HP	Yes	42.06	Yes	8.25" SBBS		18,900.4	956.60
28	23	Casing Joints	5.500	20.00	P-110 HP	Yes	43.81	Yes	8.25" SBBS		18,856.6	1,000.41
29	24	Casing Joints	5.500	20.00	P-110 HP	Yes	44.39	Yes	8.25" SBBS		18,812.2	1,044.80
30	25	Casing Joints	5.500	20.00	P-110 HP	Yes	43.46	Yes	8.25" SBBS		18,768.7	1,088.26
31	26	Casing Joints	5.500	20.00	P-110 HP	Yes	43.86	Yes	8.25" SBBS		18,724.9	1,132.12
32	27	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.25" SBBS		18,680.6	1,176.42
33	28	Casing Joints	5.500	20.00	P-110 HP	Yes	43.84	Yes	8.25" SBBS		18,636.7	1,220.26
34	29	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		18,592.3	1,264.67
35	30	Casing Joints	5.500	20.00	P-110 HP	Yes	44.17	Yes	8.25" SBBS		18,548.2	1,308.84
36	31	Casing Joints	5.500	20.00	P-110 HP	Yes	44.25	Yes	8.25" SBBS 30		18,503.9	1,353.09
37	32	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	Yes	8.25" SBBS		18,459.7	1,397.29

Casing Offload Tally

Well Name: TIMMY MINCH OHI 210 **Production, Set Depth: 19,857.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003370000	4001164289	SWN PRODUCTION COMPANY L...	1,208.20	25.80	1,234.00 KB1,6/28/2016 07:12	6/22/2022 22:45
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
38	33	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	Yes	8.25" SBBS		18,415.5	1,441.49
39	34	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS		18,371.3	1,485.70
40	35	Casing Joints	5.500	20.00	P-110 HP	Yes	43.93	Yes	8.25" SBBS		18,327.4	1,529.63
41	36	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	Yes	8.25" SBBS		18,282.9	1,574.06
42	37	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS		18,238.7	1,618.27
43	38	Casing Joints	5.500	20.00	P-110 HP	Yes	44.03	Yes	8.25" SBBS		18,194.7	1,662.30
44	39	Casing Joints	5.500	20.00	P-110 HP	Yes	42.26	Yes	8.25" SBBS		18,152.4	1,704.56
45	40	Casing Joints	5.500	20.00	P-110 HP	Yes	38.25	Yes	8.25" SBBS		18,114.2	1,742.81
46	41	Casing Joints	5.500	20.00	P-110 HP	Yes	40.69	Yes	8.25" SBBS 40		18,073.5	1,783.50
47	42	Casing Joints	5.500	20.00	P-110 HP	Yes	41.49	Yes	8.25" SBBS		18,032.0	1,824.99
48	43	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	Yes	8.25" SBBS		17,987.8	1,869.19
49	44	Casing Joints	5.500	20.00	P-110 HP	Yes	43.28	Yes	8.25" SBBS		17,944.5	1,912.47
50	45	Casing Joints	5.500	20.00	P-110 HP	Yes	39.06	Yes	8.25" SBBS		17,905.5	1,951.53
51	46	Casing Joints	5.500	20.00	P-110 HP	Yes	42.02	Yes	8.25" SBBS		17,863.5	1,993.55
52	47	Casing Joints	5.500	20.00	P-110 HP	Yes	43.16	Yes	8.25" SBBS		17,820.3	2,036.71
53	48	Casing Joints	5.500	20.00	P-110 HP	Yes	39.08	Yes	8.25" SBBS		17,781.2	2,075.79
54	49	Casing Joints	5.500	20.00	P-110 HP	Yes	43.39	Yes	8.25" SBBS		17,737.8	2,119.18
55	50	Casing Joints	5.500	20.00	P-110 HP	Yes	44.07	Yes	8.25" SBBS		17,693.8	2,163.25
56	51	Casing Joints	5.500	20.00	P-110 HP	Yes	41.52	Yes	8.25" SBBS 50		17,652.2	2,204.77
57	52	Casing Joints	5.500	20.00	P-110 HP	Yes	43.77	Yes	8.25" SBBS		17,608.5	2,248.54
58	53	Casing Joints	5.500	20.00	P-110 HP	Yes	41.42	Yes	8.25" SBBS		17,567.0	2,289.96
59	54	Casing Joints	5.500	20.00	P-110 HP	Yes	42.24	Yes	8.25" SBBS		17,524.8	2,332.20
60	55	Casing Joints	5.500	20.00	P-110 HP	Yes	42.90	Yes	8.25" SBBS		17,481.9	2,375.10
61	56	Casing Joints	5.500	20.00	P-110 HP	Yes	42.54	Yes	8.25" SBBS		17,439.4	2,417.64
62	57	Casing Joints	5.500	20.00	P-110 HP	Yes	42.24	Yes	8.25" SBBS		17,397.1	2,459.88
63	58	Casing Joints	5.500	20.00	P-110 HP	Yes	42.54	Yes	8.25" SBBS		17,354.6	2,502.42
64	59	Casing Joints	5.500	20.00	P-110 HP	Yes	41.62	Yes	8.25" SBBS		17,313.0	2,544.04
65	60	Casing Joints	5.500	20.00	P-110 HP	Yes	42.53	Yes	8.25" SBBS		17,270.4	2,586.57
66	61	Casing Joints	5.500	20.00	P-110 HP	Yes	42.97	Yes	8.25" SBBS 60		17,227.5	2,629.54
67	62	Casing Joints	5.500	20.00	P-110 HP	Yes	40.16	Yes	8.25" SBBS		17,187.3	2,669.70
68	63	Casing Joints	5.500	20.00	P-110 HP	Yes	41.33	Yes	8.25" SBBS		17,146.0	2,711.03
69	64	Casing Joints	5.500	20.00	P-110 HP	Yes	42.24	Yes	8.25" SBBS		17,103.7	2,753.27
70	65	Casing Joints	5.500	20.00	P-110 HP	Yes	44.19	Yes	8.25" SBBS		17,059.5	2,797.46
71	66	Casing Joints	5.500	20.00	P-110 HP	Yes	41.35	Yes	8.25" SBBS		17,018.2	2,838.81
72	67	Casing Joints	5.500	20.00	P-110 HP	Yes	44.51	Yes	8.25" SBBS		16,973.7	2,883.32
73	68	Casing Joints	5.500	20.00	P-110 HP	Yes	39.69	Yes	8.25" SBBS		16,934.0	2,923.01
74	69	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		16,889.6	2,967.42
75	70	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		16,845.2	3,011.83
76	71	Casing Joints	5.500	20.00	P-110 HP	Yes	43.21	Yes	8.25" SBBS 70		16,802.0	3,055.04
77	72	Casing Joints	5.500	20.00	P-110 HP	Yes	44.01	Yes	8.25" SBBS		16,758.0	3,099.05
78	73	Casing Joints	5.500	20.00	P-110 HP	Yes	42.24	Yes	8.25" SBBS		16,715.7	3,141.29

Casing Offload Tally

Well Name: TIMMY MINCH OHI 210 **Production, Set Depth: 19,857.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003370000	4001164289	SWN PRODUCTION COMPANY L...	1,208.20	25.80	1,234.00 KB1,6/28/2016 07:12	6/22/2022 22:45
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
79	74	Casing Joints	5.500	20.00	P-110 HP	Yes	42.29	Yes	8.25" SBBS		16,673.4	3,183.58
80	75	Casing Joints	5.500	20.00	P-110 HP	Yes	43.51	Yes	8.25" SBBS		16,629.9	3,227.09
81	76	Casing Joints	5.500	20.00	P-110 HP	Yes	42.55	Yes	8.25" SBBS		16,587.4	3,269.64
82	77	Casing Joints	5.500	20.00	P-110 HP	Yes	41.33	Yes	8.25" SBBS		16,546.0	3,310.97
83	78	Casing Joints	5.500	20.00	P-110 HP	Yes	42.24	Yes	8.25" SBBS		16,503.8	3,353.21
84	79	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	Yes	8.25" SBBS		16,459.6	3,397.41
85	80	Casing Joints	5.500	20.00	P-110 HP	Yes	42.90	Yes	8.25" SBBS		16,416.7	3,440.31
86	81	Casing Joints	5.500	20.00	P-110 HP	Yes	43.22	Yes	8.25" SBBS 80		16,373.5	3,483.53
87	82	Casing Joints	5.500	20.00	P-110 HP	Yes	43.86	Yes	8.25" SBBS		16,329.6	3,527.39
88	83	Casing Joints	5.500	20.00	P-110 HP	Yes	41.46	Yes	8.25" SBBS		16,288.2	3,568.85
89	84	Casing Joints	5.500	20.00	P-110 HP	Yes	42.89	Yes	8.25" SBBS		16,245.3	3,611.74
90	85	Casing Joints	5.500	20.00	P-110 HP	Yes	42.86	Yes	8.25" SBBS		16,202.4	3,654.60
91	86	Casing Joints	5.500	20.00	P-110 HP	Yes	42.25	Yes	8.25" SBBS		16,160.2	3,696.85
92	87	Casing Joints	5.500	20.00	P-110 HP	Yes	37.58	Yes	8.25" SBBS		16,122.6	3,734.43
93	88	Casing Joints	5.500	20.00	P-110 HP	Yes	44.65	Yes	8.25" SBBS		16,077.9	3,779.08
94	89	Casing Joints	5.500	20.00	P-110 HP	Yes	44.44	Yes	8.25" SBBS		16,033.5	3,823.52
95	90	Casing Joints	5.500	20.00	P-110 HP	Yes	42.53	Yes	8.25" SBBS		15,991.0	3,866.05
96	91	Casing Joints	5.500	20.00	P-110 HP	Yes	44.32	Yes	8.25" SBBS 90		15,946.6	3,910.37
97	92	Casing Joints	5.500	20.00	P-110 HP	Yes	42.25	Yes	8.25" SBBS		15,904.4	3,952.62
98	93	Casing Joints	5.500	20.00	P-110 HP	Yes	40.58	Yes	8.25" SBBS		15,863.8	3,993.20
99	94	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS		15,819.4	4,037.62
100	95	Casing Joints	5.500	20.00	P-110 HP	Yes	44.32	Yes	8.25" SBBS		15,775.1	4,081.94
101	96	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS		15,730.6	4,126.36
102	97	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	Yes	8.25" SBBS		15,686.2	4,170.79
103	98	Casing Joints	5.500	20.00	P-110 HP	Yes	43.14	Yes	8.25" SBBS		15,643.1	4,213.93
104	99	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS		15,598.9	4,258.14
105	100	Casing Joints	5.500	20.00	P-110 HP	Yes	44.48	Yes	8.25" SBBS		15,554.4	4,302.62
106	101	Casing Joints	5.500	20.00	P-110 HP	Yes	44.22	Yes	8.25" SBBS 100		15,510.2	4,346.84
107	102	Casing Joints	5.500	20.00	P-110 HP	Yes	44.31	Yes	8.25" SBBS		15,465.9	4,391.15
108	103	Casing Joints	5.500	20.00	P-110 HP	Yes	44.72	Yes	8.25" SBBS		15,421.1	4,435.87
109		Marker Joint	5.500	20.00		Yes	20.68	Yes	Marker joint #1 8.25" SBBS		15,400.5	4,456.55
110	104	Casing Joints	5.500	20.00	P-110 HP	Yes	44.50	Yes	8.25" SBBS		15,356.0	4,501.05
111	105	Casing Joints	5.500	20.00	P-110 HP	Yes	44.45	Yes	8.25" SBBS		15,311.5	4,545.50
112	106	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		15,267.1	4,589.91
113	107	Casing Joints	5.500	20.00	P-110 HP	Yes	44.46	Yes	8.25" SBBS		15,222.6	4,634.37
114	108	Casing Joints	5.500	20.00	P-110 HP	Yes	44.48	Yes	8.25" SBBS		15,178.2	4,678.85
115	109	Casing Joints	5.500	20.00	P-110 HP	Yes	42.40	Yes	8.25" SBBS		15,135.8	4,721.25
116	110	Casing Joints	5.500	20.00	P-110 HP	Yes	34.66	Yes	8.25" SBBS 110		15,101.1	4,755.91
117	111	Casing Joints	5.500	20.00	P-110 HP	Yes	44.22	Yes	8.25" SBBS		15,056.9	4,800.13
118	112	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS		15,012.5	4,844.55

Casing Offload Tally

Well Name: TIMMY MINCH OHI 210 **Production, Set Depth: 19,857.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003370000	4001164289	SWN PRODUCTION COMPANY L...	1,208.20	25.80	1,234.00 KB1,6/28/2016 07:12	6/22/2022 22:45
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
119	113	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		14,968.0	4,888.96
120	114	Casing Joints	5.500	20.00	P-110 HP	Yes	44.01	Yes	8.25" SBBS		14,924.0	4,932.97
121	115	Casing Joints	5.500	20.00	P-110 HP	Yes	44.23	Yes	8.25" SBBS		14,879.8	4,977.20
122	116	Casing Joints	5.500	20.00	P-110 HP	Yes	42.26	Yes	8.25" SBBS		14,837.5	5,019.46
123	117	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	Yes	8.25" SBBS		14,793.1	5,063.89
124	118	Casing Joints	5.500	20.00	P-110 HP	Yes	44.16	Yes	8.25" SBBS		14,749.0	5,108.05
125	119	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	Yes	8.25" SBBS		14,704.8	5,152.25
126	120	Casing Joints	5.500	20.00	P-110 HP	Yes	44.48	Yes	8.25" SBBS 120		14,660.3	5,196.73
127	121	Casing Joints	5.500	20.00	P-110 HP	Yes	44.29	Yes	8.25" SBBS		14,616.0	5,241.02
128	122	Casing Joints	5.500	20.00	P-110 HP	Yes	41.70	Yes	8.25" SBBS		14,574.3	5,282.72
129	123	Casing Joints	5.500	20.00	P-110 HP	Yes	44.46	Yes	8.25" SBBS		14,529.8	5,327.18
130	124	Casing Joints	5.500	20.00	P-110 HP	Yes	44.40	Yes	8.25" SBBS		14,485.4	5,371.58
131	125	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS		14,441.0	5,416.00
132	126	Casing Joints	5.500	20.00	P-110 HP	Yes	44.35	Yes	8.25" SBBS		14,396.7	5,460.35
133	127	Casing Joints	5.500	20.00	P-110 HP	Yes	44.32	Yes	8.25" SBBS		14,352.3	5,504.67
134	128	Casing Joints	5.500	20.00	P-110 HP	Yes	41.74	Yes	8.25" SBBS		14,310.6	5,546.41
135	129	Casing Joints	5.500	20.00	P-110 HP	Yes	44.18	Yes	8.25" SBBS		14,266.4	5,590.59
136	130	Casing Joints	5.500	20.00	P-110 HP	Yes	43.13	Yes	8.25" SBBS 130		14,223.3	5,633.72
137	131	Casing Joints	5.500	20.00	P-110 HP	Yes	44.46	Yes	8.25" SBBS		14,178.8	5,678.18
138	132	Casing Joints	5.500	20.00	P-110 HP	Yes	44.23	Yes	8.25" SBBS		14,134.6	5,722.41
139	133	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	Yes	8.25" SBBS		14,090.2	5,766.84
140	134	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.25" SBBS		14,045.9	5,811.14
141	135	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	Yes	8.25" SBBS		14,001.7	5,855.34
142	136	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS		13,957.5	5,899.55
143	137	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		13,913.0	5,943.96
144	138	Casing Joints	5.500	20.00	P-110 HP	Yes	44.56	Yes	8.25" SBBS		13,868.5	5,988.52
145	139	Casing Joints	5.500	20.00	P-110 HP	Yes	44.40	Yes	8.25" SBBS		13,824.1	6,032.92
146	140	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS 140		13,779.7	6,077.34
147	141	Casing Joints	5.500	20.00	P-110 HP	Yes	44.65	Yes	8.25" SBBS		13,735.0	6,121.99
148	142	Casing Joints	5.500	20.00	P-110 HP	Yes	44.46	Yes	8.25" SBBS		13,690.6	6,166.45
149	143	Casing Joints	5.500	20.00	P-110 HP	Yes	38.82	Yes	8.25" SBBS		13,651.7	6,205.27
150	144	Casing Joints	5.500	20.00	P-110 HP	Yes	40.08	Yes	8.25" SBBS		13,611.7	6,245.35
151	145	Casing Joints	5.500	20.00	P-110 HP	Yes	41.43	Yes	8.25" SBBS		13,570.2	6,286.78
152	146	Casing Joints	5.500	20.00	P-110 HP	Yes	42.44	Yes	8.25" SBBS		13,527.8	6,329.22
153	147	Casing Joints	5.500	20.00	P-110 HP	Yes	44.22	Yes	8.25" SBBS		13,483.6	6,373.44
154	148	Casing Joints	5.500	20.00	P-110 HP	Yes	43.84	Yes	8.25" SBBS		13,439.7	6,417.28
155	149	Casing Joints	5.500	20.00	P-110 HP	Yes	41.98	Yes	8.25" SBBS		13,397.7	6,459.26
156	150	Casing Joints	5.500	20.00	P-110 HP	Yes	40.82	Yes	8.25" SBBS 150		13,356.9	6,500.08
157	151	Casing Joints	5.500	20.00	P-110 HP	Yes	44.46	Yes	8.25" SBBS		13,312.5	6,544.54
158	152	Casing Joints	5.500	20.00	P-110 HP	Yes	43.19	Yes	8.25" SBBS		13,269.3	6,587.73
159	153	Casing Joints	5.500	20.00	P-110 HP	Yes	44.37	Yes	8.25" SBBS		13,224.9	6,632.10

Casing Offload Tally

Well Name: TIMMY MINCH OHI 210 **Production, Set Depth: 19,857.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003370000	4001164289	SWN PRODUCTION COMPANY L...	1,208.20	25.80	1,234.00 KB1,6/28/2016 07:12	6/22/2022 22:45
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
160	154	Casing Joints	5.500	20.00	P-110 HP	Yes	44.44	Yes	8.25" SBBS		13,180.5	6,676.54
161	155	Casing Joints	5.500	20.00	P-110 HP	Yes	38.06	Yes	8.25" SBBS		13,142.4	6,714.60
162	156	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		13,098.0	6,759.01
163	157	Casing Joints	5.500	20.00	P-110 HP	Yes	42.23	Yes	8.25" SBBS		13,055.8	6,801.24
164	158	Casing Joints	5.500	20.00	P-110 HP	Yes	44.37	Yes	8.25" SBBS		13,011.4	6,845.61
165	159	Casing Joints	5.500	20.00	P-110 HP	Yes	42.49	Yes	8.25" SBBS		12,968.9	6,888.10
166	160	Casing Joints	5.500	20.00	P-110 HP	Yes	44.15	Yes	8.25" SBBS 160		12,924.8	6,932.25
167	161	Casing Joints	5.500	20.00	P-110 HP	Yes	44.46	Yes	8.25" SBBS		12,880.3	6,976.71
168	162	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		12,835.9	7,021.12
169	163	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		12,791.5	7,065.53
170	164	Casing Joints	5.500	20.00	P-110 HP	Yes	44.40	Yes	8.25" SBBS		12,747.1	7,109.93
171	165	Casing Joints	5.500	20.00	P-110 HP	Yes	44.03	Yes	8.25" SBBS		12,703.0	7,153.96
172	166	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS		12,658.6	7,198.38
173	167	Casing Joints	5.500	20.00	P-110 HP	Yes	44.03	Yes	8.25" SBBS		12,614.6	7,242.41
174	168	Casing Joints	5.500	20.00	P-110 HP	Yes	42.40	Yes	8.25" SBBS		12,572.2	7,284.81
175	169	Casing Joints	5.500	20.00	P-110 HP	Yes	44.05	Yes	8.25" SBBS		12,528.1	7,328.86
176	170	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS 170		12,483.9	7,373.07
177	171	Casing Joints	5.500	20.00	P-110 HP	Yes	44.54	Yes	8.25" SBBS		12,439.4	7,417.61
178	172	Casing Joints	5.500	20.00	P-110 HP	Yes	43.81	Yes	8.25" SBBS		12,395.6	7,461.42
179	173	Casing Joints	5.500	20.00	P-110 HP	Yes	41.23	Yes	8.25" SBBS		12,354.4	7,502.65
180	174	Casing Joints	5.500	20.00	P-110 HP	Yes	44.45	Yes	8.25" SBBS		12,309.9	7,547.10
181	175	Casing Joints	5.500	20.00	P-110 HP	Yes	44.37	Yes	8.25" SBBS		12,265.5	7,591.47
182	176	Casing Joints	5.500	20.00	P-110 HP	Yes	41.43	Yes	8.25" SBBS		12,224.1	7,632.90
183	177	Casing Joints	5.500	20.00	P-110 HP	Yes	44.38	Yes	8.25" SBBS		12,179.7	7,677.28
184	178	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		12,135.3	7,721.69
185	179	Casing Joints	5.500	20.00	P-110 HP	Yes	44.05	Yes	8.25" SBBS		12,091.3	7,765.74
186	180	Casing Joints	5.500	20.00	P-110 HP	Yes	42.33	Yes	8.25" SBBS 180		12,048.9	7,808.07
187	181	Casing Joints	5.500	20.00	P-110 HP	Yes	44.40	Yes	8.25" SBBS		12,004.5	7,852.47
188	182	Casing Joints	5.500	20.00	P-110 HP	Yes	41.97	Yes	8.25" SBBS		11,962.6	7,894.44
189	183	Casing Joints	5.500	20.00	P-110 HP	Yes	44.07	Yes	8.25" SBBS		11,918.5	7,938.51
190	184	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		11,874.1	7,982.92
191	185	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	Yes	8.25" SBBS		11,829.9	8,027.12
192	186	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	Yes	8.25" SBBS		11,785.7	8,071.32
193	187	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	Yes	8.25" SBBS		11,741.3	8,115.75
194	188	Casing Joints	5.500	20.00	P-110 HP	Yes	44.14	Yes	8.25" SBBS		11,697.1	8,159.89
195	189	Casing Joints	5.500	20.00	P-110 HP	Yes	42.51	Yes	8.25" SBBS		11,654.6	8,202.40
196	190	Casing Joints	5.500	20.00	P-110 HP	Yes	44.39	Yes	8.25" SBBS 190		11,610.2	8,246.79
197	191	Casing Joints	5.500	20.00	P-110 HP	Yes	44.35	Yes	8.25" SBBS		11,565.9	8,291.14
198	192	Casing Joints	5.500	20.00	P-110 HP	Yes	44.40	Yes	8.25" SBBS		11,521.5	8,335.54
199	193	Casing Joints	5.500	20.00	P-110 HP	Yes	41.35	Yes	8.25" SBBS		11,480.1	8,376.89
200	194	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	Yes	8.25" SBBS		11,435.9	8,421.09

Casing Offload Tally

Well Name: TIMMY MINCH OHI 210 **Production, Set Depth: 19,857.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003370000	4001164289	SWN PRODUCTION COMPANY L...	1,208.20	25.80	1,234.00 KB1,6/28/2016 07:12	6/22/2022 22:45
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
201	195	Casing Joints	5.500	20.00	P-110 HP	Yes	43.98	Yes	8.25" SBBS		11,391.9	8,465.07
202	196	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		11,347.5	8,509.48
203	197	Casing Joints	5.500	20.00	P-110 HP	Yes	41.58	Yes	8.25" SBBS		11,305.9	8,551.06
204	198	Casing Joints	5.500	20.00	P-110 HP	Yes	44.23	Yes	8.25" SBBS		11,261.7	8,595.29
205	199	Casing Joints	5.500	20.00	P-110 HP	Yes	42.35	Yes	8.25" SBBS		11,219.4	8,637.64
206	200	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	Yes	8.25" SBBS 200		11,174.9	8,682.07
207	201	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.25" SBBS		11,130.6	8,726.37
208	202	Casing Joints	5.500	20.00	P-110 HP	Yes	44.22	Yes	8.25" SBBS		11,086.4	8,770.59
209	203	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		11,042.0	8,815.00
210	204	Casing Joints	5.500	20.00	P-110 HP	Yes	44.33	Yes	8.25" SBBS		10,997.7	8,859.33
211		Marker Joint	5.500	20.00		Yes	20.70	Yes	Marker Joint #2 8.25" SBBS		10,977.0	8,880.03
212	205	Casing Joints	5.500	20.00	P-110 HP	Yes	43.14	Yes	8.25" SBBS		10,933.8	8,923.17
213	206	Casing Joints	5.500	20.00	P-110 HP	Yes	44.31	Yes	8.25" SBBS		10,889.5	8,967.48
214	207	Casing Joints	5.500	20.00	P-110 HP	Yes	44.33	Yes	8.25" SBBS		10,845.2	9,011.81
215	208	Casing Joints	5.500	20.00	P-110 HP	Yes	41.88	Yes	8.25" SBBS		10,803.3	9,053.69
216	209	Casing Joints	5.500	20.00	P-110 HP	Yes	44.58	Yes	8.25" SBBS 210		10,758.7	9,098.27
217	210	Casing Joints	5.500	20.00	P-110 HP	Yes	42.20	Yes	8.25" SBBS		10,716.5	9,140.47
218	211	Casing Joints	5.500	20.00	P-110 HP	Yes	44.27	Yes	8.25" SBBS		10,672.3	9,184.74
219	212	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.25" SBBS		10,628.0	9,229.04
220	213	Casing Joints	5.500	20.00	P-110 HP	Yes	40.60	Yes	8.25" SBBS		10,587.4	9,269.64
221	214	Casing Joints	5.500	20.00	P-110 HP	Yes	44.40	Yes	8.25" SBBS		10,543.0	9,314.04
222	215	Casing Joints	5.500	20.00	P-110 HP	Yes	42.57	Yes	8.25" SBBS		10,500.4	9,356.61
223	216	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		10,456.0	9,401.02
224	217	Casing Joints	5.500	20.00	P-110 HP	Yes	43.84	Yes	8.25" SBBS		10,412.1	9,444.86
225	218	Casing Joints	5.500	20.00	P-110 HP	Yes	44.64	Yes	8.25" SBBS		10,367.5	9,489.50
226	219	Casing Joints	5.500	20.00	P-110 HP	Yes	44.64	Yes	8.25" SBBS 220		10,322.9	9,534.14
227	220	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.25" SBBS		10,278.6	9,578.44
228	221	Casing Joints	5.500	20.00	P-110 HP	Yes	42.65	Yes	8.25" SBBS		10,235.9	9,621.09
229	222	Casing Joints	5.500	20.00	P-110 HP	Yes	44.65	Yes	8.25" SBBS		10,191.3	9,665.74
230	223	Casing Joints	5.500	20.00	P-110 HP	Yes	44.32	Yes	8.25" SBBS		10,146.9	9,710.06
231	224	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.25" SBBS		10,102.6	9,754.36
232	225	Casing Joints	5.500	20.00	P-110 HP	Yes	40.22	Yes	8.25" SBBS		10,062.4	9,794.58
233	226	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	Yes	8.25" SBBS		10,018.0	9,839.01
234	227	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	Yes	8.25" SBBS		9,973.6	9,883.44
235	228	Casing Joints	5.500	20.00	P-110 HP	Yes	44.37	Yes	8.25" SBBS		9,929.2	9,927.81
236	229	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS 230		9,885.0	9,972.02
237	230	Casing Joints	5.500	20.00	P-110 HP	Yes	44.48	Yes	8.25" SBBS		9,840.5	10,016.50
238	231	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	Yes	8.25" SBBS		9,796.1	10,060.93
239	232	Casing Joints	5.500	20.00	P-110 HP	Yes	44.60	Yes	8.25" SBBS		9,751.5	10,105.53
240	233	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.25" SBBS		9,707.2	10,149.83

Casing Offload Tally

Well Name: TIMMY MINCH OHI 210 **Production, Set Depth: 19,857.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003370000	4001164289	SWN PRODUCTION COMPANY L...	1,208.20	25.80	1,234.00 KB1,6/28/2016 07:12	6/22/2022 22:45
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
241	234	Casing Joints	5.500	20.00	P-110 HP	Yes	44.23	Yes	8.25" SBBS		9,662.9	10,194.06
242	235	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.25" SBBS		9,618.6	10,238.36
243	236	Casing Joints	5.500	20.00	P-110 HP	Yes	44.39	Yes	8.25" SBBS		9,574.2	10,282.75
244	237	Casing Joints	5.500	20.00	P-110 HP	Yes	44.32	Yes	8.25" SBBS		9,529.9	10,327.07
245	238	Casing Joints	5.500	20.00	P-110 HP	Yes	44.31	Yes	8.25" SBBS		9,485.6	10,371.38
246	239	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.25" SBBS 240		9,441.3	10,415.68
247	240	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	Yes	8.25" SBBS		9,396.9	10,460.11
248	241	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.25" SBBS		9,352.6	10,504.41
249	242	Casing Joints	5.500	20.00	P-110 HP	Yes	41.74	Yes	8.25" SBBS		9,310.8	10,546.15
250	243	Casing Joints	5.500	20.00	P-110 HP	Yes	44.47	Yes	8.25" SBBS		9,266.4	10,590.62
251	244	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS		9,222.0	10,635.04
252	245	Casing Joints	5.500	20.00	P-110 HP	Yes	40.92	Yes	8.25" SBBS		9,181.0	10,675.96
253	246	Casing Joints	5.500	20.00	P-110 HP	Yes	43.89	Yes	8.25" SBBS		9,137.2	10,719.85
254	247	Casing Joints	5.500	20.00	P-110 HP	Yes	44.65	Yes	8.25" SBBS		9,092.5	10,764.50
255	248	Casing Joints	5.500	20.00	P-110 HP	Yes	44.64	Yes	8.25" SBBS		9,047.9	10,809.14
256	249	Casing Joints	5.500	20.00	P-110 HP	Yes	44.48	Yes	8.25" SBBS 250		9,003.4	10,853.62
257	250	Casing Joints	5.500	20.00	P-110 HP	Yes	44.31	Yes	8.25" SBBS		8,959.1	10,897.93
258	251	Casing Joints	5.500	20.00	P-110 HP	Yes	44.32	Yes	8.25" SBBS		8,914.7	10,942.25
259	252	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.25" SBBS		8,870.5	10,986.55
260	253	Casing Joints	5.500	20.00	P-110 HP	Yes	43.77	Yes	8.25" SBBS		8,826.7	11,030.32
261	254	Casing Joints	5.500	20.00	P-110 HP	Yes	44.64	Yes	8.25" SBBS		8,782.0	11,074.96
262	255	Casing Joints	5.500	20.00	P-110 HP	Yes	44.25	Yes	8.25" SBBS		8,737.8	11,119.21
263	256	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS		8,693.6	11,163.42
264	257	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		8,649.2	11,207.83
265		Floatation Collar	5.500	20.00		Yes	2.06	No	Floatation Sub (Air lock sub)		8,647.1	11,209.89
266	258	Casing Joints	5.500	20.00	P-110 HP	Yes	42.18	Yes	8.25" SBBS		8,604.9	11,252.07
267	259	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS 260		8,560.5	11,296.48
268	260	Casing Joints	5.500	20.00	P-110 HP	Yes	42.50	Yes	8.25" SBBS		8,518.0	11,338.98
269	261	Casing Joints	5.500	20.00	P-110 HP	Yes	42.32	Yes	8.25" SBBS		8,475.7	11,381.30
270	262	Casing Joints	5.500	20.00	P-110 HP	Yes	42.27	Yes	8.25" SBBS		8,433.4	11,423.57
271	263	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		8,389.0	11,467.98
272	264	Casing Joints	5.500	20.00	P-110 HP	Yes	43.73	Yes	8.25" SBBS		8,345.3	11,511.71
273	265	Casing Joints	5.500	20.00	P-110 HP	Yes	44.31	Yes	8.25" SBBS		8,301.0	11,556.02
274	266	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS		8,256.6	11,600.44
275	267	Casing Joints	5.500	20.00	P-110 HP	Yes	44.31	Yes	8.25" SBBS		8,212.2	11,644.75
276	268	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS		8,167.8	11,689.17
277	269	Casing Joints	5.500	20.00	P-110 HP	Yes	43.93	Yes	8.25" SBBS 270		8,123.9	11,733.10
278	270	Casing Joints	5.500	20.00	P-110 HP	Yes	44.22	Yes	8.25" SBBS		8,079.7	11,777.32
279	271	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS		8,035.5	11,821.53
280	272	Casing Joints	5.500	20.00	P-110 HP	Yes	44.17	Yes	8.25" SBBS		7,991.3	11,865.70

Casing Offload Tally

Well Name: TIMMY MINCH OHI 210 **Production, Set Depth: 19,857.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003370000	4001164289	SWN PRODUCTION COMPANY L...	1,208.20	25.80	1,234.00 KB1,6/28/2016 07:12	6/22/2022 22:45
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
281	273	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS		7,946.9	11,910.12
282	274	Casing Joints	5.500	20.00	P-110 HP	Yes	44.48	Yes	8.25" SBBS		7,902.4	11,954.60
283	275	Casing Joints	5.500	20.00	P-110 HP	Yes	44.32	Yes	8.25" SBBS		7,858.1	11,998.92
284	276	Casing Joints	5.500	20.00	P-110 HP	Yes	42.35	Yes	8.25" SBBS		7,815.7	12,041.27
285	277	Casing Joints	5.500	20.00	P-110 HP	Yes	44.25	Yes	8.25" SBBS		7,771.5	12,085.52
286	278	Casing Joints	5.500	20.00	P-110 HP	Yes	44.66	Yes	8.25" SBBS		7,726.8	12,130.18
287	279	Casing Joints	5.500	20.00	P-110 HP	Yes	44.53	Yes	8.25" SBBS 280		7,682.3	12,174.71
288	280	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS		7,638.1	12,218.92
289	281	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	Yes	8.25" SBBS		7,593.7	12,263.35
290	282	Casing Joints	5.500	20.00	P-110 HP	Yes	43.81	Yes	8.25" SBBS		7,549.8	12,307.16
291	283	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS		7,505.4	12,351.58
292	284	Casing Joints	5.500	20.00	P-110 HP	Yes	44.44	Yes	8.25" SBBS		7,461.0	12,396.02
293	285	Casing Joints	5.500	20.00	P-110 HP	Yes	42.78	Yes	8.25" SBBS		7,418.2	12,438.80
294	286	Casing Joints	5.500	20.00	P-110 HP	Yes	42.57	Yes	8.25" SBBS		7,375.6	12,481.37
295	287	Casing Joints	5.500	20.00	P-110 HP	Yes	43.95	Yes	8.25" SBBS		7,331.7	12,525.32
296	288	Casing Joints	5.500	20.00	P-110 HP	Yes	43.85	Yes	8.25" SBBS		7,287.8	12,569.17
297	289	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	Yes	8.25" SBBS 290		7,243.6	12,613.37
298	290	Casing Joints	5.500	20.00	P-110 HP	Yes	42.72	Yes	8.25" SBBS		7,200.9	12,656.09
299	291	Casing Joints	5.500	20.00	P-110 HP	Yes	43.92	Yes	8.25" SBBS		7,157.0	12,700.01
300	292	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS		7,112.8	12,744.22
301	293	Casing Joints	5.500	20.00	P-110 HP	Yes	44.09	Yes	8.25" SBBS		7,068.7	12,788.31
302	294	Casing Joints	5.500	20.00	P-110 HP	Yes	44.31	Yes	8.25" SBBS		7,024.4	12,832.62
303	295	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS		6,980.0	12,877.04
304	296	Casing Joints	5.500	20.00	P-110 HP	Yes	43.96	Yes	8.25" SBBS		6,936.0	12,921.00
305	297	Casing Joints	5.500	20.00	P-110 HP	Yes	44.22	Yes	8.25" SBBS		6,891.8	12,965.22
306	298	Casing Joints	5.500	20.00	P-110 HP	Yes	44.40	Yes	8.25" SBBS		6,847.4	13,009.62
307	299	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS 300		6,803.2	13,053.83
308	300	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS		6,758.7	13,098.25
309	301	Casing Joints	5.500	20.00	P-110 HP	Yes	44.32	Yes	8.25" SBBS		6,714.4	13,142.57
310	302	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	Yes	8.25" SBBS		6,670.2	13,186.77
311	303	Casing Joints	5.500	20.00	P-110 HP	Yes	44.44	Yes	8.25" SBBS		6,625.8	13,231.21
312	304	Casing Joints	5.500	20.00	P-110 HP	Yes	44.06	Yes	8.25" SBBS		6,581.7	13,275.27
313	305	Casing Joints	5.500	20.00	P-110 HP	Yes	42.70	Yes	8.25" SBBS		6,539.0	13,317.97
314	306	Casing Joints	5.500	20.00	P-110 HP	Yes	44.22	Yes	8.25" SBBS		6,494.8	13,362.19
315		Marker Joint	5.500	20.00		Yes	20.68	Yes	Marker Joint #3 LP 8.25" SBBS		6,474.1	13,382.87
316	307	Casing Joints	5.500	20.00	P-110 HP	Yes	37.55	Yes	8.25" SBBS		6,436.6	13,420.42
317	308	Casing Joints	5.500	20.00	P-110 HP	Yes	44.29	Yes	8.25" SBBS 310		6,392.3	13,464.71
318	309	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS		6,348.1	13,508.92
319	310	Casing Joints	5.500	20.00	P-110 HP	Yes	43.69	Yes	8.25" SBBS		6,304.4	13,552.61
320	311	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	Yes	8.25" SBBS		6,260.0	13,597.04

Casing Offload Tally

Well Name: TIMMY MINCH OHI 210 **Production, Set Depth: 19,857.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003370000	4001164289	SWN PRODUCTION COMPANY L...	1,208.20	25.80	1,234.00 KB1,6/28/2016 07:12	6/22/2022 22:45
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
321	312	Casing Joints	5.500	20.00	P-110 HP	Yes	44.47	Yes	8.25" SBBS		6,215.5	13,641.51
322	313	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		6,171.1	13,685.92
323	314	Casing Joints	5.500	20.00	P-110 HP	Yes	44.18	Yes	8.25" SBBS		6,126.9	13,730.10
324	315	Casing Joints	5.500	20.00	P-110 HP	Yes	42.72	Yes	8.25" SBBS		6,084.2	13,772.82
325	316	Casing Joints	5.500	20.00	P-110 HP	Yes	42.00	Yes	8.25" SBBS		6,042.2	13,814.82
326	317	Casing Joints	5.500	20.00	P-110 HP	Yes	44.48	Yes	8.25" SBBS		5,997.7	13,859.30
327	318	Casing Joints	5.500	20.00	P-110 HP	Yes	42.31	Yes	8.25" SBBS 320		5,955.4	13,901.61
328	319	Casing Joints	5.500	20.00	P-110 HP	Yes	44.63	Yes	8.25" SBBS		5,910.8	13,946.24
329	320	Casing Joints	5.500	20.00	P-110 HP	Yes	44.13	Yes	8.25" SBBS		5,866.6	13,990.37
330	321	Casing Joints	5.500	20.00	P-110 HP	Yes	44.46	Yes	8.25" SBBS		5,822.2	14,034.83
331	322	Casing Joints	5.500	20.00	P-110 HP	Yes	44.29	Yes	8.25" SBBS		5,777.9	14,079.12
332	323	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.25" SBBS		5,733.5	14,123.53
333	324	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	Yes	8.25" SBBS		5,689.0	14,167.95
334	325	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.25" SBBS		5,644.8	14,212.25
335	326	Casing Joints	5.500	20.00	P-110 HP	Yes	44.38	Yes	8.25" SBBS		5,600.4	14,256.63
336	327	Casing Joints	5.500	20.00	P-110 HP	Yes	44.40	Yes	8.25" SBBS		5,556.0	14,301.03
337	328	Casing Joints	5.500	20.00	P-110 HP	Yes	42.60	Yes	8.25" SBBS 330		5,513.4	14,343.63
338	329	Casing Joints	5.500	20.00	P-110 HP	Yes	44.32	Yes	8.25" SBBS		5,469.0	14,387.95
339	330	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.25" SBBS		5,424.8	14,432.25
340	331	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.25" SBBS		5,380.5	14,476.46
341	332	Casing Joints	5.500	20.00	P-110 HP	Yes	44.40	Yes	8.25" SBBS		5,336.1	14,520.86
342	333	Casing Joints	5.500	20.00	P-110 HP	Yes	44.04	Yes	8.25" SBBS		5,292.1	14,564.90
343		Marker Joint	5.500	20.00		Yes	21.68	Yes	Marker Joint #4 KOP 8.25" SBBS 336		5,270.4	14,586.58
344	334	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	No			5,226.1	14,630.88
345	335	Casing Joints	5.500	20.00	P-110 HP	Yes	41.19	Yes	8.5" SBBS		5,184.9	14,672.07
346	336	Casing Joints	5.500	20.00	P-110 HP	Yes	41.60	No			5,143.3	14,713.67
347	337	Casing Joints	5.500	20.00	P-110 HP	Yes	44.29	Yes	8.5" SBBS		5,099.0	14,757.96
348	338	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	No			5,054.8	14,802.16
349	339	Casing Joints	5.500	20.00	P-110 HP	Yes	44.40	Yes	8.5" SBBS		5,010.4	14,846.56
350	340	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	No			4,966.2	14,890.76
351	341	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.5" SBBS		4,921.8	14,935.17
352	342	Casing Joints	5.500	20.00	P-110 HP	Yes	44.39	No			4,877.4	14,979.56
353	343	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.5" SBBS		4,833.0	15,023.97
354	344	Casing Joints	5.500	20.00	P-110 HP	Yes	44.45	No			4,788.6	15,068.42
355	345	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.5" SBBS		4,744.2	15,112.83
356	346	Casing Joints	5.500	20.00	P-110 HP	Yes	42.21	No			4,702.0	15,155.04
357	347	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes	8.5" SBBS		4,657.5	15,199.45
358	348	Casing Joints	5.500	20.00	P-110 HP	Yes	44.12	No			4,613.4	15,243.57
359	349	Casing Joints	5.500	20.00	P-110 HP	Yes	41.23	Yes	8.5" SBBS		4,572.2	15,284.80
360	350	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	No			4,528.0	15,329.00
361	351	Casing Joints	5.500	20.00	P-110 HP	Yes	44.46	Yes	8.5" SBBS		4,483.5	15,373.46
362	352	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	No			4,439.1	15,417.87
363	353	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	Yes	8.5" SBBS 10		4,394.9	15,462.07
364	354	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	No			4,350.7	15,506.27
365	355	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	Yes	8.5" SBBS		4,306.4	15,550.57
366	356	Casing Joints	5.500	20.00	P-110 HP	Yes	44.47	No			4,262.0	15,595.04
367	357	Casing Joints	5.500	20.00	P-110 HP	Yes	44.31	Yes	8.5" SBBS		4,217.6	15,639.35
368	358	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	No			4,173.5	15,683.55
369	359	Casing Joints	5.500	20.00	P-110 HP	Yes	44.47	Yes	8.5" SBBS		4,129.0	15,728.02
370	360	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	No			4,084.8	15,772.22
371	361	Casing Joints	5.500	20.00	P-110 HP	Yes	43.94	Yes	8.5" SBBS		4,040.8	15,816.16
372	362	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	No			3,996.4	15,860.58
373	363	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	Yes	8.5" SBBS		3,952.0	15,905.01
374	364	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	No			3,907.8	15,949.21

Casing Offload Tally

Well Name: TIMMY MINCH OHI 210 **Production, Set Depth: 19,857.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003370000	4001164289	SWN PRODUCTION COMPANY L...	1,208.20	25.80	1,234.00 KB1,6/28/2016 07:12	6/22/2022 22:45
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
375	365	Casing Joints	5.500	20.00	P-110 HP	Yes	44.29	Yes	8.5" SBBS		3,863.5	15,993.50
376	366	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	No			3,819.2	16,037.80
377	367	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes	8.5" SBBS		3,775.0	16,082.01
378	368	Casing Joints	5.500	20.00	P-110 HP	Yes	44.37	No			3,730.6	16,126.38
379	369	Casing Joints	5.500	20.00	P-110 HP	Yes	43.72	Yes	8.5" SBBS		3,686.9	16,170.10
380	370	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	No			3,642.5	16,214.52
381	371	Casing Joints	5.500	20.00	P-110 HP	Yes	44.47	Yes	8.5" SBBS		3,598.0	16,258.99
382	372	Casing Joints	5.500	20.00	P-110 HP	Yes	41.68	No			3,556.3	16,300.67
383	373	Casing Joints	5.500	20.00	P-110 HP	Yes	44.40	Yes	8.5" SBBS 20		3,511.9	16,345.07
384	374	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	No			3,467.7	16,389.28
385	375	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	Yes			3,423.5	16,433.49
386	376	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	No			3,379.1	16,477.92
387	377	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes			3,334.7	16,522.33
388	378	Casing Joints	5.500	20.00	P-110 HP	Yes	44.04	No			3,290.6	16,566.37
389	379	Casing Joints	5.500	20.00	P-110 HP	Yes	44.70	Yes			3,245.9	16,611.07
390	380	Casing Joints	5.500	20.00	P-110 HP	Yes	43.96	No			3,202.0	16,655.03
391	381	Casing Joints	5.500	20.00	P-110 HP	Yes	44.07	Yes			3,157.9	16,699.10
392	382	Casing Joints	5.500	20.00	P-110 HP	Yes	44.18	No			3,113.7	16,743.28
393	383	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes			3,069.3	16,787.69
394	384	Casing Joints	5.500	20.00	P-110 HP	Yes	43.67	No			3,025.6	16,831.36
395	385	Casing Joints	5.500	20.00	P-110 HP	Yes	42.60	Yes			2,983.0	16,873.96
396	386	Casing Joints	5.500	20.00	P-110 HP	Yes	42.68	No			2,940.4	16,916.64
397	387	Casing Joints	5.500	20.00	P-110 HP	Yes	44.50	Yes			2,895.9	16,961.14
398	388	Casing Joints	5.500	20.00	P-110 HP	Yes	41.25	No			2,854.6	17,002.39
399	389	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	Yes			2,810.2	17,046.80
400	390	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	No			2,765.8	17,091.21
401	391	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	Yes			2,721.6	17,135.41
402	392	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	No			2,677.2	17,179.83
403	393	Casing Joints	5.500	20.00	P-110 HP	Yes	44.68	Yes	"8.5" SBBS 30		2,632.5	17,224.51
404	394	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	No			2,588.2	17,268.81
405	395	Casing Joints	5.500	20.00	P-110 HP	Yes	44.22	Yes			2,544.0	17,313.03
406	396	Casing Joints	5.500	20.00	P-110 HP	Yes	44.47	No			2,499.5	17,357.50
407	397	Casing Joints	5.500	20.00	P-110 HP	Yes	44.47	Yes			2,455.0	17,401.97
408	398	Casing Joints	5.500	20.00	P-110 HP	Yes	44.45	No			2,410.6	17,446.42
409	399	Casing Joints	5.500	20.00	P-110 HP	Yes	43.00	Yes			2,367.6	17,489.42
410	400	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	No			2,323.4	17,533.63
411	401	Casing Joints	5.500	20.00	P-110 HP	Yes	42.75	Yes			2,280.6	17,576.38
412	402	Casing Joints	5.500	20.00	P-110 HP	Yes	41.71	No			2,238.9	17,618.09
413	403	Casing Joints	5.500	20.00	P-110 HP	Yes	42.53	Yes			2,196.4	17,660.62
414	404	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	No			2,152.1	17,704.92
415	405	Casing Joints	5.500	20.00	P-110 HP	Yes	44.19	Yes			2,107.9	17,749.11
416	406	Casing Joints	5.500	20.00	P-110 HP	Yes	42.09	No			2,065.8	17,791.20
417	407	Casing Joints	5.500	20.00	P-110 HP	Yes	44.71	Yes			2,021.1	17,835.91
418	408	Casing Joints	5.500	20.00	P-110 HP	Yes	41.76	No			1,979.3	17,877.67
419	409	Casing Joints	5.500	20.00	P-110 HP	Yes	44.19	Yes			1,935.1	17,921.86
420	410	Casing Joints	5.500	20.00	P-110 HP	Yes	44.40	No			1,890.7	17,966.26
421	411	Casing Joints	5.500	20.00	P-110 HP	Yes	44.32	Yes			1,846.4	18,010.58
422	412	Casing Joints	5.500	20.00	P-110 HP	Yes	44.07	No			1,802.4	18,054.65
423	413	Casing Joints	5.500	20.00	P-110 HP	Yes	43.28	Yes	"8.5" SBBS 40"		1,759.1	18,097.93
424	414	Casing Joints	5.500	20.00	P-110 HP	Yes	44.43	No			1,714.6	18,142.36
425	415	Casing Joints	5.500	20.00	P-110 HP	Yes	41.66	No			1,673.0	18,184.02
426	416	Casing Joints	5.500	20.00	P-110 HP	Yes	42.70	No			1,630.3	18,226.72
427	417	Casing Joints	5.500	20.00	P-110 HP	Yes	44.28	No			1,586.0	18,271.00
428	418	Casing Joints	5.500	20.00	P-110 HP	Yes	44.19	No			1,541.8	18,315.19
429	419	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	No			1,497.5	18,359.49
430	420	Casing Joints	5.500	20.00	P-110 HP	Yes	43.51	No			1,454.0	18,403.00
431	421	Casing Joints	5.500	20.00	P-110 HP	Yes	44.51	No			1,409.5	18,447.51
432	422	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	No			1,365.1	18,491.92
433	423	Casing Joints	5.500	20.00	P-110 HP	Yes	44.37	No			1,320.7	18,536.29
434	424	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	No			1,276.3	18,580.70
435	425	Casing Joints	5.500	20.00	P-110 HP	Yes	43.28	No			1,233.0	18,623.98
436	426	Casing Joints	5.500	20.00	P-110 HP	Yes	44.41	No			1,188.6	18,668.39
437	427	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	No			1,144.3	18,712.69
438	428	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	No			1,100.1	18,756.90
439	429	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	No			1,055.9	18,801.10
440	430	Casing Joints	5.500	20.00	P-110 HP	Yes	44.19	No			1,011.7	18,845.29
441	431	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	No			967.3	18,889.71
442	432	Casing Joints	5.500	20.00	P-110 HP	Yes	44.17	No			923.1	18,933.88
443	433	Casing Joints	5.500	20.00	P-110 HP	Yes	44.33	No			878.8	18,978.21
444	434	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	No			834.6	19,022.42
445	435	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	No			790.2	19,066.84
446	436	Casing Joints	5.500	20.00	P-110 HP	Yes	42.26	No			747.9	19,109.10
447	437	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	No			703.7	19,153.30
448	438	Casing Joints	5.500	20.00	P-110 HP	Yes	44.30	No			659.4	19,197.60

Casing Offload Tally

Well Name: TIMMY MINCH OHI 210 **Production, Set Depth: 19,857.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003370000	4001164289	SWN PRODUCTION COMPANY L...	1,208.20	25.80	1,234.00 KB1,6/28/2016 07:12	6/22/2022 22:45
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
449	439	Casing Joints	5.500	20.00	P-110 HP	Yes	44.22	No			615.2	19,241.82
450	440	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	No			571.0	19,286.02
451	441	Casing Joints	5.500	20.00	P-110 HP	Yes	44.27	No			526.7	19,330.29
452	442	Casing Joints	5.500	20.00	P-110 HP	Yes	44.28	No			482.4	19,374.57
453	443	Casing Joints	5.500	20.00	P-110 HP	Yes	44.47	No			438.0	19,419.04
454	444	Casing Joints	5.500	20.00	P-110 HP	Yes	42.01	No			395.9	19,461.05
455	445	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	No			351.5	19,505.47
456	446	Casing Joints	5.500	20.00	P-110 HP	Yes	44.54	No			307.0	19,550.01
457	447	Casing Joints	5.500	20.00	P-110 HP	Yes	44.34	No			262.6	19,594.35
458	448	Casing Joints	5.500	20.00	P-110 HP	Yes	43.38	No			219.3	19,637.73
459	449	Casing Joints	5.500	20.00	P-110 HP	Yes	44.20	No			175.1	19,681.93
	450	Casing Joints	5.500	20.00	P-110 HP	No	40.66	No	OUT 1			
460	451	Casing Joints	5.500	20.00	P-110 HP	Yes	44.36	No			130.7	19,726.29
461	452	Casing Joints	5.500	20.00	P-110 HP	Yes	44.21	No			86.5	19,770.50
462	453	Casing Joints	5.500	20.00	P-110 HP	Yes	44.42	No			42.1	19,814.92
463	454	Casing Joints	5.500	20.00	P-110 HP	Yes	16.10	No	Cut off		26.0	19,831.02
	455	Casing Joints	5.500	20.00	P-110 HP	No	40.23	No	OUT 2			
	456	Casing Joints	5.500	20.00	P-110 HP	No	44.45	No	OUT 3			
	457	Casing Joints	5.500	20.00	P-110 HP	No	43.39	No	OUT 4			
	458	Casing Joints	5.500	20.00	P-110 HP	No	44.35	No	OUT 5			
	459	Casing Joints	5.500	20.00	P-110 HP	No	44.35	No	OUT 6			
	460	Casing Joints	5.500	20.00	P-110 HP	No	41.66	No	OUT 7			
	461	Casing Joints	5.500	20.00	P-110 HP	No	44.46	No	OUT 8			
	462	Casing Joints	5.500	20.00	P-110 HP	No	43.38	No	OUT 9			
	463	Casing Joints	5.500	20.00	P-110 HP	No	42.60	No	OUT 10			
	464	Casing Joints	5.500	20.00	P-110 HP	No	38.68	No	OUT 11			
	465	Casing Joints	5.500	20.00	P-110 HP	No	44.43	No	OUT 12			
	466	Casing Joints	5.500	20.00	P-110 HP	No	43.37	No	OUT 13			
		Casing Joints	5.500	20.00	P-110 HP	No	21.52	No	Marker joint OUT			

Casing Offload Tally

Well Name: TIMMY MINCH OHI 8 **Production, Set Depth: 23,454.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003350000	4001164218	SWN PRODUCTION COMPANY L...	1,208.30	25.70	1,234.00 KB1,6/28/2016 07:06	5/16/2022 23:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Strings

Casing Description	Set Depth (ftKB)	Run Date
Production	23,454.00	5/30/2022 22:00

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
1		Float Shoe	5.500	20.00		Yes	2.23	No	Varel Double Float shoe		23,451.8	2.23
2	1	Casing Joints	5.500	20.00	P-110	Yes	44.27	Yes	CDC total string 2 x SBBS 8.25"		23,407.5	46.50
3		Float Collar	5.500	20.00		Yes	1.86	No	Weatherford float collar		23,405.6	48.36
4	2	Casing Joints	5.500	20.00	P-110	Yes	39.81	No			23,365.8	88.17
5		Toe Sleeve	5.500	20.00		Yes	3.56	No	Wellboss Toe Sleeve 10K		23,362.3	91.73
6	3	Casing Joints	5.500	20.00	P-110	Yes	40.43	No			23,321.8	132.16
7		Toe Sleeve	5.500	20.00		Yes	3.56	No	Wellboss Toe Sleeve 10K		23,318.3	135.72
8	4	Casing Joints	5.500	20.00	P-110	Yes	40.63	Yes	SBBS 3		23,277.7	176.35
9		Toe Sleeve	5.500	20.00		Yes	3.56	No	Wellboss Toe Sleeve 10K		23,274.1	179.91
10	5	Casing Joints	5.500	20.00	P-110	Yes	41.98	Yes	SBBS 4		23,232.1	221.89
11	6	Casing Joints	5.500	20.00	P-110	Yes	44.00	Yes	SBBS 5		23,188.1	265.89
12	7	Casing Joints	5.500	20.00	P-110	Yes	44.15	Yes	SBBS		23,144.0	310.04
13	8	Casing Joints	5.500	20.00	P-110	Yes	41.01	Yes	SBBS		23,103.0	351.05
14	9	Casing Joints	5.500	20.00	P-110	Yes	41.44	Yes	SBBS		23,061.5	392.49
15	10	Casing Joints	5.500	20.00	P-110	Yes	43.77	Yes	SBBS		23,017.7	436.26
16	11	Casing Joints	5.500	20.00	P-110	Yes	44.24	Yes	SBBS 10		22,973.5	480.50
17	12	Casing Joints	5.500	20.00	P-110	Yes	43.08	Yes	SBBS		22,930.4	523.58
18	13	Casing Joints	5.500	20.00	P-110	Yes	43.54	Yes	SBBS		22,886.9	567.12
19	14	Casing Joints	5.500	20.00	P-110	Yes	44.28	Yes	SBBS		22,842.6	611.40
20	15	Casing Joints	5.500	20.00	P-110	Yes	40.34	Yes	SBBS		22,802.3	651.74
21	16	Casing Joints	5.500	20.00	P-110	Yes	41.54	Yes	SBBS		22,760.7	693.28
22	17	Casing Joints	5.500	20.00	P-110	Yes	44.11	Yes	SBBS		22,716.6	737.39
23	18	Casing Joints	5.500	20.00	P-110	Yes	42.10	Yes	SBBS		22,674.5	779.49
24	19	Casing Joints	5.500	20.00	P-110	Yes	44.15	Yes	SBBS		22,630.4	823.64
25	20	Casing Joints	5.500	20.00	P-110	Yes	43.50	Yes	SBBS		22,586.9	867.14
26	21	Casing Joints	5.500	20.00	P-110	Yes	43.89	Yes	SBBS 20		22,543.0	911.03
27	22	Casing Joints	5.500	20.00	P-110	Yes	42.58	Yes	SBBS		22,500.4	953.61
28	23	Casing Joints	5.500	20.00	P-110	Yes	41.98	Yes	SBBS		22,458.4	995.59
29	24	Casing Joints	5.500	20.00	P-110	Yes	43.30	Yes	SBBS		22,415.1	1,038.89
30	25	Casing Joints	5.500	20.00	P-110	Yes	44.27	Yes	SBBS		22,370.8	1,083.16
31	26	Casing Joints	5.500	20.00	P-110	Yes	40.21	Yes	SBBS		22,330.6	1,123.37
32	27	Casing Joints	5.500	20.00	P-110	Yes	44.16	Yes	SBBS		22,286.5	1,167.53
33	28	Casing Joints	5.500	20.00	P-110	Yes	43.62	Yes	SBBS		22,242.9	1,211.15
34	29	Casing Joints	5.500	20.00	P-110	Yes	39.62	Yes	SBBS		22,203.2	1,250.77
35	30	Casing Joints	5.500	20.00	P-110	Yes	43.58	Yes	SBBS		22,159.7	1,294.35
36	31	Casing Joints	5.500	20.00	P-110	Yes	42.26	Yes	SBBS 30		22,117.4	1,336.61
37	32	Casing Joints	5.500	20.00	P-110	Yes	44.00	Yes	SBBS		22,073.4	1,380.61
38	33	Casing Joints	5.500	20.00	P-110	Yes	43.47	Yes	SBBS		22,029.9	1,424.08
39	34	Casing Joints	5.500	20.00	P-110	Yes	42.79	Yes	SBBS		21,987.1	1,466.87
40	35	Casing Joints	5.500	20.00	P-110	Yes	43.97	Yes	SBBS		21,943.2	1,510.84
41	36	Casing Joints	5.500	20.00	P-110	Yes	41.93	Yes	SBBS		21,901.2	1,552.77
42	37	Casing Joints	5.500	20.00	P-110	Yes	39.94	Yes	SBBS		21,861.3	1,592.71
43	38	Casing Joints	5.500	20.00	P-110	Yes	41.90	Yes	SBBS		21,819.4	1,634.61
44	39	Casing Joints	5.500	20.00	P-110	Yes	44.04	Yes	SBBS		21,775.4	1,678.65
45	40	Casing Joints	5.500	20.00	P-110	Yes	43.62	Yes	SBBS		21,731.7	1,722.27
46	41	Casing Joints	5.500	20.00	P-110	Yes	42.83	Yes	SBBS 40		21,688.9	1,765.10
47	42	Casing Joints	5.500	20.00	P-110	Yes	44.45	Yes	SBBS		21,644.5	1,809.55
48	43	Casing Joints	5.500	20.00	P-110	Yes	39.75	Yes	SBBS		21,604.7	1,849.30
49	44	Casing Joints	5.500	20.00	P-110	Yes	43.44	Yes	SBBS		21,561.3	1,892.74
50	45	Casing Joints	5.500	20.00	P-110	Yes	44.00	Yes	SBBS		21,517.3	1,936.74
51	46	Casing Joints	5.500	20.00	P-110	Yes	42.35	Yes	SBBS		21,474.9	1,979.09
52	47	Casing Joints	5.500	20.00	P-110	Yes	44.44	Yes	SBBS		21,430.5	2,023.53
53	48	Casing Joints	5.500	20.00	P-110	Yes	42.78	Yes	SBBS		21,387.7	2,066.31
54	49	Casing Joints	5.500	20.00	P-110	Yes	44.29	Yes	SBBS		21,343.4	2,110.60
55	50	Casing Joints	5.500	20.00	P-110	Yes	43.49	Yes	SBBS		21,299.9	2,154.09
56	51	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS 50		21,255.6	2,198.44
57	52	Casing Joints	5.500	20.00	P-110	Yes	41.80	Yes	SBBS		21,213.8	2,240.24
58	53	Casing Joints	5.500	20.00	P-110	Yes	42.68	Yes	SBBS		21,171.1	2,282.92
59	54	Casing Joints	5.500	20.00	P-110	Yes	44.07	Yes	SBBS		21,127.0	2,326.99
60	55	Casing Joints	5.500	20.00	P-110	Yes	44.13	Yes	SBBS		21,082.9	2,371.12
61	56	Casing Joints	5.500	20.00	P-110	Yes	44.34	Yes	SBBS		21,038.5	2,415.46
62	57	Casing Joints	5.500	20.00	P-110	Yes	43.60	Yes	SBBS		20,994.9	2,459.06
63	58	Casing Joints	5.500	20.00	P-110	Yes	42.34	Yes	SBBS		20,952.6	2,501.40

Casing Offload Tally

Well Name: TIMMY MINCH OHI 8 **Production, Set Depth: 23,454.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003350000	4001164218	SWN PRODUCTION COMPANY L...	1,208.30	25.70	1,234.00 KB1,6/28/2016 07:06	5/16/2022 23:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
64	59	Casing Joints	5.500	20.00	P-110	Yes	44.37	Yes	SBBS		20,908.2	2,545.77
65	60	Casing Joints	5.500	20.00	P-110	Yes	44.19	Yes	SBBS		20,864.0	2,589.96
66	61	Casing Joints	5.500	20.00	P-110	Yes	42.74	Yes	SBBS 60		20,821.3	2,632.70
67	62	Casing Joints	5.500	20.00	P-110	Yes	42.83	Yes	SBBS		20,778.5	2,675.53
68	63	Casing Joints	5.500	20.00	P-110	Yes	42.78	Yes	SBBS		20,735.7	2,718.31
69	64	Casing Joints	5.500	20.00	P-110	Yes	41.55	Yes	SBBS		20,694.1	2,759.86
70	65	Casing Joints	5.500	20.00	P-110	Yes	43.52	Yes	SBBS		20,650.6	2,803.38
71	66	Casing Joints	5.500	20.00	P-110	Yes	41.98	Yes	SBBS		20,608.6	2,845.36
72	67	Casing Joints	5.500	20.00	P-110	Yes	42.00	Yes	SBBS		20,566.6	2,887.36
73	68	Casing Joints	5.500	20.00	P-110	Yes	43.93	Yes	SBBS		20,522.7	2,931.29
74	69	Casing Joints	5.500	20.00	P-110	Yes	39.93	Yes	SBBS		20,482.8	2,971.22
75	70	Casing Joints	5.500	20.00	P-110	Yes	43.25	Yes	SBBS		20,439.5	3,014.47
76	71	Casing Joints	5.500	20.00	P-110	Yes	44.24	Yes	SBBS 70		20,395.3	3,058.71
77	72	Casing Joints	5.500	20.00	P-110	Yes	43.94	Yes	SBBS		20,351.4	3,102.65
78	73	Casing Joints	5.500	20.00	P-110	Yes	42.38	Yes	SBBS		20,309.0	3,145.03
79	74	Casing Joints	5.500	20.00	P-110	Yes	41.50	Yes	SBBS		20,267.5	3,186.53
80	75	Casing Joints	5.500	20.00	P-110	Yes	42.52	Yes	SBBS		20,225.0	3,229.05
81	76	Casing Joints	5.500	20.00	P-110	Yes	42.73	Yes	SBBS		20,182.2	3,271.78
82	77	Casing Joints	5.500	20.00	P-110	Yes	41.82	Yes	SBBS		20,140.4	3,313.60
83	78	Casing Joints	5.500	20.00	P-110	Yes	44.31	Yes	SBBS		20,096.1	3,357.91
84	79	Casing Joints	5.500	20.00	P-110	Yes	44.23	Yes	SBBS		20,051.9	3,402.14
85	80	Casing Joints	5.500	20.00	P-110	Yes	41.02	Yes	SBBS		20,010.8	3,443.16
86	81	Casing Joints	5.500	20.00	P-110	Yes	43.37	Yes	SBBS 80		19,967.5	3,486.53
87	82	Casing Joints	5.500	20.00	P-110	Yes	44.05	Yes	SBBS		19,923.4	3,530.58
88	83	Casing Joints	5.500	20.00	P-110	Yes	44.49	Yes	SBBS		19,878.9	3,575.07
89	84	Casing Joints	5.500	20.00	P-110	Yes	43.79	Yes	SBBS		19,835.1	3,618.86
90	85	Casing Joints	5.500	20.00	P-110	Yes	44.09	Yes	SBBS		19,791.1	3,662.95
91	86	Casing Joints	5.500	20.00	P-110	Yes	43.55	Yes	SBBS		19,747.5	3,706.50
92	87	Casing Joints	5.500	20.00	P-110	Yes	40.44	Yes	SBBS		19,707.1	3,746.94
93	88	Casing Joints	5.500	20.00	P-110	Yes	44.12	Yes	SBBS		19,662.9	3,791.06
94	89	Casing Joints	5.500	20.00	P-110	Yes	43.46	Yes	SBBS		19,619.5	3,834.52
95	90	Casing Joints	5.500	20.00	P-110	Yes	42.04	Yes	SBBS		19,577.4	3,876.56
96	91	Casing Joints	5.500	20.00	P-110	Yes	43.31	Yes	SBBS 90		19,534.1	3,919.87
97	92	Casing Joints	5.500	20.00	P-110	Yes	39.68	Yes	SBBS		19,494.5	3,959.55
98	93	Casing Joints	5.500	20.00	P-110	Yes	42.72	Yes	SBBS		19,451.7	4,002.27
99	94	Casing Joints	5.500	20.00	P-110	Yes	43.12	Yes	SBBS		19,408.6	4,045.39
100	95	Casing Joints	5.500	20.00	P-110	Yes	44.08	Yes	SBBS		19,364.5	4,089.47
101	96	Casing Joints	5.500	20.00	P-110	Yes	41.17	Yes	SBBS		19,323.4	4,130.64
102	97	Casing Joints	5.500	20.00	P-110	Yes	44.14	Yes	SBBS		19,279.2	4,174.78
103	98	Casing Joints	5.500	20.00	P-110	Yes	42.09	Yes	SBBS		19,237.1	4,216.87
104	99	Casing Joints	5.500	20.00	P-110	Yes	44.29	Yes	SBBS		19,192.8	4,261.16
105	100	Casing Joints	5.500	20.00	P-110	Yes	44.24	Yes	SBBS		19,148.6	4,305.40
106	101	Casing Joints	5.500	20.00	P-110	Yes	43.92	Yes	SBBS 100		19,104.7	4,349.32
107	102	Casing Joints	5.500	20.00	P-110	Yes	44.49	Yes	SBBS		19,060.2	4,393.81
108	103	Casing Joints	5.500	20.00	P-110	Yes	42.35	Yes	SBBS		19,017.8	4,436.16
109	104	Casing Joints	5.500	20.00	P-110	Yes	42.91	Yes	SBBS		18,974.9	4,479.07
110	105	Casing Joints	5.500	20.00	P-110	Yes	41.83	Yes	SBBS		18,933.1	4,520.90
111	106	Casing Joints	5.500	20.00	P-110	Yes	42.94	Yes	SBBS		18,890.2	4,563.84
112	107	Casing Joints	5.500	20.00	P-110	Yes	43.90	Yes	SBBS		18,846.3	4,607.74
113	108	Casing Joints	5.500	20.00	P-110	Yes	43.07	Yes	SBBS		18,803.2	4,650.81
114	109	Casing Joints	5.500	20.00	P-110	Yes	44.27	Yes	SBBS		18,758.9	4,695.08
115	110	Casing Joints	5.500	20.00	P-110	Yes	42.17	Yes	SBBS		18,716.8	4,737.25
116	111	Casing Joints	5.500	20.00	P-110	Yes	44.32	Yes	SBBS 110		18,672.4	4,781.57
117	112	Casing Joints	5.500	20.00	P-110	Yes	44.09	Yes	SBBS		18,628.3	4,825.66
118	113	Casing Joints	5.500	20.00	P-110	Yes	43.87	Yes	SBBS		18,584.5	4,869.53
119	114	Casing Joints	5.500	20.00	P-110	Yes	42.78	Yes	SBBS		18,541.7	4,912.31
120	115	Casing Joints	5.500	20.00	P-110	Yes	44.47	Yes	SBBS		18,497.2	4,956.78
121	116	Casing Joints	5.500	20.00	P-110	Yes	43.70	Yes	SBBS		18,453.5	5,000.48
122	117	Casing Joints	5.500	20.00	P-110	Yes	43.53	Yes	SBBS		18,410.0	5,044.01
123	118	Casing Joints	5.500	20.00	P-110	Yes	44.10	Yes	SBBS		18,365.9	5,088.11
124	119	Casing Joints	5.500	20.00	P-110	Yes	43.85	Yes	SBBS		18,322.0	5,131.96
125	120	Casing Joints	5.500	20.00	P-110	Yes	43.96	Yes	SBBS		18,278.1	5,175.92
126	121	Casing Joints	5.500	20.00	P-110	Yes	44.26	Yes	SBBS 120		18,233.8	5,220.18
127	122	Casing Joints	5.500	20.00	P-110	Yes	43.90	Yes	SBBS		18,189.9	5,264.08
128		Marker Joint	5.500	20.00		Yes	20.38	Yes	Marker Joint #1 (2/3 into lateral) SBBS		18,169.5	5,284.46
129	123	Casing Joints	5.500	20.00	P-110	Yes	43.80	Yes	SBBS		18,125.7	5,328.26
130	124	Casing Joints	5.500	20.00	P-110	Yes	44.26	Yes	SBBS		18,081.5	5,372.52
131	125	Casing Joints	5.500	20.00	P-110	Yes	44.28	Yes	SBBS		18,037.2	5,416.80
132	126	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		17,992.9	5,461.15
133	127	Casing Joints	5.500	20.00	P-110	Yes	44.47	Yes	SBBS		17,948.4	5,505.62
134	128	Casing Joints	5.500	20.00	P-110	Yes	43.01	Yes	SBBS		17,905.4	5,548.63
135	129	Casing Joints	5.500	20.00	P-110	Yes	43.76	Yes	SBBS		17,861.6	5,592.39
136	130	Casing Joints	5.500	20.00	P-110	Yes	43.65	Yes	SBBS 130		17,818.0	5,636.04

Casing Offload Tally

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Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
137	131	Casing Joints	5.500	20.00	P-110	Yes	42.00	Yes	SBBS		17,776.0	5,678.04
138	132	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		17,731.6	5,722.39
139	133	Casing Joints	5.500	20.00	P-110	Yes	44.28	Yes	SBBS		17,687.3	5,766.67
140	134	Casing Joints	5.500	20.00	P-110	Yes	41.91	Yes	SBBS		17,645.4	5,808.58
141	135	Casing Joints	5.500	20.00	P-110	Yes	43.15	Yes	SBBS		17,602.3	5,851.73
142	136	Casing Joints	5.500	20.00	P-110	Yes	44.47	Yes	SBBS		17,557.8	5,896.20
143	137	Casing Joints	5.500	20.00	P-110	Yes	44.46	Yes	SBBS		17,513.3	5,940.66
144	138	Casing Joints	5.500	20.00	P-110	Yes	40.69	Yes	SBBS		17,472.7	5,981.35
145	139	Casing Joints	5.500	20.00	P-110	Yes	41.44	Yes	SBBS		17,431.2	6,022.79
146	140	Casing Joints	5.500	20.00	P-110	Yes	44.52	Yes	SBBS 140		17,386.7	6,067.31
147	141	Casing Joints	5.500	20.00	P-110	Yes	44.50	Yes	SBBS		17,342.2	6,111.81
148	142	Casing Joints	5.500	20.00	P-110	Yes	42.65	Yes	SBBS		17,299.5	6,154.46
149	143	Casing Joints	5.500	20.00	P-110	Yes	44.39	Yes	SBBS		17,255.2	6,198.85
150	144	Casing Joints	5.500	20.00	P-110	Yes	41.49	Yes	SBBS		17,213.7	6,240.34
151	145	Casing Joints	5.500	20.00	P-110	Yes	43.77	Yes	SBBS		17,169.9	6,284.11
152	146	Casing Joints	5.500	20.00	P-110	Yes	44.16	Yes	SBBS		17,125.7	6,328.27
153	147	Casing Joints	5.500	20.00	P-110	Yes	44.15	Yes	SBBS		17,081.6	6,372.42
154	148	Casing Joints	5.500	20.00	P-110	Yes	39.79	Yes	SBBS		17,041.8	6,412.21
155	149	Casing Joints	5.500	20.00	P-110	Yes	43.62	Yes	SBBS		16,998.2	6,455.83
156	150	Casing Joints	5.500	20.00	P-110	Yes	43.26	Yes	SBBS 150		16,954.9	6,499.09
157	151	Casing Joints	5.500	20.00	P-110	Yes	44.07	Yes	SBBS		16,910.8	6,543.16
158	152	Casing Joints	5.500	20.00	P-110	Yes	44.11	Yes	SBBS		16,866.7	6,587.27
159	153	Casing Joints	5.500	20.00	P-110	Yes	44.00	Yes	SBBS		16,822.7	6,631.27
160	154	Casing Joints	5.500	20.00	P-110	Yes	44.00	Yes	SBBS		16,778.7	6,675.27
161	155	Casing Joints	5.500	20.00	P-110	Yes	44.04	Yes	SBBS		16,734.7	6,719.31
162	156	Casing Joints	5.500	20.00	P-110	Yes	43.20	Yes	SBBS		16,691.5	6,762.51
163	157	Casing Joints	5.500	20.00	P-110	Yes	44.29	Yes	SBBS		16,647.2	6,806.80
164	158	Casing Joints	5.500	20.00	P-110	Yes	44.45	Yes	SBBS		16,602.8	6,851.25
165	159	Casing Joints	5.500	20.00	P-110	Yes	44.28	Yes	SBBS		16,558.5	6,895.53
166	160	Casing Joints	5.500	20.00	P-110	Yes	44.00	Yes	SBBS 160		16,514.5	6,939.53
167	161	Casing Joints	5.500	20.00	P-110	Yes	44.08	Yes	SBBS		16,470.4	6,983.61
168	162	Casing Joints	5.500	20.00	P-110	Yes	43.92	Yes	SBBS		16,426.5	7,027.53
169	163	Casing Joints	5.500	20.00	P-110	Yes	44.15	Yes	SBBS		16,382.3	7,071.68
170	164	Casing Joints	5.500	20.00	P-110	Yes	44.04	Yes	SBBS		16,338.3	7,115.72
171	165	Casing Joints	5.500	20.00	P-110	Yes	42.51	Yes	SBBS		16,295.8	7,158.23
172	166	Casing Joints	5.500	20.00	P-110	Yes	44.25	Yes	SBBS		16,251.5	7,202.48
173	167	Casing Joints	5.500	20.00	P-110	Yes	44.41	Yes	SBBS		16,207.1	7,246.89
174	168	Casing Joints	5.500	20.00	P-110	Yes	44.28	Yes	SBBS		16,162.8	7,291.17
175	169	Casing Joints	5.500	20.00	P-110	Yes	44.34	Yes	SBBS		16,118.5	7,335.51
176	170	Casing Joints	5.500	20.00	P-110	Yes	43.82	Yes	SBBS 170		16,074.7	7,379.33
177	171	Casing Joints	5.500	20.00	P-110	Yes	42.28	Yes	SBBS		16,032.4	7,421.61
178	172	Casing Joints	5.500	20.00	P-110	Yes	40.74	Yes	SBBS		15,991.7	7,462.35
179	173	Casing Joints	5.500	20.00	P-110	Yes	42.00	Yes	SBBS		15,949.7	7,504.35
180	174	Casing Joints	5.500	20.00	P-110	Yes	44.47	Yes	SBBS		15,905.2	7,548.82
181	175	Casing Joints	5.500	20.00	P-110	Yes	44.27	Yes	SBBS		15,860.9	7,593.09
182	176	Casing Joints	5.500	20.00	P-110	Yes	43.49	Yes	SBBS		15,817.4	7,636.58
183	177	Casing Joints	5.500	20.00	P-110	Yes	43.87	Yes	SBBS		15,773.6	7,680.45
184	178	Casing Joints	5.500	20.00	P-110	Yes	43.74	Yes	SBBS		15,729.8	7,724.19
185	179	Casing Joints	5.500	20.00	P-110	Yes	44.09	Yes	SBBS		15,685.7	7,768.28
186	180	Casing Joints	5.500	20.00	P-110	Yes	44.28	Yes	SBBS 180		15,641.4	7,812.56
187	181	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		15,597.1	7,856.91
188	182	Casing Joints	5.500	20.00	P-110	Yes	42.80	Yes	SBBS		15,554.3	7,899.71
189	183	Casing Joints	5.500	20.00	P-110	Yes	43.84	Yes	SBBS		15,510.5	7,943.55
190	184	Casing Joints	5.500	20.00	P-110	Yes	44.30	Yes	SBBS		15,466.2	7,987.85
191	185	Casing Joints	5.500	20.00	P-110	Yes	44.04	Yes	SBBS		15,422.1	8,031.89
192	186	Casing Joints	5.500	20.00	P-110	Yes	44.17	Yes	SBBS		15,377.9	8,076.06
193	187	Casing Joints	5.500	20.00	P-110	Yes	44.15	Yes	SBBS		15,333.8	8,120.21
194	188	Casing Joints	5.500	20.00	P-110	Yes	41.61	Yes	SBBS		15,292.2	8,161.82
195	189	Casing Joints	5.500	20.00	P-110	Yes	43.14	Yes	SBBS		15,249.0	8,204.96
196	190	Casing Joints	5.500	20.00	P-110	Yes	43.92	Yes	SBBS 190		15,205.1	8,248.88
197	191	Casing Joints	5.500	20.00	P-110	Yes	42.82	Yes	SBBS		15,162.3	8,291.70
198	192	Casing Joints	5.500	20.00	P-110	Yes	43.18	Yes	SBBS		15,119.1	8,334.88
199	193	Casing Joints	5.500	20.00	P-110	Yes	44.22	Yes	SBBS		15,074.9	8,379.10
200	194	Casing Joints	5.500	20.00	P-110	Yes	43.62	Yes	SBBS		15,031.3	8,422.72
201	195	Casing Joints	5.500	20.00	P-110	Yes	43.56	Yes	SBBS		14,987.7	8,466.28
202	196	Casing Joints	5.500	20.00	P-110	Yes	44.34	Yes	SBBS		14,943.4	8,510.62
203	197	Casing Joints	5.500	20.00	P-110	Yes	42.40	Yes	SBBS		14,901.0	8,553.02
204	198	Casing Joints	5.500	20.00	P-110	Yes	44.33	Yes	SBBS		14,856.7	8,597.35
205	199	Casing Joints	5.500	20.00	P-110	Yes	44.50	Yes	SBBS		14,812.2	8,641.85
206	200	Casing Joints	5.500	20.00	P-110	Yes	44.37	Yes	SBBS 200		14,767.8	8,686.22
207	201	Casing Joints	5.500	20.00	P-110	Yes	44.30	Yes	SBBS		14,723.5	8,730.52
208	202	Casing Joints	5.500	20.00	P-110	Yes	43.92	Yes	SBBS		14,679.6	8,774.44
209	203	Casing Joints	5.500	20.00	P-110	Yes	42.70	Yes	SBBS		14,636.9	8,817.14
210	204	Casing Joints	5.500	20.00	P-110	Yes	44.10	Yes	SBBS		14,592.8	8,861.24
211	205	Casing Joints	5.500	20.00	P-110	Yes	44.10	Yes	SBBS		14,548.7	8,905.34
212	206	Casing Joints	5.500	20.00	P-110	Yes	44.03	Yes	SBBS		14,504.6	8,949.37
213	207	Casing Joints	5.500	20.00	P-110	Yes	41.38	Yes	SBBS		14,463.3	8,990.75

Casing Offload Tally

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Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
214	208	Casing Joints	5.500	20.00	P-110	Yes	43.01	Yes	SBBS		14,420.2	9,033.76
215	209	Casing Joints	5.500	20.00	P-110	Yes	40.36	Yes	SBBS		14,379.9	9,074.12
216	210	Casing Joints	5.500	20.00	P-110	Yes	43.50	Yes	SBBS 210		14,336.4	9,117.62
217	211	Casing Joints	5.500	20.00	P-110	Yes	42.68	Yes	SBBS		14,293.7	9,160.30
218	212	Casing Joints	5.500	20.00	P-110	Yes	41.98	Yes	SBBS		14,251.7	9,202.28
219	213	Casing Joints	5.500	20.00	P-110	Yes	44.46	Yes	SBBS		14,207.3	9,246.74
220	214	Casing Joints	5.500	20.00	P-110	Yes	43.86	Yes	SBBS		14,163.4	9,290.60
221	215	Casing Joints	5.500	20.00	P-110	Yes	44.25	Yes	SBBS		14,119.2	9,334.85
222	216	Casing Joints	5.500	20.00	P-110	Yes	44.50	Yes	SBBS		14,074.7	9,379.35
223	217	Casing Joints	5.500	20.00	P-110	Yes	42.85	Yes	SBBS		14,031.8	9,422.20
224	218	Casing Joints	5.500	20.00	P-110	Yes	40.30	Yes	SBBS		13,991.5	9,462.50
225	219	Casing Joints	5.500	20.00	P-110	Yes	42.69	Yes	SBBS		13,948.8	9,505.19
226	220	Casing Joints	5.500	20.00	P-110	Yes	42.23	Yes	SBBS 220		13,906.6	9,547.42
227	221	Casing Joints	5.500	20.00	P-110	Yes	42.10	Yes	SBBS		13,864.5	9,589.52
228	222	Casing Joints	5.500	20.00	P-110	Yes	43.57	Yes	SBBS		13,820.9	9,633.09
229	223	Casing Joints	5.500	20.00	P-110	Yes	41.50	Yes	SBBS		13,779.4	9,674.59
230	224	Casing Joints	5.500	20.00	P-110	Yes	42.30	Yes	SBBS		13,737.1	9,716.89
231	225	Casing Joints	5.500	20.00	P-110	Yes	42.15	Yes	SBBS		13,695.0	9,759.04
232	226	Casing Joints	5.500	20.00	P-110	Yes	42.66	Yes	SBBS		13,652.3	9,801.70
233	227	Casing Joints	5.500	20.00	P-110	Yes	43.97	Yes	SBBS		13,608.3	9,845.67
234	228	Casing Joints	5.500	20.00	P-110	Yes	43.89	Yes	SBBS		13,564.4	9,889.56
235	229	Casing Joints	5.500	20.00	P-110	Yes	40.32	Yes	SBBS		13,524.1	9,929.88
236	230	Casing Joints	5.500	20.00	P-110	Yes	44.42	Yes	SBBS 230		13,479.7	9,974.30
237	231	Casing Joints	5.500	20.00	P-110	Yes	40.31	Yes	SBBS		13,439.4	10,014.61
238	232	Casing Joints	5.500	20.00	P-110	Yes	44.05	Yes	SBBS		13,395.3	10,058.66
239	233	Casing Joints	5.500	20.00	P-110	Yes	44.10	Yes	SBBS		13,351.2	10,102.76
240	234	Casing Joints	5.500	20.00	P-110	Yes	39.99	Yes	SBBS		13,311.3	10,142.75
241	235	Casing Joints	5.500	20.00	P-110	Yes	44.23	Yes	SBBS		13,267.0	10,186.98
242	236	Casing Joints	5.500	20.00	P-110	Yes	42.36	Yes	SBBS		13,224.7	10,229.34
243	237	Casing Joints	5.500	20.00	P-110	Yes	44.36	Yes	SBBS		13,180.3	10,273.70
244	238	Casing Joints	5.500	20.00	P-110	Yes	39.95	Yes	SBBS		13,140.4	10,313.65
245	239	Casing Joints	5.500	20.00	P-110	Yes	44.07	Yes	SBBS		13,096.3	10,357.72
246	240	Casing Joints	5.500	20.00	P-110	Yes	39.83	Yes	SBBS 240		13,056.5	10,397.55
247	241	Casing Joints	5.500	20.00	P-110	Yes	44.65	Yes	SBBS		13,011.8	10,442.20
248	242	Casing Joints	5.500	20.00	P-110	Yes	44.12	Yes	SBBS		12,967.7	10,486.32
249	243	Casing Joints	5.500	20.00	P-110	Yes	37.63	Yes	SBBS		12,930.1	10,523.95
250	244	Casing Joints	5.500	20.00	P-110	Yes	39.20	Yes	SBBS		12,890.9	10,563.15
251	245	Casing Joints	5.500	20.00	P-110	Yes	43.76	Yes	SBBS		12,847.1	10,606.91
252	246	Casing Joints	5.500	20.00	P-110	Yes	43.58	Yes	SBBS		12,803.5	10,650.49
253	247	Casing Joints	5.500	20.00	P-110	Yes	44.23	Yes	SBBS		12,759.3	10,694.72
254	248	Casing Joints	5.500	20.00	P-110	Yes	43.42	Yes	SBBS		12,715.9	10,738.14
255	249	Casing Joints	5.500	20.00	P-110	Yes	44.34	Yes	SBBS		12,671.5	10,782.48
256	250	Casing Joints	5.500	20.00	P-110	Yes	44.36	Yes	SBBS 250		12,627.2	10,826.84
257	251	Casing Joints	5.500	20.00	P-110	Yes	38.82	Yes	SBBS		12,588.3	10,865.66
258	252	Casing Joints	5.500	20.00	P-110	Yes	44.23	Yes	SBBS		12,544.1	10,909.89
259	253	Casing Joints	5.500	20.00	P-110	Yes	41.43	Yes	SBBS		12,502.7	10,951.32
260	254	Casing Joints	5.500	20.00	P-110	Yes	44.22	Yes	SBBS		12,458.5	10,995.54
261	255	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		12,414.1	11,039.89
262		Marker Joint	5.500	20.00		Yes	18.82	Yes	Marker Joint #2 (1/3 into Lateral) SBBS		12,395.3	11,058.71
263	256	Casing Joints	5.500	20.00	P-110	Yes	44.65	Yes	SBBS		12,350.6	11,103.36
264	257	Casing Joints	5.500	20.00	P-110	Yes	44.08	Yes	SBBS		12,306.6	11,147.44
265	258	Casing Joints	5.500	20.00	P-110	Yes	43.62	Yes	SBBS		12,262.9	11,191.06
266	259	Casing Joints	5.500	20.00	P-110	Yes	44.45	Yes	SBBS 260		12,218.5	11,235.51
267	260	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		12,174.1	11,279.86
268	261	Casing Joints	5.500	20.00	P-110	Yes	40.12	Yes	SBBS		12,134.0	11,319.98
269	262	Casing Joints	5.500	20.00	P-110	Yes	44.30	Yes	SBBS		12,089.7	11,364.28
270	263	Casing Joints	5.500	20.00	P-110	Yes	44.45	Yes	SBBS		12,045.3	11,408.73
271	264	Casing Joints	5.500	20.00	P-110	Yes	37.94	Yes	SBBS		12,007.3	11,446.67
272	265	Casing Joints	5.500	20.00	P-110	Yes	44.40	Yes	SBBS		11,962.9	11,491.07
273	266	Casing Joints	5.500	20.00	P-110	Yes	38.85	Yes	SBBS		11,924.1	11,529.92
274	267	Casing Joints	5.500	20.00	P-110	Yes	40.42	Yes	SBBS		11,883.7	11,570.34
275	268	Casing Joints	5.500	20.00	P-110	Yes	42.48	Yes	SBBS		11,841.2	11,612.82
276	269	Casing Joints	5.500	20.00	P-110	Yes	43.35	Yes	SBBS 270		11,797.8	11,656.17
277	270	Casing Joints	5.500	20.00	P-110	Yes	43.21	Yes	SBBS		11,754.6	11,699.38
278	271	Casing Joints	5.500	20.00	P-110	Yes	44.36	Yes	SBBS		11,710.3	11,743.74
279	272	Casing Joints	5.500	20.00	P-110	Yes	44.21	Yes	SBBS		11,666.1	11,787.95
280	273	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		11,621.7	11,832.30
281	274	Casing Joints	5.500	20.00	P-110	Yes	44.31	Yes	SBBS		11,577.4	11,876.61
282	275	Casing Joints	5.500	20.00	P-110	Yes	44.22	Yes	SBBS		11,533.2	11,920.83
283	276	Casing Joints	5.500	20.00	P-110	Yes	44.34	Yes	SBBS		11,488.8	11,965.17
284	277	Casing Joints	5.500	20.00	P-110	Yes	39.78	Yes	SBBS		11,449.1	12,004.95
285		Floatation Collar	5.500	20.00		Yes	2.05	No	Floatation Sub (Air lock sub)		11,447.0	12,007.00

Casing Offload Tally

Well Name: TIMMY MINCH OHI 8 **Production, Set Depth: 23,454.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003350000	4001164218	SWN PRODUCTION COMPANY L...	1,208.30	25.70	1,234.00 KB1,6/28/2016 07:06	5/16/2022 23:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
286	278	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		11,402.7	12,051.35
287	279	Casing Joints	5.500	20.00	P-110	Yes	39.66	Yes	SBBS 280		11,363.0	12,091.01
288	280	Casing Joints	5.500	20.00	P-110	Yes	38.00	Yes	SBBS		11,325.0	12,129.01
289	281	Casing Joints	5.500	20.00	P-110	Yes	44.36	Yes	SBBS		11,280.6	12,173.37
290	282	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		11,236.3	12,217.72
291	283	Casing Joints	5.500	20.00	P-110	Yes	42.59	Yes	SBBS		11,193.7	12,260.31
292	284	Casing Joints	5.500	20.00	P-110	Yes	42.04	Yes	SBBS		11,151.7	12,302.35
293	285	Casing Joints	5.500	20.00	P-110	Yes	39.48	Yes	SBBS		11,112.2	12,341.83
294	286	Casing Joints	5.500	20.00	P-110	Yes	38.50	Yes	SBBS		11,073.7	12,380.33
295	287	Casing Joints	5.500	20.00	P-110	Yes	43.00	Yes	SBBS		11,030.7	12,423.33
296	288	Casing Joints	5.500	20.00	P-110	Yes	38.87	Yes	SBBS		10,991.8	12,462.20
297	289	Casing Joints	5.500	20.00	P-110	Yes	44.50	Yes	SBBS 290		10,947.3	12,506.70
298	290	Casing Joints	5.500	20.00	P-110	Yes	39.99	Yes	SBBS		10,907.3	12,546.69
299	291	Casing Joints	5.500	20.00	P-110	Yes	39.39	Yes	SBBS		10,867.9	12,586.08
300	292	Casing Joints	5.500	20.00	P-110	Yes	43.40	Yes	SBBS		10,824.5	12,629.48
301	293	Casing Joints	5.500	20.00	P-110	Yes	39.80	Yes	SBBS		10,784.7	12,669.28
302	294	Casing Joints	5.500	20.00	P-110	Yes	44.04	Yes	SBBS		10,740.7	12,713.32
303	295	Casing Joints	5.500	20.00	P-110	Yes	43.76	Yes	SBBS		10,696.9	12,757.08
304	296	Casing Joints	5.500	20.00	P-110	Yes	43.50	Yes	SBBS		10,653.4	12,800.58
305	297	Casing Joints	5.500	20.00	P-110	Yes	43.68	Yes	SBBS		10,609.7	12,844.26
306	298	Casing Joints	5.500	20.00	P-110	Yes	44.19	Yes	SBBS		10,565.6	12,888.45
307	299	Casing Joints	5.500	20.00	P-110	Yes	39.93	Yes	SBBS 300		10,525.6	12,928.38
308	300	Casing Joints	5.500	20.00	P-110	Yes	44.41	Yes	SBBS		10,481.2	12,972.79
309	301	Casing Joints	5.500	20.00	P-110	Yes	44.11	Yes	SBBS		10,437.1	13,016.90
310	302	Casing Joints	5.500	20.00	P-110	Yes	41.05	Yes	SBBS		10,396.1	13,057.95
311	303	Casing Joints	5.500	20.00	P-110	Yes	43.45	Yes	SBBS		10,352.6	13,101.40
312	304	Casing Joints	5.500	20.00	P-110	Yes	44.34	Yes	SBBS		10,308.3	13,145.74
313	305	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		10,263.9	13,190.09
314	306	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		10,219.6	13,234.44
315	307	Casing Joints	5.500	20.00	P-110	Yes	43.20	Yes	SBBS		10,176.4	13,277.64
316	308	Casing Joints	5.500	20.00	P-110	Yes	43.41	Yes	SBBS		10,133.0	13,321.05
317	309	Casing Joints	5.500	20.00	P-110	Yes	44.36	Yes	SBBS 310		10,088.6	13,365.41
318	310	Casing Joints	5.500	20.00	P-110	Yes	42.25	Yes	SBBS		10,046.3	13,407.66
319	311	Casing Joints	5.500	20.00	P-110	Yes	44.30	Yes	SBBS		10,002.0	13,451.96
320	312	Casing Joints	5.500	20.00	P-110	Yes	44.34	Yes	SBBS		9,957.7	13,496.30
321	313	Casing Joints	5.500	20.00	P-110	Yes	39.18	Yes	SBBS		9,918.5	13,535.48
322	314	Casing Joints	5.500	20.00	P-110	Yes	43.80	Yes	SBBS		9,874.7	13,579.28
323	315	Casing Joints	5.500	20.00	P-110	Yes	44.00	Yes	SBBS		9,830.7	13,623.28
324	316	Casing Joints	5.500	20.00	P-110	Yes	43.72	Yes	SBBS		9,787.0	13,667.00
325	317	Casing Joints	5.500	20.00	P-110	Yes	44.49	Yes	SBBS		9,742.5	13,711.49
326	318	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		9,698.2	13,755.84
327	319	Casing Joints	5.500	20.00	P-110	Yes	44.45	Yes	SBBS 320		9,653.7	13,800.29
328	320	Casing Joints	5.500	20.00	P-110	Yes	43.62	Yes	SBBS		9,610.1	13,843.91
329	321	Casing Joints	5.500	20.00	P-110	Yes	44.45	Yes	SBBS		9,565.6	13,888.36
330	322	Casing Joints	5.500	20.00	P-110	Yes	41.99	Yes	SBBS		9,523.7	13,930.35
331	323	Casing Joints	5.500	20.00	P-110	Yes	44.18	Yes	SBBS		9,479.5	13,974.53
332	324	Casing Joints	5.500	20.00	P-110	Yes	44.49	Yes	SBBS		9,435.0	14,019.02
333	325	Casing Joints	5.500	20.00	P-110	Yes	44.45	Yes	SBBS		9,390.5	14,063.47
334	326	Casing Joints	5.500	20.00	P-110	Yes	44.40	Yes	SBBS		9,346.1	14,107.87
335	327	Casing Joints	5.500	20.00	P-110	Yes	38.47	Yes	SBBS		9,307.7	14,146.34
336	328	Casing Joints	5.500	20.00	P-110	Yes	39.26	Yes	SBBS		9,268.4	14,185.60
337	329	Casing Joints	5.500	20.00	P-110	Yes	42.15	Yes	SBBS 330		9,226.3	14,227.75
338	330	Casing Joints	5.500	20.00	P-110	Yes	44.36	Yes	SBBS		9,181.9	14,272.11
339	331	Casing Joints	5.500	20.00	P-110	Yes	44.42	Yes	SBBS		9,137.5	14,316.53
339	332	Casing Joints	5.500	20.00	P-110	No	44.33	Yes	SBBS -- OUT#1 DAMAGED		9,093.1	14,360.86
340	333	Casing Joints	5.500	20.00	P-110	Yes	44.46	Yes	SBBS		9,093.0	14,360.99
341	334	Casing Joints	5.500	20.00	P-110	Yes	43.42	Yes	SBBS		9,049.6	14,404.41
342	335	Casing Joints	5.500	20.00	P-110	Yes	40.66	Yes	SBBS		9,008.9	14,445.07
343	336	Casing Joints	5.500	20.00	P-110	Yes	44.47	Yes	SBBS		8,964.5	14,489.54
344	337	Casing Joints	5.500	20.00	P-110	Yes	43.60	Yes	SBBS		8,920.9	14,533.14
345	338	Casing Joints	5.500	20.00	P-110	Yes	43.43	Yes	SBBS		8,877.4	14,576.57
346	339	Casing Joints	5.500	20.00	P-110	Yes	39.83	Yes	SBBS 340		8,837.6	14,616.40
347	340	Casing Joints	5.500	20.00	P-110	Yes	44.44	Yes	SBBS		8,793.2	14,660.84
348	341	Casing Joints	5.500	20.00	P-110	Yes	44.16	Yes	SBBS		8,749.0	14,705.00
349	342	Casing Joints	5.500	20.00	P-110	Yes	44.06	Yes	SBBS		8,704.9	14,749.06
350	343	Casing Joints	5.500	20.00	P-110	Yes	42.33	Yes	SBBS		8,662.6	14,791.39
351	344	Casing Joints	5.500	20.00	P-110	Yes	44.24	Yes	SBBS		8,618.4	14,835.63
352	345	Casing Joints	5.500	20.00	P-110	Yes	43.95	Yes	SBBS		8,574.4	14,879.58
353	346	Casing Joints	5.500	20.00	P-110	Yes	44.47	Yes	SBBS		8,530.0	14,924.05
354	347	Casing Joints	5.500	20.00	P-110	Yes	42.92	Yes	SBBS		8,487.0	14,966.97
355	348	Casing Joints	5.500	20.00	P-110	Yes	42.75	Yes	SBBS		8,444.3	15,009.72
356	349	Casing Joints	5.500	20.00	P-110	Yes	44.01	Yes	SBBS 350		8,400.3	15,053.73
357	350	Casing Joints	5.500	20.00	P-110	Yes	43.45	Yes	SBBS		8,356.8	15,097.18
358	351	Casing Joints	5.500	20.00	P-110	Yes	44.11	Yes	SBBS		8,312.7	15,141.29

Casing Offload Tally

Well Name: TIMMY MINCH OHI 8 **Production, Set Depth: 23,454.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003350000	4001164218	SWN PRODUCTION COMPANY L...	1,208.30	25.70	1,234.00 KB1,6/28/2016 07:06	5/16/2022 23:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
359	352	Casing Joints	5.500	20.00	P-110	Yes	41.15	Yes	SBBS		8,271.6	15,182.44
360	353	Casing Joints	5.500	20.00	P-110	Yes	43.00	Yes	SBBS		8,228.6	15,225.44
361	354	Casing Joints	5.500	20.00	P-110	Yes	42.34	Yes	SBBS		8,186.2	15,267.78
362	355	Casing Joints	5.500	20.00	P-110	Yes	40.91	Yes	SBBS		8,145.3	15,308.69
363	356	Casing Joints	5.500	20.00	P-110	Yes	44.12	Yes	SBBS		8,101.2	15,352.81
364	357	Casing Joints	5.500	20.00	P-110	Yes	38.87	Yes	SBBS		8,062.3	15,391.68
365	358	Casing Joints	5.500	20.00	P-110	Yes	39.68	Yes	SBBS		8,022.6	15,431.36
366	359	Casing Joints	5.500	20.00	P-110	Yes	43.08	Yes	SBBS 360		7,979.6	15,474.44
367	360	Casing Joints	5.500	20.00	P-110	Yes	43.51	Yes	SBBS		7,936.1	15,517.95
368	361	Casing Joints	5.500	20.00	P-110	Yes	41.99	Yes	SBBS		7,894.1	15,559.94
369	362	Casing Joints	5.500	20.00	P-110	Yes	44.50	Yes	SBBS		7,849.6	15,604.44
370	363	Casing Joints	5.500	20.00	P-110	Yes	42.50	Yes	SBBS		7,807.1	15,646.94
371	364	Casing Joints	5.500	20.00	P-110	Yes	44.48	Yes	SBBS		7,762.6	15,691.42
372	365	Casing Joints	5.500	20.00	P-110	Yes	44.47	Yes	SBBS		7,718.1	15,735.89
373	366	Casing Joints	5.500	20.00	P-110	Yes	41.58	Yes	SBBS		7,676.5	15,777.47
374	367	Casing Joints	5.500	20.00	P-110	Yes	44.46	Yes	SBBS		7,632.1	15,821.93
375	368	Casing Joints	5.500	20.00	P-110	Yes	44.17	Yes	SBBS		7,587.9	15,866.10
376	369	Casing Joints	5.500	20.00	P-110	Yes	43.64	Yes	SBBS 370		7,544.3	15,909.74
377	370	Casing Joints	5.500	20.00	P-110	Yes	44.67	Yes	SBBS		7,499.6	15,954.41
378	371	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		7,455.2	15,998.76
379	372	Casing Joints	5.500	20.00	P-110	Yes	44.49	Yes	SBBS		7,410.8	16,043.25
380	373	Casing Joints	5.500	20.00	P-110	Yes	44.45	Yes	SBBS		7,366.3	16,087.70
381	374	Casing Joints	5.500	20.00	P-110	Yes	44.46	Yes	SBBS		7,321.8	16,132.16
382	375	Casing Joints	5.500	20.00	P-110	Yes	44.40	Yes	SBBS		7,277.4	16,176.56
383	376	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		7,233.1	16,220.91
384	377	Casing Joints	5.500	20.00	P-110	Yes	44.64	Yes	SBBS		7,188.5	16,265.55
385	378	Casing Joints	5.500	20.00	P-110	Yes	44.66	Yes	SBBS		7,143.8	16,310.21
386	379	Casing Joints	5.500	20.00	P-110	Yes	41.33	Yes	SBBS 380		7,102.5	16,351.54
387	380	Casing Joints	5.500	20.00	P-110	Yes	42.20	Yes	SBBS		7,060.3	16,393.74
388	381	Casing Joints	5.500	20.00	P-110	Yes	40.27	Yes	SBBS		7,020.0	16,434.01
389	382	Casing Joints	5.500	20.00	P-110	Yes	44.30	Yes	SBBS		6,975.7	16,478.31
390	383	Casing Joints	5.500	20.00	P-110	Yes	44.45	Yes	SBBS		6,931.2	16,522.76
391	384	Casing Joints	5.500	20.00	P-110	Yes	43.67	Yes	SBBS		6,887.6	16,566.43
392	385	Casing Joints	5.500	20.00	P-110	Yes	44.25	Yes	SBBS		6,843.3	16,610.68
393	386	Casing Joints	5.500	20.00	P-110	Yes	44.33	Yes	SBBS		6,799.0	16,655.01
394	387	Casing Joints	5.500	20.00	P-110	Yes	44.63	Yes	SBBS		6,754.4	16,699.64
395	388	Casing Joints	5.500	20.00	P-110	Yes	44.45	Yes	SBBS		6,709.9	16,744.09
396	389	Casing Joints	5.500	20.00	P-110	Yes	44.46	Yes	SBBS		6,665.5	16,788.55
397		Marker Joint	5.500	20.00		Yes	20.85	Yes	Marker Joint #3 LP SBBS 390		6,644.6	16,809.40
398	390	Casing Joints	5.500	20.00	P-110	Yes	43.52	Yes	SBBS		6,601.1	16,852.92
399	391	Casing Joints	5.500	20.00	P-110	Yes	43.44	Yes	SBBS		6,557.6	16,896.36
400	392	Casing Joints	5.500	20.00	P-110	Yes	43.46	Yes	SBBS		6,514.2	16,939.82
401	393	Casing Joints	5.500	20.00	P-110	Yes	44.46	Yes	SBBS		6,469.7	16,984.28
402	394	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		6,425.4	17,028.63
403	395	Casing Joints	5.500	20.00	P-110	Yes	44.29	Yes	SBBS		6,381.1	17,072.92
404	396	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		6,336.7	17,117.27
405	397	Casing Joints	5.500	20.00	P-110	Yes	44.32	Yes	SBBS		6,292.4	17,161.59
406	398	Casing Joints	5.500	20.00	P-110	Yes	39.61	Yes	SBBS 400		6,252.8	17,201.20
407	399	Casing Joints	5.500	20.00	P-110	Yes	44.63	Yes	SBBS		6,208.2	17,245.83
408	400	Casing Joints	5.500	20.00	P-110	Yes	44.43	Yes	SBBS		6,163.7	17,290.26
409	401	Casing Joints	5.500	20.00	P-110	Yes	39.89	Yes	SBBS		6,123.9	17,330.15
410	402	Casing Joints	5.500	20.00	P-110	Yes	44.16	Yes	SBBS		6,079.7	17,374.31
411	403	Casing Joints	5.500	20.00	P-110	Yes	41.95	Yes	SBBS		6,037.7	17,416.26
412	404	Casing Joints	5.500	20.00	P-110	Yes	41.46	Yes	SBBS		5,996.3	17,457.72
413	405	Casing Joints	5.500	20.00	P-110	Yes	44.34	Yes	SBBS		5,951.9	17,502.06
414	406	Casing Joints	5.500	20.00	P-110	Yes	44.47	Yes	SBBS		5,907.5	17,546.53
415	407	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		5,863.1	17,590.88
416	408	Casing Joints	5.500	20.00	P-110	Yes	44.45	Yes	SBBS 410		5,818.7	17,635.33
417	409	Casing Joints	5.500	20.00	P-110	Yes	44.44	Yes	SBBS		5,774.2	17,679.77
418	410	Casing Joints	5.500	20.00	P-110	Yes	44.47	Yes	SBBS		5,729.8	17,724.24
419	411	Casing Joints	5.500	20.00	P-110	Yes	44.48	Yes	SBBS		5,685.3	17,768.72
420	412	Casing Joints	5.500	20.00	P-110	Yes	44.42	Yes	SBBS		5,640.9	17,813.14
421	413	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		5,596.5	17,857.49
422	414	Casing Joints	5.500	20.00	P-110	Yes	44.30	Yes	SBBS		5,552.2	17,901.79
423	415	Casing Joints	5.500	20.00	P-110	Yes	43.07	Yes	SBBS		5,509.1	17,944.86
424	416	Casing Joints	5.500	20.00	P-110	Yes	39.50	Yes	SBBS		5,469.6	17,984.36
425	417	Casing Joints	5.500	20.00	P-110	Yes	44.18	Yes	SBBS		5,425.5	18,028.54
426	418	Casing Joints	5.500	20.00	P-110	Yes	42.68	Yes	SBBS Start 8 1/2" centralizers		5,382.8	18,071.22
427	419	Casing Joints	5.500	20.00	P-110	Yes	44.35	No			5,338.4	18,115.57
428	420	Casing Joints	5.500	20.00	P-110	Yes	44.70	No			5,293.7	18,160.27

Casing Offload Tally

Well Name: TIMMY MINCH OHI 8 **Production, Set Depth: 23,454.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003350000	4001164218	SWN PRODUCTION COMPANY L...	1,208.30	25.70	1,234.00 KB1,6/28/2016 07:06	5/16/2022 23:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
429		Marker Joint	5.500	20.00		Yes	21.55	Yes	Marker Joint #4 KOP SBBS 420 Last of 8 1/4"		5,272.2	18,181.82
430	421	Casing Joints	5.500	20.00	P-110	Yes	44.34	Yes	SBBS		5,227.8	18,226.16
431	422	Casing Joints	5.500	20.00	P-110	Yes	44.03	No			5,183.8	18,270.19
432	423	Casing Joints	5.500	20.00	P-110	Yes	43.32	No			5,140.5	18,313.51
433	424	Casing Joints	5.500	20.00	P-110	Yes	44.46	Yes	SBBS		5,096.0	18,357.97
434	425	Casing Joints	5.500	20.00	P-110	Yes	44.45	No			5,051.6	18,402.42
435	426	Casing Joints	5.500	20.00	P-110	Yes	44.34	No			5,007.2	18,446.76
436	427	Casing Joints	5.500	20.00	P-110	Yes	38.16	Yes	SBBS		4,969.1	18,484.92
437	428	Casing Joints	5.500	20.00	P-110	Yes	43.48	No			4,925.6	18,528.40
438	429	Casing Joints	5.500	20.00	P-110	Yes	43.22	No			4,882.4	18,571.62
439	430	Casing Joints	5.500	20.00	P-110	Yes	43.62	Yes	SBBS		4,838.8	18,615.24
440	431	Casing Joints	5.500	20.00	P-110	Yes	44.35	No			4,794.4	18,659.59
441	432	Casing Joints	5.500	20.00	P-110	Yes	43.41	No			4,751.0	18,703.00
442	433	Casing Joints	5.500	20.00	P-110	Yes	43.18	Yes	SBBS		4,707.8	18,746.18
443	434	Casing Joints	5.500	20.00	P-110	Yes	44.26	No			4,663.6	18,790.44
444	435	Casing Joints	5.500	20.00	P-110	Yes	44.21	No			4,619.4	18,834.65
445	436	Casing Joints	5.500	20.00	P-110	Yes	43.55	Yes	SBBS		4,575.8	18,878.20
446	437	Casing Joints	5.500	20.00	P-110	Yes	43.60	No			4,532.2	18,921.80
447	438	Casing Joints	5.500	20.00	P-110	Yes	44.22	No			4,488.0	18,966.02
448	439	Casing Joints	5.500	20.00	P-110	Yes	44.15	Yes	SBBS		4,443.8	19,010.17
449	440	Casing Joints	5.500	20.00	P-110	Yes	44.63	No			4,399.2	19,054.80
450	441	Casing Joints	5.500	20.00	P-110	Yes	40.42	No			4,358.8	19,095.22
451	442	Casing Joints	5.500	20.00	P-110	Yes	44.48	Yes	SBBS		4,314.3	19,139.70
452	443	Casing Joints	5.500	20.00	P-110	Yes	40.92	No			4,273.4	19,180.62
453	444	Casing Joints	5.500	20.00	P-110	Yes	40.95	No			4,232.4	19,221.57
454	445	Casing Joints	5.500	20.00	P-110	Yes	43.48	Yes	SBBS 10		4,189.0	19,265.05
455	446	Casing Joints	5.500	20.00	P-110	Yes	43.49	No			4,145.5	19,308.54
456	447	Casing Joints	5.500	20.00	P-110	Yes	44.34	No			4,101.1	19,352.88
457	448	Casing Joints	5.500	20.00	P-110	Yes	43.67	Yes	SBBS		4,057.5	19,396.55
458	449	Casing Joints	5.500	20.00	P-110	Yes	41.67	No			4,015.8	19,438.22
459	450	Casing Joints	5.500	20.00	P-110	Yes	39.00	No			3,976.8	19,477.22
460	451	Casing Joints	5.500	20.00	P-110	Yes	43.37	Yes	SBBS		3,933.4	19,520.59
461	452	Casing Joints	5.500	20.00	P-110	Yes	40.62	No			3,892.8	19,561.21
462	453	Casing Joints	5.500	20.00	P-110	Yes	44.25	No			3,848.5	19,605.46
463	454	Casing Joints	5.500	20.00	P-110	Yes	43.90	Yes	SBBS		3,804.6	19,649.36
464	455	Casing Joints	5.500	20.00	P-110	Yes	42.64	No			3,762.0	19,692.00
465	456	Casing Joints	5.500	20.00	P-110	Yes	39.13	No			3,722.9	19,731.13
466	457	Casing Joints	5.500	20.00	P-110	Yes	39.57	Yes	SBBS		3,683.3	19,770.70
467	458	Casing Joints	5.500	20.00	P-110	Yes	44.48	No			3,638.8	19,815.18
468	459	Casing Joints	5.500	20.00	P-110	Yes	44.46	No			3,594.4	19,859.64
469	460	Casing Joints	5.500	20.00	P-110	Yes	44.61	Yes	SBBS		3,549.8	19,904.25
470	461	Casing Joints	5.500	20.00	P-110	Yes	42.96	No			3,506.8	19,947.21
471	462	Casing Joints	5.500	20.00	P-110	Yes	44.49	No			3,462.3	19,991.70
472	463	Casing Joints	5.500	20.00	P-110	Yes	44.25	Yes	SBBS		3,418.1	20,035.95
473	464	Casing Joints	5.500	20.00	P-110	Yes	38.54	No			3,379.5	20,074.49
474	465	Casing Joints	5.500	20.00	P-110	Yes	44.46	No			3,335.1	20,118.95
475	466	Casing Joints	5.500	20.00	P-110	Yes	43.47	Yes	SBBS		3,291.6	20,162.42
476	467	Casing Joints	5.500	20.00	P-110	Yes	44.15	No			3,247.4	20,206.57
477	468	Casing Joints	5.500	20.00	P-110	Yes	43.81	No			3,203.6	20,250.38
478	469	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS		3,159.3	20,294.73
479	470	Casing Joints	5.500	20.00	P-110	Yes	44.31	No			3,115.0	20,339.04
480	471	Casing Joints	5.500	20.00	P-110	Yes	43.48	No			3,071.5	20,382.52
481	472	Casing Joints	5.500	20.00	P-110	Yes	44.47	Yes	SBBS		3,027.0	20,426.99
482	473	Casing Joints	5.500	20.00	P-110	Yes	44.07	No			2,982.9	20,471.06
483	474	Casing Joints	5.500	20.00	P-110	Yes	39.53	No			2,943.4	20,510.59
484	475	Casing Joints	5.500	20.00	P-110	Yes	44.36	Yes	SBBS 20		2,899.1	20,554.95
485	476	Casing Joints	5.500	20.00	P-110	Yes	43.36	No			2,855.7	20,598.31
486	477	Casing Joints	5.500	20.00	P-110	Yes	43.49	No			2,812.2	20,641.80
487	478	Casing Joints	5.500	20.00	P-110	Yes	44.12	Yes	SBBS		2,768.1	20,685.92
488	479	Casing Joints	5.500	20.00	P-110	Yes	42.15	No			2,725.9	20,728.07
489	480	Casing Joints	5.500	20.00	P-110	Yes	39.96	No			2,686.0	20,768.03
490	481	Casing Joints	5.500	20.00	P-110	Yes	39.47	Yes	SBBS		2,646.5	20,807.50
491	482	Casing Joints	5.500	20.00	P-110	Yes	44.47	No			2,602.0	20,851.97
492	483	Casing Joints	5.500	20.00	P-110	Yes	43.42	No			2,558.6	20,895.39
493	484	Casing Joints	5.500	20.00	P-110	Yes	43.65	Yes	SBBS		2,515.0	20,939.04
494	485	Casing Joints	5.500	20.00	P-110	Yes	43.46	No			2,471.5	20,982.50
495	486	Casing Joints	5.500	20.00	P-110	Yes	43.51	No			2,428.0	21,026.01
496	487	Casing Joints	5.500	20.00	P-110	Yes	40.12	Yes	SBBS		2,387.9	21,066.13
497	488	Casing Joints	5.500	20.00	P-110	Yes	44.35	No			2,343.5	21,110.48
498	489	Casing Joints	5.500	20.00	P-110	Yes	43.38	No			2,300.1	21,153.86
499	490	Casing Joints	5.500	20.00	P-110	Yes	38.17	Yes	SBBS		2,262.0	21,192.03
500	491	Casing Joints	5.500	20.00	P-110	Yes	38.09	No			2,223.9	21,230.12

Casing Offload Tally

Well Name: TIMMY MINCH OHI 8 **Production, Set Depth: 23,454.00ftKB**

Well API Number	Well RC Number	Operator	Ground Elevation (ft)	KB Elv - Ground Distance (ft)	KB Elv History Link	Spud Date
47069003350000	4001164218	SWN PRODUCTION COMPANY L...	1,208.30	25.70	1,234.00 KB1,6/28/2016 07:06	5/16/2022 23:00
Country	**State/Province**	**County**	**Field**	**Area**	**Prospect**	**Operations Status**
US	WV	OHIO	PANHANDLE FIELD WET	PANHANDLE AREA	PANHANDLE	Drilling

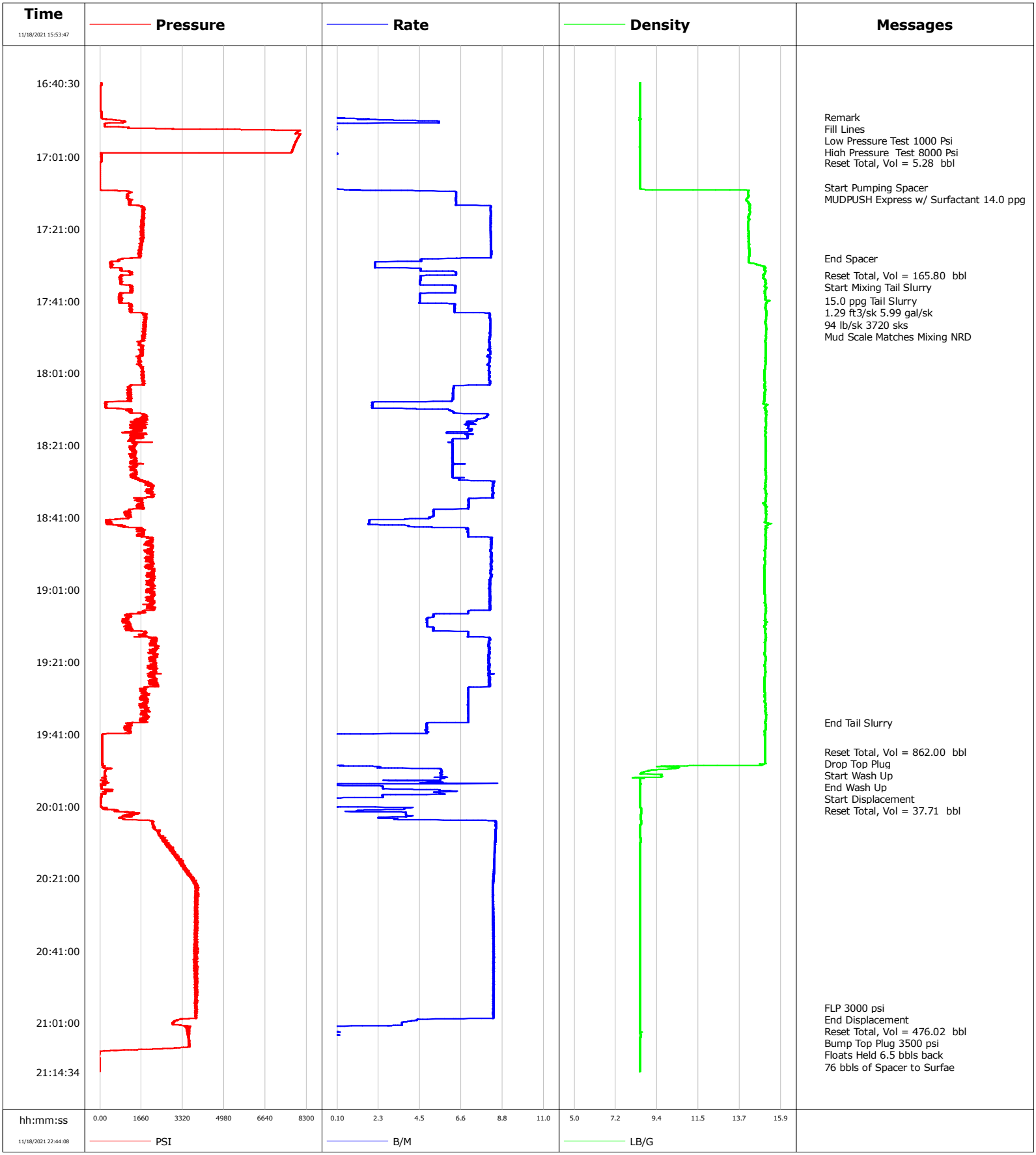
Casing Run Tally

Run #	Ref #	Item Des	OD (in)	Wt (lb/ft)	Grade	Run?	Len (ft)	Centralized?	Ext Jwlry	Connections	Top (ftKB)	Cum Len (ft)
501	492	Casing Joints	5.500	20.00	P-110	Yes	44.04	No			2,179.8	21,274.16
502	493	Casing Joints	5.500	20.00	P-110	Yes	43.66	Yes	SBBS		2,136.2	21,317.82
503	494	Casing Joints	5.500	20.00	P-110	Yes	43.63	No			2,092.6	21,361.45
504	495	Casing Joints	5.500	20.00	P-110	Yes	42.48	No			2,050.1	21,403.93
505	496	Casing Joints	5.500	20.00	P-110	Yes	38.53	Yes	SBBS		2,011.5	21,442.46
506	497	Casing Joints	5.500	20.00	P-110	Yes	40.16	No			1,971.4	21,482.62
507	498	Casing Joints	5.500	20.00	P-110	Yes	42.66	No			1,928.7	21,525.28
508	499	Casing Joints	5.500	20.00	P-110	Yes	39.97	Yes	SBBS		1,888.8	21,565.25
509	500	Casing Joints	5.500	20.00	P-110	Yes	41.60	No			1,847.2	21,606.85
510	501	Casing Joints	5.500	20.00	P-110	Yes	44.04	No			1,803.1	21,650.89
511	502	Casing Joints	5.500	20.00	P-110	Yes	43.30	Yes	SBBS		1,759.8	21,694.19
512	503	Casing Joints	5.500	20.00	P-110	Yes	44.21	No			1,715.6	21,738.40
513	504	Casing Joints	5.500	20.00	P-110	Yes	44.69	No			1,670.9	21,783.09
514	505	Casing Joints	5.500	20.00	P-110	Yes	44.67	Yes	SBBS 30		1,626.2	21,827.76
515	506	Casing Joints	5.500	20.00	P-110	Yes	44.30	No			1,581.9	21,872.06
516	507	Casing Joints	5.500	20.00	P-110	Yes	44.10	No			1,537.8	21,916.16
517	508	Casing Joints	5.500	20.00	P-110	Yes	44.31	Yes	SBBS		1,493.5	21,960.47
518	509	Casing Joints	5.500	20.00	P-110	Yes	39.85	No			1,453.7	22,000.32
519	510	Casing Joints	5.500	20.00	P-110	Yes	42.78	No			1,410.9	22,043.10
520	511	Casing Joints	5.500	20.00	P-110	Yes	40.54	Yes	SBBS		1,370.4	22,083.64
521	512	Casing Joints	5.500	20.00	P-110	Yes	44.36	No			1,326.0	22,128.00
522	513	Casing Joints	5.500	20.00	P-110	Yes	44.65	No			1,281.4	22,172.65
523	514	Casing Joints	5.500	20.00	P-110	Yes	44.44	Yes	SBBS		1,236.9	22,217.09
524	515	Casing Joints	5.500	20.00	P-110	Yes	41.17	No			1,195.7	22,258.26
525	516	Casing Joints	5.500	20.00	P-110	Yes	43.48	No			1,152.3	22,301.74
526	517	Casing Joints	5.500	20.00	P-110	Yes	38.65	Yes	SBBS		1,113.6	22,340.39
527	518	Casing Joints	5.500	20.00	P-110	Yes	44.34	No			1,069.3	22,384.73
528	519	Casing Joints	5.500	20.00	P-110	Yes	41.98	No			1,027.3	22,426.71
529	520	Casing Joints	5.500	20.00	P-110	Yes	41.19	Yes	SBBS		986.1	22,467.90
530	521	Casing Joints	5.500	20.00	P-110	Yes	39.93	No			946.2	22,507.83
531	522	Casing Joints	5.500	20.00	P-110	Yes	44.67	No			901.5	22,552.50
532	523	Casing Joints	5.500	20.00	P-110	Yes	43.39	Yes	SBBS		858.1	22,595.89
533	524	Casing Joints	5.500	20.00	P-110	Yes	43.40	No			814.7	22,639.29
534	525	Casing Joints	5.500	20.00	P-110	Yes	40.94	No			773.8	22,680.23
535	526	Casing Joints	5.500	20.00	P-110	Yes	43.46	Yes	SBBS		730.3	22,723.69
536	527	Casing Joints	5.500	20.00	P-110	Yes	44.13	No			686.2	22,767.82
537	528	Casing Joints	5.500	20.00	P-110	Yes	43.80	No			642.4	22,811.62
538	529	Casing Joints	5.500	20.00	P-110	Yes	44.47	Yes	SBBS		597.9	22,856.09
539	530	Casing Joints	5.500	20.00	P-110	Yes	44.38	No			553.5	22,900.47
540	531	Casing Joints	5.500	20.00	P-110	Yes	44.65	No			508.9	22,945.12
541	532	Casing Joints	5.500	20.00	P-110	Yes	44.45	Yes	SBBS		464.4	22,989.57
542	533	Casing Joints	5.500	20.00	P-110	Yes	44.14	No			420.3	23,033.71
543	534	Casing Joints	5.500	20.00	P-110	Yes	44.35	No			375.9	23,078.06
544	535	Casing Joints	5.500	20.00	P-110	Yes	41.30	Yes	SBBS 40		334.6	23,119.36
545	536	Casing Joints	5.500	20.00	P-110	Yes	44.46	No			290.2	23,163.82
546	537	Casing Joints	5.500	20.00	P-110	Yes	39.80	No			250.4	23,203.62
547	538	Casing Joints	5.500	20.00	P-110	Yes	44.35	Yes	SBBS 41		206.0	23,247.97
548	539	Casing Joints	5.500	20.00	P-110	Yes	39.47	No			166.6	23,287.44
549	546	Casing Joints	5.500	20.00	P-110	Yes	39.17	No	#546		127.4	23,326.61
550	544	Casing Joints	5.500	20.00	P-110	Yes	41.37	No	#544		86.0	23,367.98
551	540	Casing Joints	5.500	20.00	P-110	Yes	44.35	No	#540		41.7	23,412.33
552	541	Casing Joints	5.500	20.00	P-110	Yes	44.47	No	IN Replacing jt 332 #1		-2.8	23,456.80
	542	Casing Joints	5.500	20.00	P-110	No	44.09	No	OUT #2			
	543	Casing Joints	5.500	20.00	P-110	No	43.94	No	OUT #3			
	545	Casing Joints	5.500	20.00	P-110	No	44.38	No	OUT #4			
	547	Casing Joints	5.500	20.00	P-110	No	44.29	No	OUT #5			
	548	Casing Joints	5.500	20.00	P-110	No	44.32	No	OUT #6			
	549	Casing Joints	5.500	20.00	P-110	No	43.13	No	OUT #7			
	550	Casing Joints	5.500	20.00	P-110	No	44.48	No	OUT #8			
	551	Casing Joints	5.500	20.00	P-110	No	43.40	No	OUT #9			
		Marker Joint	5.500	20.00		No	21.22	No	Marker joint #5 OUT			

Schlumberger

Cementing Job Report

Well	O E Burge MSH 3H	**Client**	SWN Production Company
Field	Kausooth	**SIR No.**	EN82-01546
Engineer	Marco Arrington	**Job Type**	Cem Prod Casing
Country	United States	**Job Date**	11-18-2021



Schlumberger

Cementing Service Report

Customer	Job Number
SWN Production Company	EN82-01546

Well	Location (legal)	Schlumberger Location	Job Start
O E Burge MSH 3H 3H	O E Burge Pad		Nov/18/2021

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
Kausooth	Shale	deg	8.5 in	21486.0 ft	6235.0 ft

County	State/Provin	BHP	BHST	BHCT	Pore Press. Gradient
Marshall	West Virginia	psi	137 degF	137 degF	lb/gal

Well Master	API/UWI
0066447328	45-051-02414-00-00

Rig Name	Drilled For	Service Via
SDC #41	Gas	Land

Offshore Zone	Well Class	Well Type
	New	Exploration

Drilling Fluid Type	Max. Density	Plastic Viscosity
	lb/gal	cP

Service Line	Job Type
Cementing	Cem Prod Casing

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	

Service Instructions

Provide equipment, product, and service to cement 5 1/2" production casing in 8.75" x 8.5" OH at 21485'.
MW - 14.0 ppg
MUDPUSH Express w/ Surfactant - 165 bbls @ 14 ppg
15.0 ppg Tail 1.29 ft3/sk 5.99 gal/ 94lb/sk 3720 sks
Drop Bottom Plug
Displace 476 bbls of Freshwater 8.34 ppg
FLP 3000 psi Bump Top Plug To 3500 psi
76 bbls of MUDPUSH to surface
TOC 1850' @ 15.0 ppg with 10% xs

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
2741.0	9.6	36.0	J55	BUTT
21485.0	5.5	20.0	J55	BUTT

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Treat Down	Displacement	Packer Type	Packer Depth
Casing	456.0 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	477.0 bbl	912.0 bbl	779.0 bbl

Casing/Tubing Secured	1 Hole Vol. Circulated prior to Cement
☐	X

Lift Pressure	Pipe Rotated	Pipe Reciprocated
3000 psi	X	X

No. Centralizers	Top Plugs	Bottom Plugs
	1	1

Cement Head Type

Job Scheduled For	Arrived on Location	Leave Location
Nov/18/2021 11:00	Nov/18/2021 14:00	Nov/18/2021 22:00

Casing Tools

Shoe Type	Float
Shoe Depth	24437.0 ft
Stage Tool Type	
Stage Tool Depth	ft
Collar Type	Float
Collar Depth	21485.0 ft

Squeeze Job

Squeeze Type	
Tool Type	
Tool Depth	ft
Tail Pipe Size	in
Tail Pipe Depth	ft
Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
11/18/2021	15:53:47	159	0.0	8.43	Drop Top Plug
11/18/2021	15:55:52	26	0.1	8.46	
11/18/2021	15:57:57	65	0.0	8.46	
11/18/2021	16:00:02	58	0.0	8.46	
11/18/2021	16:02:07	51	0.0	8.46	
11/18/2021	16:04:12	49	0.0	8.45	
11/18/2021	16:06:17	45	0.0	8.45	
11/18/2021	16:08:22	50	0.0	8.46	
11/18/2021	16:10:27	52	0.0	8.46	
11/18/2021	16:12:32	54	0.0	8.46	
11/18/2021	16:14:37	53	0.0	8.46	
11/18/2021	16:16:42	55	0.0	8.46	
11/18/2021	16:18:47	53	0.0	8.46	
11/18/2021	16:20:52	51	0.0	8.46	
11/18/2021	16:22:57	51	0.0	8.46	
11/18/2021	16:25:02	50	0.0	8.46	
11/18/2021	16:27:07	51	0.0	8.46	
11/18/2021	16:29:12	49	0.0	8.46	
11/18/2021	16:31:17	49	0.0	8.46	
11/18/2021	16:33:22	47	0.0	8.46	
11/18/2021	16:35:27	49	0.0	8.46	

Well	Field	Job Start	Customer	Job Number
O E Burge MSH 3H 3H	Kausooth	Nov/18/2021	SWN Production Company	EN82-01546

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
11/18/2021	16:39:37	47	0.0	8.46	
11/18/2021	16:41:42	9	0.0	8.46	
11/18/2021	16:43:47	9	0.0	8.46	
11/18/2021	16:45:52	9	0.0	8.46	
11/18/2021	16:47:57	7	0.0	8.46	
11/18/2021	16:50:00	48	0.0	8.46	Remark
11/18/2021	16:50:02	48	0.0	8.46	
11/18/2021	16:50:55	669	3.3	8.44	Fill Lines
11/18/2021	16:52:07	183	0.0	8.46	
11/18/2021	16:52:08	183	0.0	8.46	Low Pressure Test 1000 Psi
11/18/2021	16:53:51	7996	0.0	8.46	High Pressure Test 8000 Psi
11/18/2021	16:54:12	7902	0.0	8.46	
11/18/2021	16:56:17	7902	0.0	8.46	
11/18/2021	16:58:22	7771	0.0	8.45	
11/18/2021	17:00:27	64	0.0	8.46	
11/18/2021	17:02:32	-0	0.0	8.46	
11/18/2021	17:02:36	0	0.0	8.46	Reset Total, Vol = 5.28 bbl
11/18/2021	17:04:37	-7	0.0	8.46	
11/18/2021	17:06:42	-9	0.0	8.46	
11/18/2021	17:08:47	-10	0.0	8.46	
11/18/2021	17:09:30	-11	0.0	8.45	Start Pumping Spacer
11/18/2021	17:10:00	-12	0.2	8.53	MUDPUSH Express w/ Surfactant 14.0 ppg
11/18/2021	17:10:52	1279	6.4	14.17	
11/18/2021	17:12:57	1172	6.3	14.07	
11/18/2021	17:15:02	1769	8.2	14.24	
11/18/2021	17:17:07	1706	8.2	14.22	
11/18/2021	17:19:12	1721	8.2	14.18	
11/18/2021	17:21:17	1743	8.2	14.14	
11/18/2021	17:23:22	1767	8.2	14.19	
11/18/2021	17:25:27	1675	8.2	14.21	
11/18/2021	17:27:32	1635	8.2	14.22	
11/18/2021	17:29:07	1294	6.5	14.21	End Spacer
11/18/2021	17:29:37	778	4.5	14.20	
11/18/2021	17:31:42	428	2.1	15.06	
11/18/2021	17:33:47	1178	6.4	14.95	
11/18/2021	17:33:52	887	5.0	14.96	Reset Total, Vol = 165.80 bbl
11/18/2021	17:35:00	872	4.5	15.05	Start Mixing Tail Slurry
11/18/2021	17:35:52	840	4.5	15.07	
11/18/2021	17:37:57	1342	6.3	15.07	
11/18/2021	17:40:02	791	4.5	15.07	
11/18/2021	17:40:56	825	4.4	15.30	15.0 ppg Tail Slurry
11/18/2021	17:41:22	867	4.4	15.14	1.29 ft3/sk 5.99 gal/sk
11/18/2021	17:42:00	1259	6.3	15.09	94 lb/sk 3720 sks
11/18/2021	17:42:07	1243	6.3	15.09	
11/18/2021	17:43:00	1216	6.3	15.07	Mud Scale Matches Mixing NRD
11/18/2021	17:44:12	1641	6.5	15.13	
11/18/2021	17:46:17	1837	8.2	15.10	
11/18/2021	17:48:22	1785	8.2	15.12	
11/18/2021	17:50:27	1751	8.2	15.10	
11/18/2021	17:52:32	1585	8.1	15.08	
11/18/2021	17:54:37	1692	8.1	15.08	
11/18/2021	17:56:42	1585	8.2	15.07	
11/18/2021	17:58:47	1619	8.1	15.07	
11/18/2021	18:02:57	1750	8.1	15.03	

Well	Field	Job Start	Customer	Job Number
O E Burge MSH 3H 3H	Kausooth	Nov/18/2021	SWN Production Company	EN82-01546

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
11/18/2021	18:07:07	1197	6.2	15.04	
11/18/2021	18:09:12	254	1.9	15.00	
11/18/2021	18:11:17	1182	6.0	15.07	
11/18/2021	18:13:22	1887	7.8	15.10	
11/18/2021	18:15:27	1299	7.0	15.11	
11/18/2021	18:17:32	1395	5.9	15.11	
11/18/2021	18:19:37	1362	6.2	15.08	
11/18/2021	18:21:42	1286	6.2	15.09	
11/18/2021	18:23:47	1203	6.2	15.09	
11/18/2021	18:25:52	1310	6.2	15.08	
11/18/2021	18:27:57	1239	6.2	15.07	
11/18/2021	18:30:02	1306	6.3	15.10	
11/18/2021	18:32:07	2099	8.3	15.07	
11/18/2021	18:34:12	2080	8.3	15.09	
11/18/2021	18:36:17	1388	7.0	15.09	
11/18/2021	18:38:22	1522	7.0	15.08	
11/18/2021	18:40:27	1242	5.2	15.11	
11/18/2021	18:42:32	331	1.8	15.21	
11/18/2021	18:44:37	1779	7.0	15.10	
11/18/2021	18:46:42	1953	8.2	15.09	
11/18/2021	18:48:47	2066	8.2	15.07	
11/18/2021	18:50:52	2109	8.2	15.06	
11/18/2021	18:52:57	2067	8.2	15.05	
11/18/2021	18:55:02	2077	8.2	15.02	
11/18/2021	18:57:07	1875	8.2	15.03	
11/18/2021	18:59:12	1918	8.2	15.03	
11/18/2021	19:01:17	2057	8.2	15.04	
11/18/2021	19:03:22	2135	8.1	15.05	
11/18/2021	19:05:27	2003	8.2	15.07	
11/18/2021	19:07:32	1491	7.0	15.09	
11/18/2021	19:09:37	994	4.8	15.04	
11/18/2021	19:11:42	1289	5.2	15.07	
11/18/2021	19:13:47	1661	7.0	15.08	
11/18/2021	19:15:52	2017	8.1	15.05	
11/18/2021	19:17:57	2026	8.1	15.05	
11/18/2021	19:20:02	2105	8.1	15.09	
11/18/2021	19:22:07	2261	8.1	15.04	
11/18/2021	19:24:12	2027	8.1	15.07	
11/18/2021	19:26:17	1998	8.1	15.03	
11/18/2021	19:28:22	1585	7.0	15.03	
11/18/2021	19:30:27	1873	7.0	15.04	
11/18/2021	19:32:32	1819	7.0	15.08	
11/18/2021	19:34:37	1760	7.0	15.06	
11/18/2021	19:36:42	1652	7.0	15.10	
11/18/2021	19:37:48	1336	6.3	15.06	End Tail Slurry
11/18/2021	19:38:47	1234	4.8	15.09	
11/18/2021	19:40:52	338	4.2	15.05	
11/18/2021	19:42:57	85	0.0	15.05	
11/18/2021	19:45:02	86	0.0	15.05	
11/18/2021	19:45:49	86	0.0	15.05	Reset Total, Vol = 862.00 bbl
11/18/2021	19:46:00	87	0.0	15.05	Drop Top Plug
11/18/2021	19:46:14	87	0.0	15.05	Start Wash Up
11/18/2021	19:47:07	87	0.0	15.05	
11/18/2021	19:49:12	107	0.0	15.07	

Well	Field	Job Start	Customer	Job Number
O E Burge MSH 3H 3H	Kausooth	Nov/18/2021	SWN Production Company	EN82-01546

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
11/18/2021	19:53:22	207	5.6	8.47	
11/18/2021	19:55:27	41	2.5	8.47	
11/18/2021	19:55:35	45	2.5	8.47	End Wash Up
11/18/2021	19:57:32	59	5.7	8.47	
11/18/2021	19:57:41	68	5.3	8.47	Start Displacement
11/18/2021	19:59:17	25	0.0	8.47	Reset Total, Vol = 37.71 bbl
11/18/2021	19:59:37	23	0.0	8.47	
11/18/2021	20:01:42	246	3.6	8.52	
11/18/2021	20:03:47	1070	3.8	8.50	
11/18/2021	20:05:52	2129	8.5	8.51	
11/18/2021	20:07:57	2314	8.4	8.47	
11/18/2021	20:10:02	2590	8.4	8.49	
11/18/2021	20:12:07	2737	8.4	8.47	
11/18/2021	20:14:12	3042	8.4	8.47	
11/18/2021	20:16:17	3205	8.4	8.47	
11/18/2021	20:18:22	3375	8.4	8.47	
11/18/2021	20:20:27	3642	8.3	8.47	
11/18/2021	20:22:32	3806	8.3	8.46	
11/18/2021	20:24:37	3857	8.3	8.47	
11/18/2021	20:26:42	3885	8.3	8.47	
11/18/2021	20:28:47	3831	8.3	8.46	
11/18/2021	20:30:52	3845	8.3	8.46	
11/18/2021	20:35:02	3854	8.3	8.46	
11/18/2021	20:37:07	3916	8.3	8.46	
11/18/2021	20:39:12	3868	8.3	8.46	
11/18/2021	20:41:17	3884	8.3	8.47	
11/18/2021	20:43:22	3822	8.4	8.46	
11/18/2021	20:45:27	3850	8.3	8.46	
11/18/2021	20:47:32	3849	8.3	8.47	
11/18/2021	20:49:37	3885	8.3	8.46	
11/18/2021	20:51:42	3839	8.3	8.47	
11/18/2021	20:53:47	3852	8.3	8.47	
11/18/2021	20:55:52	3844	8.3	8.47	
11/18/2021	20:56:47	3849	8.3	8.47	FLP 3000 psi
11/18/2021	20:57:37	3861	8.3	8.47	End Displacement
11/18/2021	20:57:54	3838	8.3	8.47	Reset Total, Vol = 476.02 bbl
11/18/2021	20:57:57	3856	8.3	8.47	Bump Top Plug 3500 psi
11/18/2021	21:00:02	3275	4.4	8.47	
11/18/2021	21:02:07	3620	0.0	8.47	
11/18/2021	21:04:12	3529	0.0	8.48	
11/18/2021	21:04:45	3576	0.0	8.48	Floats Held 6.5 bbls back
11/18/2021	21:06:17	3561	0.0	8.47	
11/18/2021	21:08:22	1687	0.0	8.47	
11/18/2021	21:10:27	-45	0.0	8.47	
11/18/2021	21:12:32	-31	0.0	8.47	
11/18/2021	21:14:37	-35	0.0	8.47	
11/18/2021	21:16:42	-41	0.0	8.47	
11/18/2021	21:18:47	177	0.0	8.48	
11/18/2021	21:20:52	-9	0.0	8.48	
11/18/2021	21:22:57	33	2.8	8.47	
11/18/2021	21:23:00	31	3.3	8.47	EOTC 1850 Ft
11/18/2021	21:25:02	307	8.1	8.47	
11/18/2021	21:27:07	-12	0.0	8.47	
11/18/2021	21:29:12	-15	0.0	8.47	

Well	Field	Job Start	Customer	Job Number
O E Burge MSH 3H 3H	Kausooth	Nov/18/2021	SWN Production Company	EN82-01546

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Message
11/18/2021	21:33:22	-43	0.0	8.45	
11/18/2021	21:35:27	-34	0.0	8.45	
11/18/2021	21:37:32	16	2.2	8.48	
11/18/2021	21:39:37	39	4.3	8.50	
11/18/2021	21:41:42	-85	1.0	8.55	
11/18/2021	21:43:47	65	0.2	8.51	
11/18/2021	21:45:52	189	7.5	8.49	
11/18/2021	21:47:57	217	7.9	8.51	
11/18/2021	21:50:02	130	7.4	8.49	
11/18/2021	21:52:07	245	8.2	8.48	
11/18/2021	21:54:12	122	7.4	8.46	
11/18/2021	21:56:17	180	7.5	8.47	
11/18/2021	21:58:22	-102	0.8	8.47	
11/18/2021	22:00:27	-95	0.8	8.46	
11/18/2021	22:02:32	-87	0.8	8.47	
11/18/2021	22:04:37	-66	0.0	8.47	
11/18/2021	22:06:42	-92	0.1	8.44	
11/18/2021	22:08:47	-90	0.0	7.54	
11/18/2021	22:10:52	-99	0.0	6.61	
11/18/2021	22:12:57	-98	0.0	6.80	
11/18/2021	22:15:02	-93	0.0	6.86	
11/18/2021	22:17:07	-90	0.0	6.90	
11/18/2021	22:19:12	-92	0.0	6.91	
11/18/2021	22:21:17	-96	0.0	6.92	
11/18/2021	22:23:22	-86	0.0	6.93	
11/18/2021	22:25:27	-86	0.0	0.06	
11/18/2021	22:27:32	-85	0.0	0.06	
11/18/2021	22:29:37	-85	0.0	0.06	
11/18/2021	22:31:42	-89	0.0	0.06	
11/18/2021	22:33:47	-31	0.0	0.06	
11/18/2021	22:35:52	-8	0.0	0.06	
11/18/2021	22:37:57	-10	0.0	0.06	
11/18/2021	22:40:02	-11	0.0	0.06	
11/18/2021	22:42:07	-11	0.0	0.06	

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
4.7			17.9	862.0	0.0	165.0	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
8076	-12	1600	3500		FreshWater	476.0 bbl	8.34 lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume
%	855.0 bbl	476.0 bbl	71 degF	☐	bbl
				Washed Thru Perfs ☐	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
	Marco Arrington	☐ -	☒ -

WW - 2B
(Rev. 8/10)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: Columbia Gas Transmission, LLC | 307032 (Operator ID) | Marshall (County) | Liberty (District) | Cameron, WV (Quadrangle)

2) Operator's Well Number: Victory B 4205 3) Elevation: 1139.5'

4) Well Type: (a) Oil _____ or Gas X

(b) If Gas: Production ____ / Underground Storage X

Deep _____ / Shallow X

5) Proposed Target Formation(s): Big Injun Proposed Target Depth: 1946'

6) Proposed Total Depth: 2276 Feet Formation at Proposed Total Depth: Big Injun

7) Approximate fresh water strata depths: N/A

8) Approximate salt water depths: N/A

9) Approximate coal seam depths: 503'; 693'-700'; 795'-800' (as reported by the driller in 1956).

10) Approximate void depths,(coal, Karst, other): None reported by the driller in 1956.

11) Does land contain coal seams tributary to active mine? Yes

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)

Re-perforate. Perform coiled tubing clean-out and acid wash.

*Casing listed below are existing. No plans to remove, alter, or install new casing/tubing.

13) **CASING AND TUBING PROGRAM**

TYPE SPECIFICATIONS FOOTAGE INTERVALS CEMENT

	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor						
Fresh Water	10-3/4"	H-40	32.75		190'	75 sx.
Coal	8-5/8"	J-55	24		1277'	225 sx.
Intermediate	7"	J-55	20		1941'	250 sx.
Production	4-1/2"	K-55	11.6		2276'	250 sx.
Tubing						
Liners						

Packers: Kind: N/A

Sizes:

Depths Set

WW-2A
(Rev. 6-14)

Commonwealth of Pennsylvania
County of

Commonwealth of Pennsylvania - Notary Seal
Elaine Rybski, Notary Public
Allegheny County
My commission expires May 11, 2022
Commission number 1332803
Member, Pennsylvania Association of Notaries

1). Date: 3/11/2022

2.) Operator's Well Number Victory B 4205

	State	County	Permit
3.) API Well No.:	47-	051	- 007190000

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE AND APPLICATION FOR A WELL WORK PERMIT

4) Surface Owner(s) to be served:
(a) Name George R. Cumpston
Address 584 Burtonwood Way
Cameron, WV 26033
(b) Name Nancy K. Cumpston
Address 584 Burtonwood Way
Cameron, WV 26033
(c) Name Gail K. Porter
Address 584 Burtonwood Way
Cameron, WV 26033
6) Inspector Gayne J. Knitowski
Address P.O. Box 108
Gormania, WV 26720
Telephone 304-546-8171

5) (a) Coal Operator
Name Marshall County Coal Resources, Inc.
Address 46226 National Road
St. Clairsville, OH 43950
(b) Coal Owner(s) with Declaration
Name Marshall County Coal Resources, Inc.
Address 46226 National Road
St. Clairsville, OH 43950
Name
Address
(c) Coal Lessee with Declaration
Name N/A
Address

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

___ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas

OR

x Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through ___ on the above named parties by:

___ Personal Service (Affidavit attached)
X Certified Mail (Postmarked postal receipt attached)
___ Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Commonwealth of Pennsylvania - Notary Seal
Elaine Rybski, Notary Public
Allegheny County
My commission expires May 11, 2022
Commission number 1332803
Member, Pennsylvania Association of Notaries

Well Operator Columbia Gas Transmission, LLC
By: Brad Nelson Brad Nel
Its: Storage Engineer
Address: 455 Racetrack Road
Washington, PA 15301
Telephone: 724-250-0610
Email: brad_nelson@tcenergy.com

Subscribed and sworn before me this 11 day of March, 2022

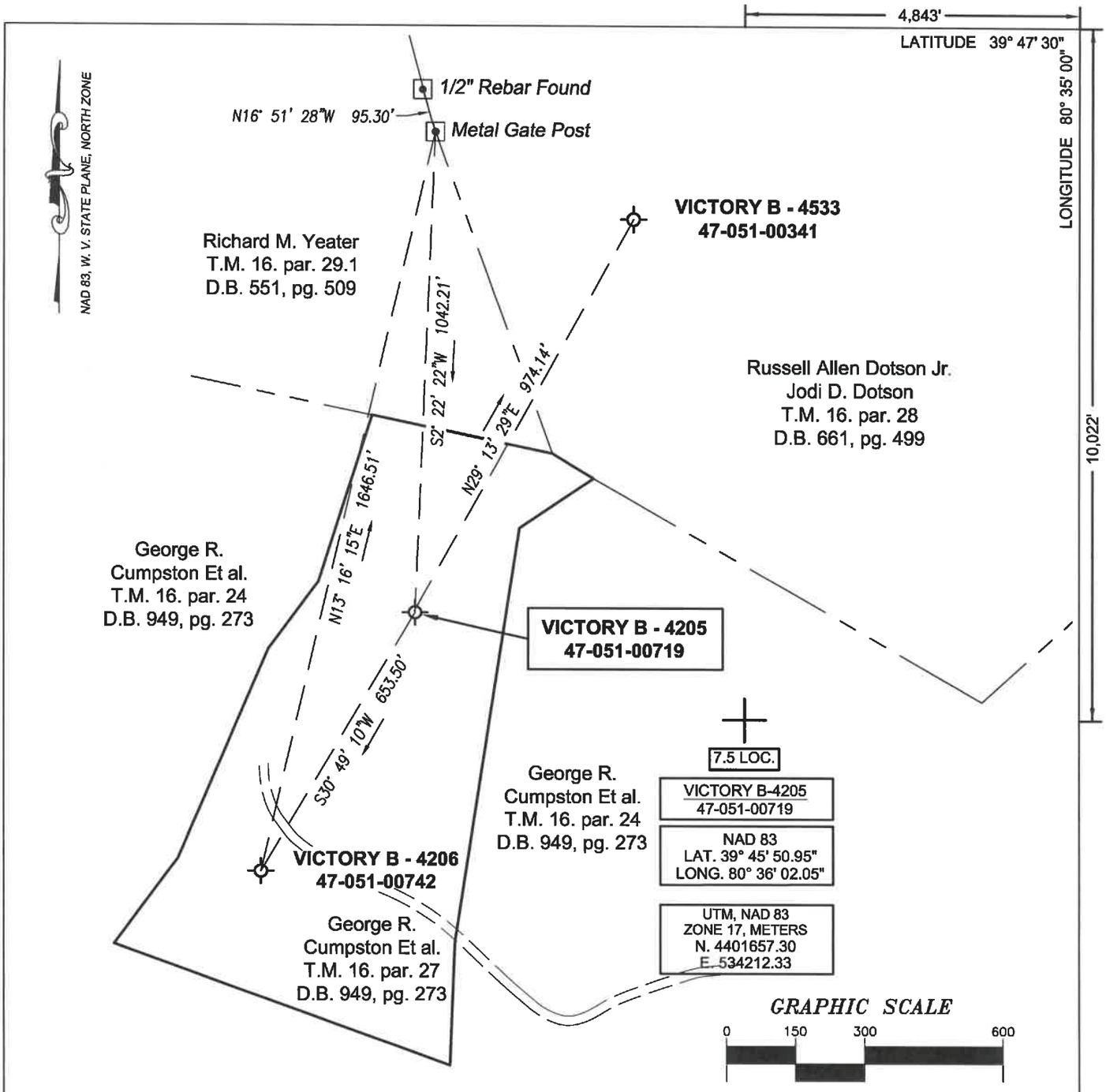
Elaine Rybski Notary Public

My Commission Expires 5/11/2022

Commonwealth of Pennsylvania
County of Allegheny

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE No 1701-2345-001-001
DRAWING No. VICTORY B-4205
SCALE 1"=300'
MINIMUM DEGREE OF ACCURACY 1:200
PROVEN SOURCE OF ELEVATION TRIMBLE R8-3 GPS UNIT

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

(SIGNED) _____
MARK C. SHAMBLIN PS #827

MARK C. SHAMBLIN LICENSED No. 827 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
NITRO, WV

DATE MARCH 07 2022
OPERATOR'S WELL No. 4205
API WELL No. 47 051 — 00719
STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION ___ STORAGE X DEEP ___ SHALLOW X
LOCATION: ELEVATION 1139.5' WATER SHED CEDAR RUN
DISTRICT LIBERTY COUNTY MARSHALL
QUADRANGLE CAMERON, WV
SURFACE OWNER GEORGE R. CUMPSTON ET AL ACREAGE 20 AC.±
OIL & GAS ROYALTY OWNER GEORGE R. CRUMPSTON, NANCY K. CUMPSTON AND GAIL K. PORTER
LEASE ACREAGE 89 LEASE No. 3032041-000
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) RE-PERFORATE
PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
TARGET FORMATION BIG INJUN ESTIMATED DEPTH 1946
WELL OPERATOR COLUMBIA GAS TRANSMISSION, LLC DESIGNATED AGENT BRAD NELSON
ADDRESS PO BOX 1273, CHARLESTON, WV 25325-1273 ADDRESS 455 RACETRACK ROAD WASHINGTON, PA 15301

P:\2021\2101-2345-001-001 - TC ENERGY - VICTORY B - 4205\50-SURVEY\DWG\ARCHIVE\DWG\VICTORY-B-4205-WORKMAP.DWG

Objective Perforate, CTCO, Acid | **LAST PROFILE UPDATE:**

TITLE:	Perforate, CTCO, Acid				**WORK TYPE:**	GPMC
FIELD:	Victory B	**WELL:**	4205			
STATE:	WV	**SHL (Lat/Long):**	39.764061	-80.600967	**API:**	47-051-00719-00-00
TWP:	Liberty	**BHL (Lat/Long):**	39.764061	-80.600967	**CNTY:**	Marshall

JOB PLAN

All freshwater based fluids to be treated with biocide and clay stabilizer.
All acids to be treated with corrosion inhibitor and iron control.

1. Obtain NRP clearances, TOPs, pipeline crossing eval., etc.
2. Notify Reservoir Engineering & Geosciences (REG) of intent to take well out of service.
3. Prepare access road and well site. Install ECD's per EM&CP.

***Note: All work needs to be performed within a 5 day period to prevent risk of acid corrosion.**

4. Service all wellhead valves.
5. Document initial casing and annular pressures.
6. MIRU Baker Atlas. Re-perforate from XXXX'-XXXX', XXXX'-XXXX', and XXXX'. Consult with Engineer for perforation interval.
7. RDMO Baker Atlas.
8. MIRU 1.75" CTU. Obtain stabilized pre-cleanout rate through 3/4" choke.
9. RIH with jet nozzle. Begin CTCO from top to TD. Wash across perfs 2 times with TFW foam.
10. Start acid and wash perfs 2 times with foam acid.
11. RIH back to bottom, shut well in, and spot 500 gals 15% HCl acid.
12. POOH to 1500 ft and load well with TFW.
13. Displace acid with 1000 gal. TFW. Tentative maximum treating pressure is 2500 psig.
14. RBTB and unload well with nitrogen. Spent acids need to be recovered within 24 hrs.
15. POOH.
16. Flow well to re-establish gas flow and recover fluids.
17. Obtain 45-min flowback test and report results to REG.
18. RDMO CTU.
19. Reclaim road and location.
20. Commission well to place back in service.
21. Notify REG that well is ready for storage service.

PREPARED BY:	Brad Nelson	**REVIEWED BY:**		**APPROVED:**	Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.03.15 09:03:14 -04'00'
PREP DATE:	1/26/2022				

FORM 109 CSD

The manufacturers light and heat company
Company

1-1528-4

Division Penn

Record of well No. 1205 on Mr. Davis No. 1 Farm Acres

Cameron Field Liberty District Marshall County W. Va. State

Rig Commenced 19 , Completed 19

Drilling Commenced ~~Nov~~ 11th 1920 19 , Completed 19

Contractor Guy B. Patterson Address

Driller's Name

CASING AND TUBING RECORD

	Conductor	13"	10"	8 1/4"	7"	6 5/8"	5 3/16"	4"	3"	2"	
Used in Drlg.			182'	1288'		1950'			163'	2912'	
Left in well				1288'		1950'			163'	2912'	

PACKER RECORD

Size	Depth Set	Type Packer

SHOOTING RECORD

Date	Type Explosive	Amount	DEPTH Top	DEPTH Bottom	Volume Before Cu. Ft.	Volume After Cu. Ft.

VOLUME AND PRESSURE

Date	Reading in Inches	Liquid	Size Orifice	Volume	Sand	PRESSURE IN MIN. 1	5	10	30	60	24 Hour R. P.	Max. R. P.	Hours

TOTAL INITIAL OPEN FLOW CUBIC FEET PER 24 HOURS

FORMATION	TOP	BOTTOM	THICKNESS	REMARKS
Coal	400'			Bottom hole Packer on 6-5/8" Casing
Waynesburg Coal	505			2912' of 2-7/8" Casing run on Rock Hill
Mapletown Coal	693	700		Packer. Set in 2 Lg Injun Sand
Pittsburgh Coal	795	802		
Big Dunkard	1300	1370		
Gas Sand	1525	1560		
Salt Sand	1700	1780		
Marion Sand	1810	1940	Gas 1890	-1930
Big Injun Sand	1968	2137	Gas 2026	
Golden Stray	2740	2753		
Gordon Sand	2750		Gas 2794	
Total Depth	2801			

Examined above information and measurements and found to be correct by

Contractor

Examined and Approved by

Division Superintendent

NOTE—The above blank must be filled out carefully by the contractor, with a complete and accurate record of the well, and accompany, when presented for payment of the bill for drilling. All formations and known sands must be given by their proper name, with steel line measurements, and under the head of "Remarks" must be recorded in what sand and at what depth Oil, Gas or water was found, the quantity of same, the quality of the sand, and thickness of pay.

FORM 109 C S D

The Manufacturers Light and Heat Company
Company

Division 4

Record of well No. 4205 on William Davis Farm V&S Acres

Cameron Field Liberty ~~Township~~ District Marshall County W Va. State

Rig Commenced 19 , Completed 19

Drilling Commenced March 6, 1959, Completed June 5, 1959

Contractor Cecil Chisler and Son Address Fairview, W Va.

Driller's Name Leonard Moore and Roy Dodd

CASING AND TUBING RECORD

	Conductor	13"	10"	8 1/4"	7"	6 5/8"	5 3/16"	4"	3"		
Used in Drlg.			192	884	1891						
Left in well			192	1288	1891						

PACKER RECORD

Size	Depth Set	Type Packer

SHOOTING RECORD

Date	Type Explosive	Amount	DEPTH Top	DEPTH Bottom	Volume Before Cu. Ft.	Volume After Cu. Ft.

VOLUME AND PRESSURE

Date	Reading in Inches	Liquid	Size Orifice	Volume	Sand	PRESSURE IN MIN. 1	5	10	30	60	24 Hour R. P.	Max. R. P.	Hours
6-8-59	20/10	Water	1"	35,062	Big Injun	2	4					57	72

TOTAL INITIAL OPEN FLOW 35,062 CUBIC FEET PER 24 HOURS

FORMATION Schlumberger Well Survey	TOP	BOTTOM	THICKNESS
Pittsburgh Coal	794	799	5
Big Dunkard	1297	1338	41
Lower Maxton	1860	1876	16
Big Lime	1880		
Big Injun		2182	
Total Depth		2170	
7" Shoe set at		1876	

REMARKS

All pipe measured over threads

Run 192' of 10 3/4" casing, SM. H. 32.75# on a steel shoe. Cemented with 75 bags of cement, 15 Lbs per gallon. Good return of cement at the surface. Run 884' of 8 5/8" casing, SM. J. 24# and connected it to 404' of original 8" casing with a steel die nipple. Cemented with 225 bags of cement, 14.5 Lbs. per gallon and 10 bags of Aquagel. Good return of cement at the surface. Run 1891' of 7" casing, SM. J. 20# on a steel shoe set at 1876'. Cemented with 250 bags of cement, 14.2 Lbs. per gallon and 9 bags of Aquagel. Good return of cement at the surface. Left in hole original 7" casing from 1878' to 1941'. Cleaned out to 2375' and filled back to final depth of 2170' with 56 bags cement, 14.5 Lbs per gallon, by use of a cement bailer.

RECEIVED
JUN 23 1959
Production Department
S. G. D.

Examined above information and measurements and found to be correct by

Cecil Chisler & Son Contractor

Examined and Approved by

Robt E. Sine Division Superintendent

NOTE—The above blank must be filled out carefully by the contractor, with a complete and accurate record of the well, and accompany, when presented for payment of the bill for drilling. All formations and known sands must be given by their proper name, with steel line measurements, and under the head of "Remarks" must be recorded in what sand and at what depth Oil, Gas or water was found, the quantity of same, the quality of the sand, and thickness of pay.

Form OG 9

L-1528-4

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

NOTICE OF INTENTION TO PLUG AND ABANDON WELL

(REQUIRED BY SECTION 9, ARTICLE 4, CHAPTER 22 OF THE CODE)

To THE DEPARTMENT OF MINES,
Charleston, W. Va.

_____ Coal Operator or Coal Owner

The Manufacturers Light & Heat Company — Name of Well Operator

_____ Address

Box 1196
Pittsburgh, Pennsylvania — Complete Address

_____ Coal Operator or Coal Owner

December 22, 19 52

WELL TO BE ABANDONED

_____ Address

Liberty District

Marshall County

_____ Lease or Property Owner

Well No. 1205

_____ Address

William Davis Farm

Inspector to be notified Oscar Butcher, Hundred, West Virginia

Gentlemen:—

The undersigned well operator is about to abandon the above described well and will commence the work of plugging and abandoning said well on the date inspector is notified (which date shall not be less than five days after the day on which this notice so mailed is received, or in due course should be received by the Department of Mines).

This notice is given you in order that your respective representatives may be present at the plugging and filling of said well. You are further notified that whether you are represented or not represented the undersigned will proceed on that date, or shortly thereafter, to plug and fill said well in the manner required by Section 10, Article 4, Chapter 22 of the Code and given in detail on the reverse side of this notice, in "Work Order."

This notice is being mailed by registered mail to each of you at the above addresses on the above date.

Very truly yours,
The Manufacturers Light & Heat Company
By:
_____ Well Operator.

NOTE: Upon the abandonment of all wells drilled prior to June 1, 1929, a plat prepared by a registered engineer, showing the district and county in which the tract of land is located, the name and acreage of same, the names of the owners and adjacent tracts, and the location of the about to be abandoned well, determined by survey, and the courses and distances of such well from two permanent points or landmarks on said tract, shall be submitted with this notice.

NOTE: In case plugging is not commenced within four months from the above date, this permit shall expire and be of no further force or effect.

(over)

_____ PERMIT NUMBER

PROPOSED MANNER OF PLUGGING AND FILLING WELL

(Required by Rules and Regulations)

WEST VIRGINIA DEPARTMENT OF MINES

OIL AND GAS DIVISION

WORK ORDER

Well to be plugged and filled as follows:

(Partial Plugging)

Total Depth	2801
Natural fill	2802 to 2300
Neat Cement	2300 to Bottom of Big Injun or Maxton sand

Note: We are undecided as to storage in Big Injun, or Maxton sand. Bottom of sands to be determined by Schlumberger Well Survey

To the Department of Mines
Coal Owner or Operator,
Lease or Property Owner.

Gentlemen:

This "work order" is submitted for your approval and concurrence and unless notified of your disapproval or non-concurrence, the undersigned will proceed with the plugging and filling of said well in the above described manner on the date stated in the notice of intention to plug and abandon the said well on opposite side of this sheet.

Very truly yours,

The Manufacturers Light & Heat Company

By: _____

Well Operator.

No objections have been filed by the coal owner or coal operator, or any available adjacent lease or property owners or interposed by the Department of Mines to the manner herein described for the plugging and filling of the well above mentioned. Therefore, the same is hereby approved this

day of _____, 19 ___.

DEPARTMENT OF MINES
Oil and Gas Division

By: _____

NOTE: This "work order" shall be filed in triplicate, one copy for the files of the Department of Mines; one to be approved or corrected and returned to the well operator as his authority for plugging said well; and one for the well inspector.

MATHEWS PRINTING AND LITHOGRAPHING CO
CHARLESTON, W. VA.

FORM OG-8

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE MADE IN TRIPLICATE. ONE COPY MAILED TO THE DEPARTMENT. ONE COPY TO BE RETAINED BY THE WELL OPERATOR AND THE THIRD COPY (AND EXTRA COPIES IF REQUIRED) SHOULD BE MAILED TO EACH COAL OPERATOR AT THEIR RESPECTIVE ADDRESSES.

_____ COAL OPERATOR OR OWNER

_____ ADDRESS

_____ COAL OPERATOR OR OWNER

_____ ADDRESS

_____ LEASE OR PROPERTY OWNER

_____ ADDRESS

The Manufacturers Light and Heat Company — NAME OF WELL OPERATOR

532 Union Trust Building, Pittsburgh 19, Pa. — COMPLETE ADDRESS

June 12, 19 59

WELL AND LOCATION

Liberty — District

Marshall — County

Well No. 1265

William Davis — Farm

STATE INSPECTOR SUPERVISING PLUGGING Oscar Belcher, Bethel, W Va.

AFFIDAVIT

STATE OF WEST VIRGINIA,
County of Marshall } ss:

Roy Dodd and Glenn Blosser being first duly sworn according to law depose and say that they are experienced in the work of plugging and filling oil and gas wells and were employed by Cecil Calaier and Son, well operator, and participated in the work of plugging and filling the above well, that said work was commenced on the 12 day of March, 19 59, and that the well was plugged and filled in the following manner:

SAND OR ZONE RECORD	FILLING MATERIAL	PLUGS USED	CASING	
FORMATION		SIZE & KIND	CSG PULLED	CSG LEFT IN
2801 to 2545	Natural Fill			7" - 337'
2545 to 2490	Cement			
2490 to 2375	Natural Fill			
2375 to 2170	Cement			
Note:- Upon start of reconditioning this well 25 bags of cement were run through 2" tubing from 2545 to 2500' to shut off any gas from lower sands. Upon completion of the well 56 bags of cement were run from 2375 to 2170' by use of a cement bailer.				
COAL SEAMS		DESCRIPTION OF MONUMENT		
(NAME)		Partial plugging		
(NAME)				
(NAME)				
(NAME)				

and that the work of plugging and filling said well was completed on the 5 day of June, 19 59.

And further deponents saith not.

Roy Dodd

Glenn Blosser

Sworn to and subscribed before me this 16 day of June, 19 59.

Notary Public.

My commission expires: April 27, 1960

Permit No. MAR-395-PP

4205

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL RECORD

Quadrangle Cameron

Permit No. _____ Oil or Gas Well Gas

Company The Manufacturers Light and Heat Co.
Address 800 Union Trust Build., Pgh. 19, Penna.
Farm William Davis Acres 89
Location (waters) _____
Well No. 4205 Elev. 1118.68'
District Liberty County Marshall
The surface of tract is owned in fee by _____
_____ Address _____
Mineral rights are owned by _____
_____ Address _____
Drilling commenced _____
Drilling completed _____
Date Shot _____ From _____ To _____
With _____
Open Flow _____/10ths Water in _____ Inch
_____/10ths Merc. in _____ Inch
Volume _____ Cu. Ft.
Rock Pressure _____ lbs. _____ hrs.
Oil _____ bbls., 1st 24 hrs.
Fresh water _____ feet _____ feet
Salt water _____ feet _____ feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16			Kind of Packer
13			
10	108'		Size of
8 1/4	1200		
6 5/8	1930		Depth set
5 3/16			
4 1/2 7/8"	2040		Perf. top
3	2048		Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED _____ SIZE _____ No. Ft. _____ Date _____

COAL WAS ENCOUNTERED AT _____ FEET _____ INCHES
_____ FEET _____ INCHES _____ FEET _____ INCHES
_____ FEET _____ INCHES _____ FEET _____ INCHES

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
Coal			400		Well Purchased from O. B. Patterson		
Waynesburg Coal			505		May 4, 1933		
Mapleton Coal			693	700			
Pittsburgh Coal			795	802	1923 Drilled deeper		
Big Dunkard Sand			1300	1370	1933 Cleaned out		
1st Gas Sand			1525	1560			
1st Salt Sand			1700	1780			
Maxton Sand			1810	1940	Gas at 1890	to 1930	
Big Injun Sand			1945	2139	Gas at 2048		
Gordon Stray Sand			2740	2753			
2nd Gordon Sand (Stray)			2790		Gas at 2794		
Fourth Sand					Gas at 2840		
Fifth Sand					Gas at any		
TOTAL DEPTH			2800				

(Over)

WR-35

Date
Operator's
Well No. L4205
Farm Davis
API No. 47 - 051 - 0719 DD

State of West Virginia
DEPARTMENT OF ENERGY
Oil and Gas Division

WELL OPERATOR'S REPORT
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil ___ / Gas X / Liquid Injection ___ / Waste Disposal ___ /
(If "Gas," Production ___ / Underground Storage X / Deep ___ / Shallow X /)

LOCATION: Elevation: 1119 Watershed Fishcreek
District: Liberty County Marshall Quadrangle Cameron

COMPANY Columbia Gas Transmission Corp.
ADDRESS Charleston, WV
DESIGNATED AGENT Robert C. Weidner
ADDRESS Charleston, WV
SURFACE OWNER George R. Compston
ADDRESS RD #5, Box 205, Cameron, WV 26033
MINERAL RIGHTS OWNER Consolidated Coal Corp.
ADDRESS Consol Plaza, Pittsburgh, PA 15241
OIL AND GAS INSPECTOR FOR THIS WORK Mike Underwood ADDRESS Rt. 2, Box 135, Salem, WV
PERMIT ISSUED
DRILLING COMMENCED September 28, 1987
DRILLING COMPLETED October 7, 1987
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"			
10-3/4"	190	190	75 sk.*
8 5/8	877	877	225 sk.*
7	1876	1876	250 sk.*
5 1/2			
4 1/2	2276'	2276'	250 sk.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Big Injun Depth 1946-2180 feet
Depth of completed well 2276 feet Rotary X / Cable Tools
Water strata depth: Fresh N/A feet; Salt N/A feet
Coal seam depths: 792' - 797' Is coal being mined in the area? No

OPEN FLOW DATA
Producing formation Big Injun Pay zone depth 1964-2058 feet
Gas: Initial open flow 16,000 Mcf/d Oil: Initial open flow None Bbl/d
Final open flow 2,820 Mcf/d Final open flow None Bbl/d
Time of open flow between initial and final tests hours
Static rock pressure 715 psig (surface measurement) after 72 hours shut in
(If applicable due to multiple completion--)
Second producing formation none Pay zone depth feet
Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d
Final open flow Mcf/d Oil: Final open flow Bbl/d
Time of open flow between initial and final tests hours
Static rock pressure psig (surface measurement) after hours shut in

*Installed in 1959.

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

Drilled 6¼" hole to 2276'. Ran 4½" K-55, 11.6# Casing to T.D. with float shoe on bottom and latch down baffle and plug at 2244'. Perforated Big Injun sand from 1964' - 1970', 1981' - 1985', and 2044' - 2058', 4 shots/ft. Flushed oil with 1,000 gal. MCA acid, did not fracture.

WELL LOG

FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Pittsburgh Coal 1/	792	797	
Big Dunkard	1296	1368	
Freeport Coal	1401	1408	
Gas Sand	1422	1434	
First Salt Sand	1460	1486	
Second Salt Sand	1551	1583	
Third Salt Sand	1698	1718	
Maxton	1818	1851	
Lower Maxton	1858	1875	1/ All geologic formations were picked from the Gamma Ray log ran in 1959.
Big Lime	1878	1939	
Big Injun	1946	2180	

(Attach separate sheets as necessary)

COLUMBIA GAS TRANSMISSION CORPORATION
Well Operator

By: [signature]

Date: NOV 11 1981

Note: Regulation 2.02(i) provides as follows:
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."

WW-2A1
(Rev. 1/11)

Operator's Well Number Victory B 4205

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6, Section 8(d)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

(1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;

(2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Freda L. Cumpston and R.G. Cumpston	The Manufacturers Light and Heat Company		DBV 309/157

Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Columbia Gas Transmission, LLC
By: Brad Nelson
Its: Storage Engineer

WW-2B1
(5-12)

Well No. Victory B 4205

West Virginia Department of Environmental Protection
Office of Oil and Gas

NOTICE TO SURFACE OWNERS

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing. The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore, if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

Be advised, you have the right to sample and analyze any water supply at your own expense.

Listed below is the laboratory chosen by operator to perform analysis, and contactor chosen to collect sample.

Certified Laboratory Name _____
Sampling Contractor _____

Well Operator Not applicable - existing underground natural gas storage well.
Address _____

_____

Telephone _____

FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underling which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site, the Chief may require the operator to test wells up to 2000 feet from the proposed site.

WW-9
(5/16)

API Number 47 - 051 - 007190000
Operator's Well No. Victory B 4205

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Columbia Gas Transmission, LLC OP Code 307032

Watershed (HUC 10) Cedar Run Quadrangle Cameron, WV

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ☐ No ☑

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste: _____

Will a synthetic liner be used in the pit? Yes ☐ No ☑ If so, what ml.? _____

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application (if selected provide a completed form WW-9-GPP)
■ Underground Injection (UIC Permit Number 34-009-23821, 34-009-23823, 34-009-23824, 34-105-23619)
_____ Reuse (at API Number _____)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
■ Other (Explain Appalachian Water Services, Station W1 Ronco WTP, Masontown, PA - Permit 2608201

Will closed loop system be used? If so, describe: Yes - steel piping connecting wellhead and tank(s).

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Fresh water

-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used in drilling medium? NaCl, biocide, polymer, starch, calcium carbonate, surfactant (CTCO), HCl acid (stimulation)

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. N/A

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) _____

-Landfill or offsite name/permit number? If needed: Rumpke Beech Hollow Landfill - Wellston, OH

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature Brad Nelson

Company Official (Typed Name) Brad Nelson

Company Official Title Storage Engineer

Commonwealth of Pennsylvania - Notary Seal
Elaine Rybski, Notary Public
Allegheny County
My commission expires May 11, 2022
Commission number 1332803
Member, Pennsylvania Association of Notaries

Subscribed and sworn before me this 11 day of March, 2022

Elaine Rybski Notary Public

My commission expires 5/11/2022

Commonwealth of Pennsylvania
County of Allegheny

Form WW-9

Operator's Well No. Victory B 4205

Proposed Revegetation Treatment: Acres Disturbed <1.0 Prevegetation pH 6.5

Lime 2 Tons/acre or to correct to pH 7

Fertilizer type 10-10-10

Fertilizer amount 600 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Rye	40	Orchard Grass and/or Tall Fescue	29
		Birdsfoot trefoil (empire)	9
		Annual Rye	12

For wetland areas: Annual Rye (40 lbs/acre) until indigenous plants re-establish cover.

Attach:
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.03.15 09:03:55 -04'00'

Comments:

Title: Inspector Date: 3-15-2022

Field Reviewed? (X) Yes ( ) No

API Number 47 - 051 - 007190000
Operator's Well No. Victory B 4205

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
GROUNDWATER PROTECTION PLAN

Operator Name: Columbia Gas Transmission, LLC

Watershed (HUC 10): Cedar Run Quad: Cameron, WV

Farm Name: CUMPSTON, GEORGE R.

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

No fluids planned to be discharged.

No fertilizer will be stored on site. Small quantities of fuel, oil, and lubrications will be stored on site, but located within secondary containment.

Accidental release from well fluids and spills from construction equipment are the only sources of contaminate to groundwater.

All accumulated fluids to be hauled off site to UIC disposal facility.

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

All construction and well servicing equipment will be monitored and inspected daily for leaks. Fluid pumping well service equipment will have secondary containment under all leak paths. Spill kits will be on site.

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

Cedar Run is approximately 1040' to the S.

The closest Well Head Protection Area is 6.1 mi. (WV3305202 - Hundred Littleton PSD).

4. Summarize all activities at your facility that are already regulated for groundwater protection.

N/A

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

N/A

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

No waste material will be used for deicing or fill material on the property.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

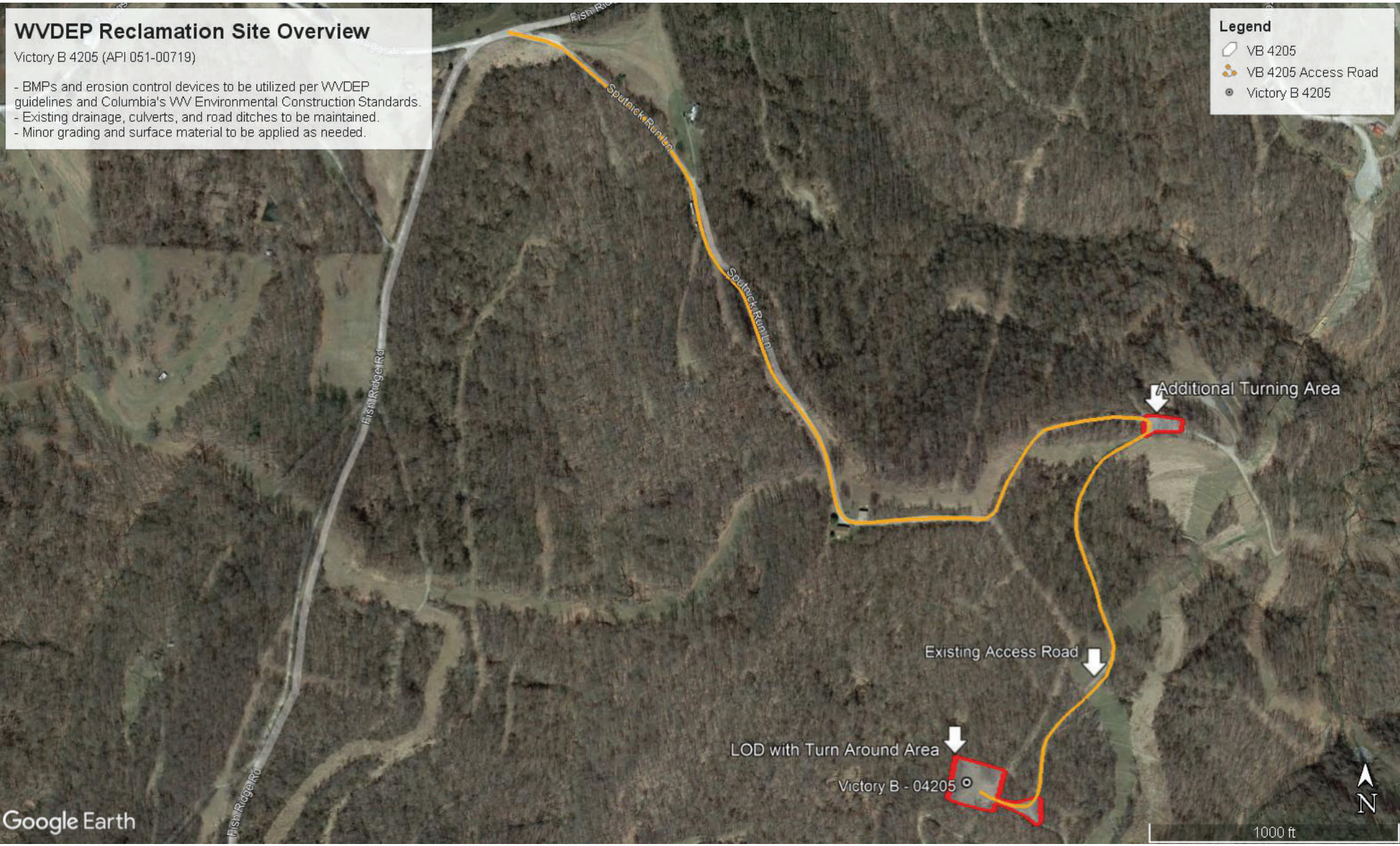
During routine tailgate meetings groundwater protection will be a topic of discussion.

8. Provide provisions and frequency for inspections of all GPP elements and equipment.

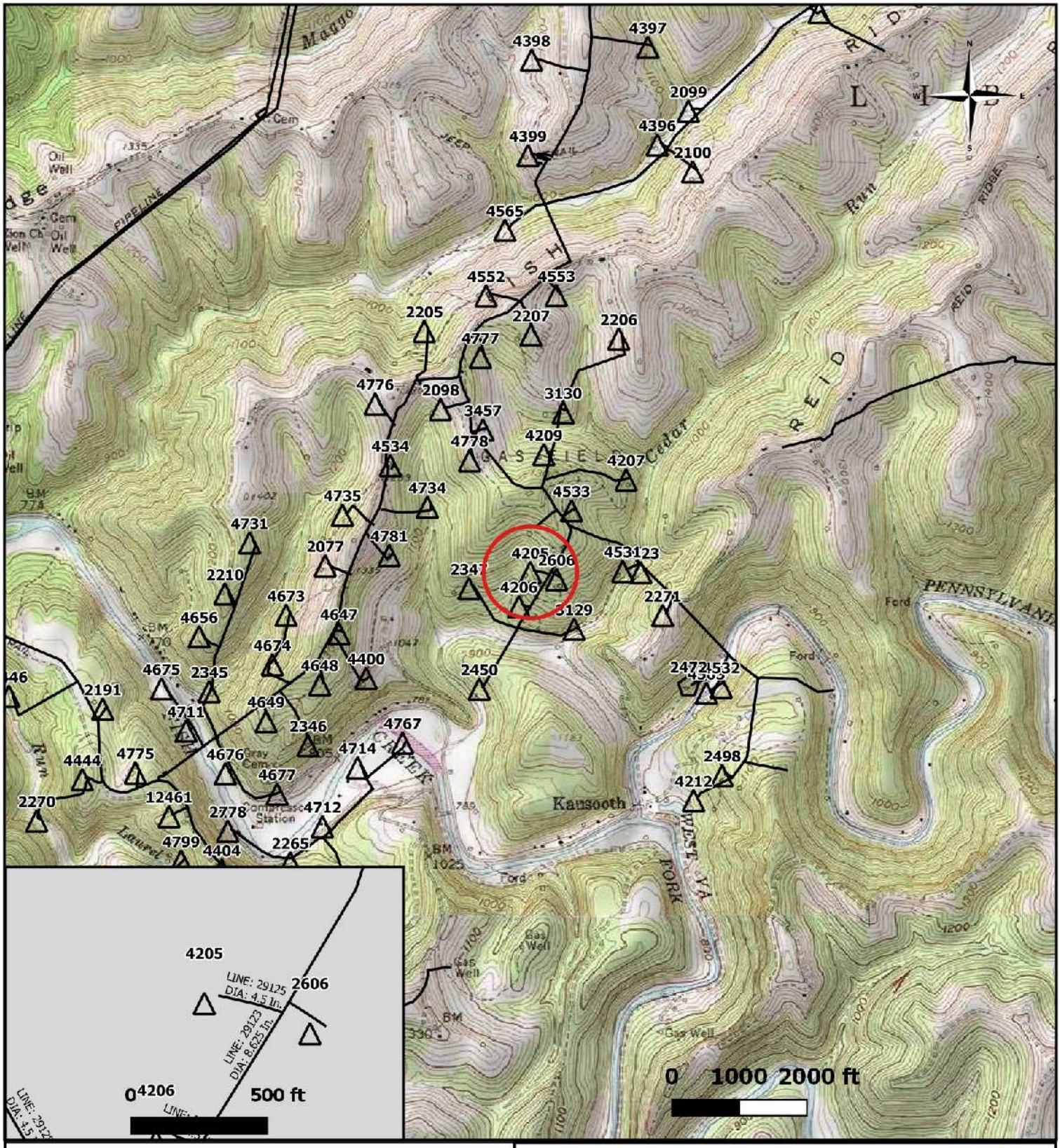
No fertilizer will be stored on site. Small quantities of fuel, oil, and lubrications will be stored on site, but located within secondary containment. Construction and well servicing equipment will be monitored and inspected daily for leaks or spills.

Signature: Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.03.15 09:08:41 -04'00'

Date: 3-15-2022


WVDEP Reclamation Site Overview
Victory B 4205 (API 051-00719)
- BMPs and erosion control devices to be utilized per WVDEP guidelines and Columbia's WV Environmental Construction Standards.
- Existing drainage, culverts, and road ditches to be maintained.
- Minor grading and surface material to be applied as needed.
Legend
VB 4205
VB 4205 Access Road
Victory B 4205
Sputnick Run Ln
Fish Ridge Rd
Additional Turning Area
Existing Access Road
LOD with Turn Around Area
Victory B - 04205
N
1000 ft
Google Earth

WVDEP Reclamation Plan Site Detail
Victory B 4205 (API 051-00719)
- BMPs and erosion control devices to be utilized per WVDEP guidelines and Columbia's WV Environmental Construction Standards.
- Existing drainage, culverts, and road ditches to be maintained.
- Minor grading and surface material to be applied as needed.
Legend
VB 4205 Access Road
VB 4205 LOD / Turning Area
Victory B 4205
Additional Turning Area
Existing Access Road
LOD with Turn Around Area
Victory B - 04205
Google Earth
600 ft
N



Legend

Storage Well Classification

- Active
- Observation
- Special
- CPG Pipelines
- Well of Interest

TransCanada
In business to deliver

VictoryB Storage Field
Storage Well 4205
Marshall County, West Virginia

USGS Topographic Map (Scaled 2000 Ft/ In) to be included with PROJECT ENVIRONMENTAL INFORMATION FORM (PEIF).

WW - 2B
(Rev. 8/10)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: Columbia Gas Transmission, LLC | 307032 (Operator ID) | Marshall (County) | Liberty (District) | Cameron, WV (Quadrangle)

2) Operator's Well Number: Victory B 4399 3) Elevation: 1160.9'

4) Well Type: (a) Oil_____ or Gas X

(b) If Gas: Production ____ / Underground Storage X

Deep_____ / Shallow X

5) Proposed Target Formation(s): Big Injun Proposed Target Depth: 1961'

6) Proposed Total Depth: 2171 Feet Formation at Proposed Total Depth: Big Injun

7) Approximate fresh water strata depths: None as reported by the driller in 1918.

8) Approximate salt water depths: None as reported by the driller in 1918.

9) Approximate coal seam depths: 750'-755'; 850'-855' (as reported by the driller in 1918).

10) Approximate void depths,(coal, Karst, other): None reported by the driller in 1918.

11) Does land contain coal seams tributary to active mine? Yes

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)

Obtain a casing inspection and cement bond log. Perform coiled tubing clean-out and acid wash.

*Casing listed below are existing. No plans to remove, alter, or install new casing/tubing.

13) **CASING AND TUBING PROGRAM**

TYPE SPECIFICATIONS FOOTAGE INTERVALS CEMENT

	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor						
Fresh Water	10-3/4"	H-40	32.75		229'	106 sx.
Coal	8-5/8"	J-55	24		1260'	200 sx.
Intermediate	7"	J-55	20		1940'	250 sx.
Production	4.5"	K-55	11.6		2202'	100 sx.
Tubing						
Liners						

Packers: Kind: N/A

Sizes:

Depths Set

WW-2A
(Rev. 6-14)

1). Date: 3/11/2022

2.) Operator's Well Number Victory B 4399

3.) API Well No.: State 47- County 051 - Permit 007570000

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE AND APPLICATION FOR A WELL WORK PERMIT

4) Surface Owner(s) to be served:
(a) Name Jan C. Dobbs, Trustee
Address 4446 Cameron Ridge Road
Cameron, WV 26033
(b) Name Eric Scott Dobbs
Address 4446 Cameron Ridge Road
Cameron, WV 26033
(c) Name
Address

6) Inspector Gavne J. Knitowski
Address P.O. Box 108
Gormania, WV 26720
Telephone 304-546-8171

5) (a) Coal Operator
Name Marshall County Coal Resources
Address 46226 National Road
St. Clairsville, OH 43950
(b) Coal Owner(s) with Declaration
Name Marshall County Coal Resources
Address 46226 National Road
St. Clairsville, OH 43950
Name American Consolidated Natural Res.
Address 46226 National Road
St. Clairsville, OH 43950
(c) Coal Lessee with Declaration
Name N/A
Address

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

___ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas

OR

x Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through ___ on the above named parties by:

___ Personal Service (Affidavit attached)
X Certified Mail (Postmarked postal receipt attached)
___ Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator Columbia Gas Transmission, LLC
By: Brad Nelson
Its: Storage Engineer
Address: 455 Racetrack Road
Washington, PA 15301
Telephone: 724-250-0610
Email: brad_nelson@tcenergy.com

Commonwealth of Pennsylvania - Notary Seal
Elaine Rybski, Notary Public
Allegheny County
My commission expires May 11, 2022
Commission number 1332803
Member, Pennsylvania Association of Notaries

Subscribed and sworn before me this 11 day of March, 2022

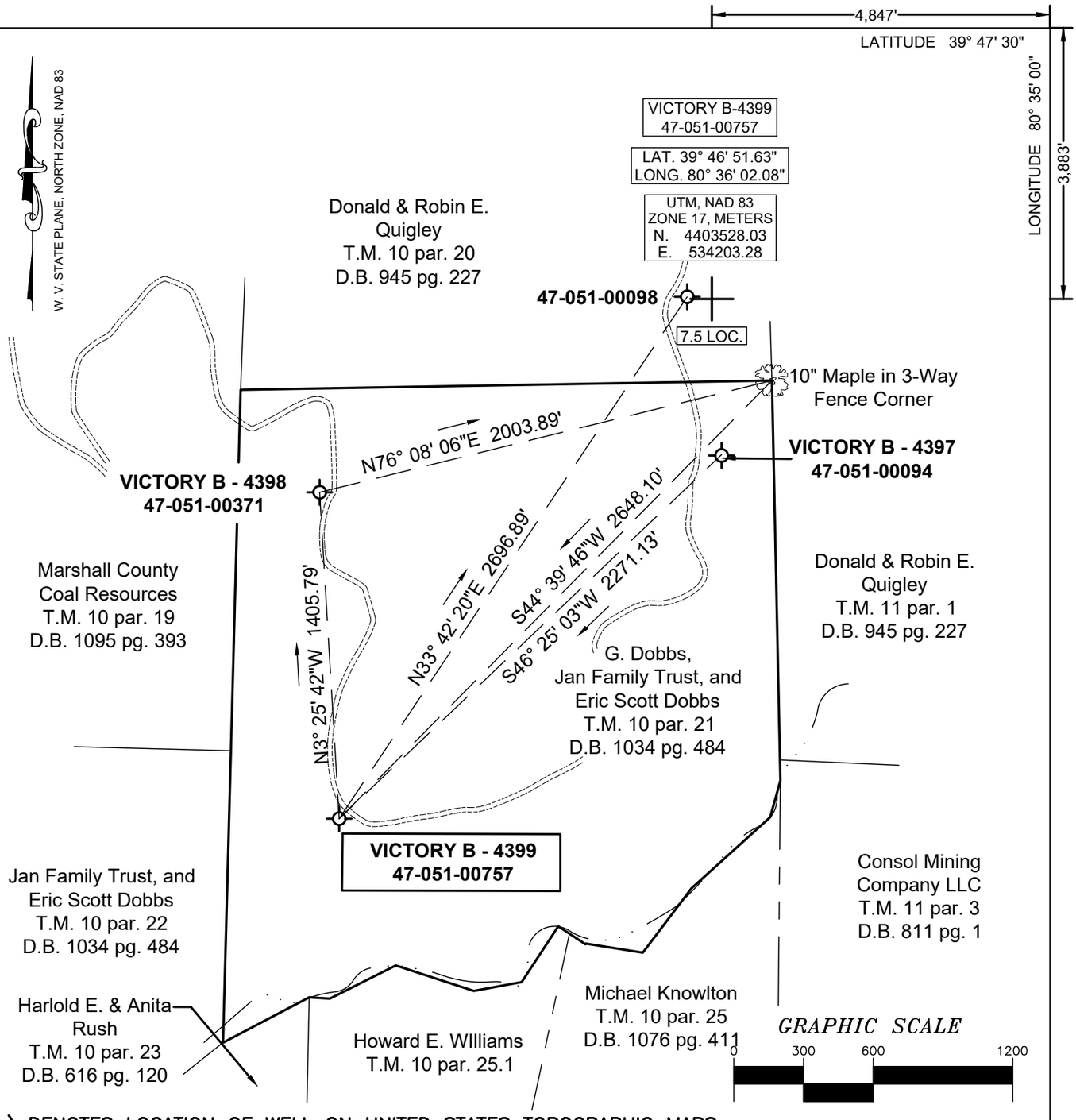
Elaine Rybski Notary Public

My Commission Expires 5/11/2022

Commonwealth of Pennsylvania
County of Allegheny

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE No 1701-2345-001-002
DRAWING No. VICTORY B-4399
SCALE 1"=600'
MINIMUM DEGREE OF ACCURACY 1:200
PROVEN SOURCE OF ELEVATION TRIMBLE R8-3 GPS UNIT

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

(SIGNED) R. Thaw

ROBERT F. THAW PS #965

ROBERT F. THAW LICENSED No. 965 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
NITRO, WV

DATE MARCH 08 2022
OPERATOR'S WELL No. 4399
API WELL No. 47 051 — 00757
STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION ___ STORAGE X DEEP ___ SHALLOW X

LOCATION: ELEVATION 1160.9' WATER SHED FISH CREEK
DISTRICT LIBERTY COUNTY MARSHALL
QUADRANGLE CAMERON, WV

SURFACE OWNER JAN C. DOBBS, TRUSTEE, ERIC SCOTT DOBBS ACREAGE 137.39 AC.±
OIL & GAS ROYALTY OWNER JAN C. DOBBS, TRUSTEE, ERIC SCOTT DOBBS
LEASE ACREAGE 139 LEASE No. 3032056 & 3028900

PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) N/A

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___

TARGET FORMATION BIG INJUN ESTIMATED DEPTH 1961
WELL OPERATOR COLUMBIA GAS TRANSMISSION, LLC DESIGNATED AGENT BRAD NELSON
ADDRESS PO BOX 1273, CHARLESTON, WV 25325-1273 ADDRESS 455 RACETRACK ROAD WASHINGTON, PA 15301

P:\2021\2101-2345-001-002 - TC ENERGY - VICTORY B - 4399\50-SURVEY\DWG\VICTORY-B-4399-WELL-PLAT.DWG

Objective Log, CTCO, Acid | **LAST PROFILE UPDATE:**

TITLE:	Log, CTCO, Acid				**WORK TYPE:**	GPMC
FIELD:	Victory B	**WELL:**	4399			
STATE:	WV	**SHL (Lat/Long):**	39.781038	-80.600993	**API:**	47-051-00757-00-00
TWP:	Liberty	**BHL (Lat/Long):**	39.781038	-80.600993	**CNTY:**	Marshall

JOB PLAN

All freshwater based fluids to be treated with biocide and clay stabilizer.
All acids to be treated with corrosion inhibitor and iron control.

1 Obtain NRP clearances, TOPs, pipeline crossing eval., etc.
2 Notify Reservoir Engineering & Geosciences (REG) of intent to take well out of service.
3 Prepare access road and well site. Install ECD's per EM&CP.

Note: All work needs to be performed within a 5 day period to prevent risk of acid corrosion.

4 Service all wellhead valves.
5 Document initial casing and annular pressures.
6 MIRU Baker Atlas. Run gauge ring, InTex CBL, and HRVRT. Report results to Engineer.
7 RDMO Baker Atlas.
8 MIRU 1.75" CTU. Obtain stabilized pre-cleanout rate through 3/4" choke.
9 RIH with jet nozzle. Begin CTCO from top to TD. Wash across perfs 2 times using TFW foam.
10 Start acid and wash perfs 2 times with foam acid.
Prior to acid stimulation, verify with WE&T Engineer that results of HRVRT and CBL support stimulation pressures.
11 RIH back to bottom, shut well in, and spot 500 gals 15% HCl acid.
12 POOH to 1400 ft and load well with TFW.
13 Displace acid with 1000 gal. TFW. Tentative maximum treating pressure is 2500 psig, pending results of HRVRT.
14 RBTB and unload well with nitrogen. Spent acids need to be recovered within 24 hrs.
15 POOH.
16 Flow well to re-establish gas flow and recover fluids.
17 Obtain 45-min flowback test and report results to REG.
18 RDMO CTU.
19 Reclaim road and location.
20 Commission well to place back in service.
21 Notify REG that well is ready for storage service.

PREPARED BY:	Brad Nelson	**REVIEWED BY:**		**APPROVED:**	Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.03.15 09:07:44 -04'00'
PREP DATE:	11/23/2021				

L 4399

Carnegie Natural Gas Company

T. C. Pipes et al - Roll No. 889
Commenced Drilling - Nov. 29, 1918

Lease No. 9802 - 139 acres
Completed Drilling - Jan. 9, 1919
Drilled Deeper - April 6, 1919

Rock Formation	Top	Bottom	Remarks	
Pittsburgh Coal	850	855		
Little Dunkard	1260	1275		
Big Dunkard	1320	1460		
Gas Sand	1520	1540		
1st Salt	1840	1880		
Maxton	1887	1957		
Big Lime	1957	1995		
Big Injun	1995	2270	Gas	2070-2075 2080-2085
Thirty-Foot	2775	2795	Gas	2776-2778
Gordon	2843	2878	Oil	2855-2857
Fourth	2903	2918	Gas	2912 Blew Out
Fifth	3000	3009	Gas	3005 Show

Total Depth 3033 (Plugged back to 2000)

Original Open Flow - 622 MCF

Original Rock Pressure - 560, in 2"

Shot Record - 16 qts 2853-2857 3-4-19
12 2775-2780 4-2-19

4399

Well 889

Casing Record

8-1/4" - 1,260' ('19)
6-5/8" - 1,957' ('19)
5-3/16" - 1,999' ('46)

Present Open Flow - Zero (11-52)

Misc. Equipment

Fittings ('19)
W. A. Packer 6-5/8" X 5-3/16" set 1984' ('46)

Free Gas Consumption

Free Gas Consumption is noted on Well 662

Royalty

$ 100.00 per year

OG-10

4399

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL RECORD

Permit No. ..... WELL TO BE ABANDONED Oil or Gas Well GAS (KIND)

Company CARNEGIE NATURAL GAS COMPANY
Address 1015 Frick Bldg., PITTSBURGH, PA.
Farm T. C. PIPES Acres 139
Location (waters) BIG RUN
Well No. 889 Elev. 980
District LIBERTY County MARSHALL
The surface of tract is owned in fee by FRANK CROW
Address CAMERON, W. VA.
Mineral rights are owned by SEE BELOW
Address
Drilling commenced 11-29-18
Drilling completed 1-9-19
Date Shot 4-2-19 From 2775 To 2780
With 12 Qts.
Open Flow /10ths Water in Inch
16/10ths Merc. in 2 Inch
Volume Cu. Ft.
Rock Pressure lbs. hrs.
Oil bbls., 1st 24 hrs.
Fresh water feet feet
Salt water feet feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16			Kind of Packer
13			
10	238	None	Size of
8¼	1270	1270	
6⅝	1973	1973	Depth set
5 3/16			
3			Perf. top
2		2800	Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED ..... SIZE ..... No. Ft. ..... Date

COAL WAS ENCOUNTERED AT 750 FEET ..... INCHES
850 FEET ..... INCHES ..... FEET ..... INCHES
..... FEET ..... INCHES ..... FEET ..... INCHES

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
Mapletown Coal			750	755			
Pittsburgh Coal			850	855			
Little Dunkard			1260	1275			
Big Dunkard			1320	1460			
Gas Sand			1520	1540			
2nd Gas Sand			1550	1575			
1st Salt Sand			1840	1880			
Maxton Sand			1887	1957			
Big Lime			1957	1995			
Big Injun			1995	2270	Gas	2070-2075	
					Gas	2080-2085	
50-Foot Sand			2623	2677			
30-Foot Sand			2775	2795	Gas	2776-2778	
	TOTAL DEPTH			2800			

OWNERS of MINERAL RIGHTS:

Berta D. Pipes, 715 - 30th Ave., St. Petersburg, 4, Fla.
Lutie Hicks, 929 Main St., Wheeling, W. Va.
Eva Thiel, 105 S. 3rd St., Martins Ferry, Ohio
Anna Herberg Julian, 3651 Edwards Rd., Ryde Park, Cincinnati, Ohio
Peoples-Pittsburgh Trust Co., Agent for John Thiel Heirs, Pittsburgh, Pa.

(Over)

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks

Date AUGUST 21, 194 6

APPROVED CARNEGIE NATURAL GAS COMPANY, Owner

By [signature]

(Title) Land Agent.

2

FORM 109 C&D

Abandoned

The Manufacturers Light and Heat Co.
Company

Division

L-1700-4

Record of well No. C-889 - L-4399 on T. C. Pipes Farm Acres

Field Township District County State

Rig Commenced 19 , Completed 19

Drilling Commenced November 8, 1918, Completed January 9, 1919

Contractor Address

Driller's Name

CASING AND TUBING RECORD

	Conductor	13"	10"	8 1/4"	7"	6 5/8"	5 3/16"	4"	3"		
Used in Drlg.											
Left in well											

PACKER RECORD

Size	Depth Set	Type Packer

SHOOTING RECORD

Date	Type Explosive	Amount	DEPTH Top	DEPTH Bottom	Volume Before Cu. Ft.	Volume After Cu. Ft.

VOLUME AND PRESSURE

Date	Reading in Inches	Liquid	Size Orifice	Volume	Sand	PRESSURE IN MIN. 1	5	10	30	60	24 Hour R. P.	Max. R. P.	Hours

TOTAL INITIAL OPEN FLOW CUBIC FEET PER 24 HOURS

FORMATION	TOP	BOTTOM	THICKNESS	REMARKS
Conductor		16		Permit TO RECONDITION Act
Mapletown Coal	750	755		OD - 2450
Pittsburgh Coal	850	855		
Little Dunkard	1260	1275		
Big Dunkard	1320	1460		
Gas Sand	1550	1575		
1st. Salt Sand	1840	1880		
Maxton Sand	1887	1957		
Big ~~Lime~~ Injun	1957	1995		
Big Injun	1995			
Gas	2070	2075		
Gas	2080	2085		
TOTAL DEPTH		2100		
	CASING RECORD			
	10"	242		All Pulled
	8 1/4"	1270		All in Well
	6 5/8"	1973		All in Well
	5 3/16"	1983		# 16' Screw in Well

Examined above information and measurements and found to be correct by

Contractor

Examined and Approved by

Field Superintendent

NOTE—The above blank must be filled out carefully by the contractor, with a complete and accurate record of the well, and accompany, when presented for payment of the bill for drilling. All formations and known sands must be given by their proper name, with steel line measurements, and under the head of "Remarks" must be recorded in what sand and at what depth Oil, Gas or water was found, the quantity of same, the quality of the sand, and thickness of pay.

FORM OG 4(B)12-1
OSC

T. C. Pipe Co. No 532 L-4399

Commenced - Nov. 2, 1918

Completed - Jan 2, 1919

Rock Formation

	Top	Bottom
Sand		16
Maple Ton Coal	750	755
Pitts. Coal	850	855
Little Dunkard	1260	1275
Big "	1320	1440
505 Sand	1550	1575
1st. Salt Sand	1840	1850
Maxton Sand	1887	1957
Big Lime	1957	1995
Big Injun	1995	Gas 2020 - 2075
		2080 - 2085

Total Depth 2100 ft.

Casing Record

10" - 242 - Pulled

8¼ 1270 - All in Well

6⅝ 1973

4½ 1982 + 16' Screen in Well

Form

COLUMBIA GAS SYSTEM – PITTSBURGH GROUP COMPANIES

WELL LOG SUMMARY

DMG

1 of 1 Sheets

LOCATION

COMPANY	DIV.	FIELD	WELL NO.
The Manufacturers Light and Heat Company	4	Cameron, W. Va.	4399

FARM	ACRES	LEASE NO.	DISTRICT ~~TOWNSHIP~~	COUNTY	STATE
T. C. Pipes	139	28900	Liberty	Marshall	W. Va.

TOPO. MAP: _____ Quadrangle _____ Ft. _____ of _____ ° _____ / and _____ Ft. _____ of _____ ° _____ /

CONTRACTOR

TOP HOLE CONTRACTOR — CONTRACTOR: _____ ADDRESS: _____ Drilled from _____ Ft. to _____ Ft. Type of Rig _____

DRILLING CONTRACTOR — CONTRACTOR: Haught Drilling Company ADDRESS: Harrisville, West Virginia Drilled from 0 Ft. to 2800 Ft. Type of Rig Drilling Machine

~~Plugged~~ Drilling COMMENCED (DATE)	DRILLING COMPLETED (DATE)	COMPLETED TOTAL DEPTH	DATE PURCHASED	FOR. WELL NO.
Feb. 11, 1960	May 17, 1960	2210 ft.		

HOLE SIZE / CASING AND TUBING (All Measurments less threads)

BIT GAUGE (INCHES)	13	10	8	6-1/4	
FROM–TO (FEET)	0 to 229	0 to 1260	0 to 1940	0 to 2210	
SIZE (O.D.)	10-3/4"	8-5/8"	7"		
WEIGHT/FOOT	32.75	24	20		
STEEL GRADE	H	J	J		
COUPLING TYPE	Short	Short	Short		
SETTING DEPTH	229	1085	1940		
LEFT IN HOLE	229	1260	1940		
NO. OF SACKS	106	200	250		
TYPE	I-S	I-S	I-S		
WEIGHT #/GAL.	14.4	14.4	14.3		

RECEIVED JUN 3 1960 Production Department S. G. D.

PACKER

MANUFACTURER						
TYPE						
SIZE						
SETTING DEPTH						

WELL STIMULATION

TREATMENT	TYPE *	SIZE AND/OR AMOUNT	ZONE TREATED	OPEN FLOW MCF/DAY	PERFORMED BY	DATE
			From / to	Before / After		
			From / to	Before / After		
			From / to	Before / After		
			From / to	Before / After		

OPEN FLOW TEST

DATE GAUGED	FORMATION	PAY ZONE	TYPE GAUGE (SPECIFY)	PRESSURE (SPECIFY UNITS)	SIZE OPENING-IN.	OPEN FLOW M.C.F. / DAY	OPEN FLOW HRS. FLOWN
5 25 60	Big Injun	From 1940 to 2210	Orifice Well Tester	2/10 Water	1/4	789 C.F.	30 Min ~~8 Da~~
		From to					
		From to					

WELLHEAD PRESSURE TESTS

DATE TAKEN	FORMATION	MINUTE PRESSURE – PSIG 1	3	5	10	20	30	WELLHEAD PRESSURE – PSIG 24 HR.	48 HR.	72 HR.	MAX. PRESS.	TIME
5 25 60	Big Injun	0	0	0	0	0	0					
5 27 60	Do								3			

MISC.

DEPTH MEASUREMENT TAKEN FROM: [X] Derrick Floor [ ] Ground Other (Specify) _____ DIST. TO GROUND 2 ft. ELEVATION 1164

LOGGED [X] Yes [ ] No LOGGED BY (COMPANY) Schlumberger Well Surveying Corporation DATE LOGGED 4 5 60

REMARKS

* *Note: Form PD-17 "Well Fracture Report" to be completed and attached, if applicable*

Run 1085' of 8-5/8" Casing, New, less threads, and connected it to 175' of original 8" Casing, Left in Hole.

	Plug	Down	Pressure
	10"	8"	7"
	100#	350#	850#
Cement Return	Yes	Yes	Yes

Attach additional sheets and forward to Production Dept. Pittsburgh General Office

Verified by Andrew T. Gibschaw DIVISION ENGINEER

Approved by Ralph E. Lee DIVISION SUPERINTENDENT

Well

Form P

COLUMBIA GAS SYSTEM – PITTSBURGH GROUP COMPANIES

WELL LOG SUMMARY

DIV.	FIELD	FARM	COUNTY	WELL NO.
4	Cameron, W. Va.	T. C. Pipes	Marshall	4399

ORIGIN OF FORMATION DEPTHS ☐ Driller's Log ☒ Service Company Log ☐ Combination

FORMATION	TOP	BOTTOM	THICKNESS	REMARKS (Water, Gas, Oil encountered-Open Flows-Rock Pressure-etc.)
Pittsburgh Coal	838	844	6	
Big Dunkard Sand	1310	1395	85	
Maxton Sand	1863	1890	27	
Big Lime	1928			
Big Injun Sand		2232		
Set 7" Shoe At		1940		
Plug Back To		2210		

OG-10 See 051-757

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL RECORD

Quadrangle _____

Permit No. 051-415-A

Oil or Gas Well GAS (KIND)

Company The Manufacturers Light and Heat Company
Address 800 Union Trust Bldg., Pittsburgh, Pa.
Farm T. C. Pipes Acres 139
Location (waters) _____
Well No. L-4399 (C-389) Elev. -
District Liberty County Marshall
The surface of tract is owned in fee by _____
Address _____
Mineral rights are owned by _____
Address _____
Drilling commenced November 20, 1918
Drilling completed January 5, 1919 Drilled Deeper April 6, 1919
Date Shot _____ From _____ To _____
With _____
Open Flow /10ths Water in _____ Inch
622MCF /10ths Merc. in _____ Inch
Volume _____ Cu. Ft.
Rock Pressure 560 lbs. 2" hrs.
Oil _____ bbls., 1st 24 hrs.
Fresh water _____ feet _____ feet
Salt water _____ feet _____ feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16			Kind of Packer
13			
10			Size of
8¼			
6⅝			Depth set
5 3/16			
3			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED _____ SIZE _____ No. Ft. _____ Date

COAL WAS ENCOUNTERED AT _____ FEET _____ INCHES
_____ FEET _____ INCHES _____ FEET _____ INCHES
_____ FEET _____ INCHES _____ FEET _____ INCHES

Formation	Color	Hard or Soft / Thickness	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
Pittsburgh Coal			850	855			
Little Dunkard			1260	1275			
Big Dunkard			1320	1460			
Gas Sand			1520	1540			
1st Salt			1840	1880			
Maxton			1887	1957			
Big Lime			1957	1995			
Big Injun			1995	2270	Gas	2070-2075 2080-2085	
Thirty-Foot			2775	2795	Gas	2776-2778	
Gordon			2848	2878	Oil	2855-2857	
Fourth			2908	2918	Gas	2912	Blew Out
Fifth			3000	3009	Gas	3005	Show

RECEIVED
FEB 1920
WEST VIRGINIA
DEPT. OF MINES

(Over)

FORM OG-8

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE MADE IN TRIPLICATE. ONE COPY MAILED TO THE DEPARTMENT, ONE COPY TO BE RETAINED BY THE WELL OPERATOR AND THE THIRD COPY (AND EXTRA COPIES IF REQUIRED) SHOULD BE MAILED TO EACH COAL OPERATOR AT THEIR RESPECTIVE ADDRESSES.

M. A. Hanna Coal Company
COAL OPERATOR OR OWNER
1300 Leader Building
Cleveland, Ohio
ADDRESS

COAL OPERATOR OR OWNER
ADDRESS

LEASE OR PROPERTY OWNER
ADDRESS

The Manufacturers Light and Heat Company
NAME OF WELL OPERATOR
800 Union Trust Building
Pittsburgh 30, Pennsylvania
COMPLETE ADDRESS

June 9, ~~May 27,~~ 1960
WELL AND LOCATION

Liberty District
Marshall County
Well No. 4399 (C-889)
T. C. Pipes Farm

STATE INSPECTOR SUPERVISING PLUGGING Oscar Butcher, Bundred, West Virginia

AFFIDAVIT

STATE OF WEST VIRGINIA,
County of Marshall } ss:

Chas. A. Hart and Arthur Leo Johnson

being first duly sworn according to law depose and say that they are experienced in the work of plugging and filling oil and gas wells and were employed by Haught Drilling Company, well operator, and participated in the work of plugging and filling the above well, that said work was commenced on the 13 day of May, 1960, and that the well was plugged and filled in the following manner:

SAND OR ZONE RECORD	FILLING MATERIAL	PLUGS USED	CASING	
FORMATION		SIZE & KIND	CSG PULLED	CSG LEFT IN
2800 to 2310	Aquagel			
2310 to 2210	Cement			
Note:	25 bags of Aquagel was run through 1600' of new 7" casing from 2800' to 2310'. Upon completion of well, 35 bags of cement were run from 2310' to 2210' by use of a cement bailer.			

COAL SEAMS		DESCRIPTION OF MONUMENT
(NAME) Pittsburgh Coal	838 to 844	Partial Plugging
(NAME)		
(NAME)		
(NAME)		

and that the work of plugging and filling said well was completed on the 13 day of May, 1960

And further deponents saith not.

Chas. A. Hart
Arthur Leo Johnson

Sworn to and subscribed before me this 2nd day of June, 1961.

Cindy Schmidt
Notary Public.

My commission expires: 4-18-70

Permit No. MARS-115-PP

RECEIVED
JUN 1960
WEST VIRGINIA
DEPT. OF MINES

See: 051-0757

Form 886-PS4
(Rev.8-76)

COLUMBIA GAS SYSTEM - COLUMBIA GAS TRANSMISSION CORPORATION

WELL LOG SUMMARY

WELL NO.	FIELD	DATE WORK STARTED	DATE WORK COMPLETED
L-4399	VICTORY B STORAGE	9/30/93	10/6/93

DATE DRILLING STARTED	DATE DRILLING COMPLETED	SHUT-IN DATE	TOTAL DEPTH	PLUGGED BACK TO
11/29/18	1/9/19	3/24/94	3033'	2171'

HOLE SIZE	Bit Gauge (inches)	13	10	8	6½	
	From – To (feet)	0-229	229-1260	1260-1940	1940-	
CASING & TUBING (All Measurements Less Threads)	Size (O.D.)	10¾"	8⅝"	7"	4½"	
	Weight/Foot	32.75#	24#	20#	11.6#	
	Steel Grade	H-40	J-55	J-55	K-55	
	Coupling Type	SHORT	SHORT	SHORT	LONG	
	Setting Depth	229'	1085'	1940'	2202'	
	Left in Hole	229'	1260'	1940'	2202'	
CEMENT RECORD	No. of Sacks	106	200	250	110	
	Type	1-S	1-S	1-S	CLASS A(C)	
	Weight (# Gallon)	14.4	14.4	14.3	15.4	
	Return to Surface	YES	YES	YES	NO	
	Plug Down Pressure	100 psig	350 psig	850 psig	575 psig	
DOWN HOLE EQUIPMENT	Manufacturer	—	—	—	HALLIBURTON	
	Type	CSG. SHOE	DIE NIPPLE	CSG. SHOE	FLOAT SHOE	
	Size	10¾"X10"	8⅝"	7"X12"	5½"OD X 1.25'	
	Setting Depth	229'	1085'	1940'	2202'	
PERFORATING RECORD	From (feet)	—	—	—	2055'	
	To (feet)	—	—	—	2081'	
	No. Shots Perfor.	—	—	—	6/FT.	
	Kind of Shot	—	—	—	JET	
	Date	—	—	—	3/21/94	
	Service Co.	—	—	—	HITWELL SURVEYS, INC.	

FORMATION RECORD		
FORMATION	FROM	TO
PGH. COAL	837'	849'
B. DUNKARD SS	1350'	1392'
MAXTON SS	1860'	1888'
L. MAXTON SS	1925'	1939'
BIG LIME	1939'	1961'
BIG INJUN SS	1961'	—
TOTAL DEPTH	—	2171'

STIMULATION RECORD				
	Formation	BIG INJUN SAND	Formation	Formation
	From – To	2055' To 2081'	From – To	From – To
	Date	3/23/94		
	Type	GELLED WATER FRAC		
	Fluid (Total Bbl.)	498		
	Propping Agent (#)	27,000		
	Service Co.	HALLIBURTON		

OPEN FLOW TESTS	BEFORE	AFTER	BEFORE	AFTER	BEFORE	AFTER
Date	3/22/94					
Open Flow	1,380 MCF/DAY					
Duration (hour)	8					
Type Gauge	PITOT TUBE					
Size Opening	2⅜"					

WELLHEAD PRESSURE TESTS	
START DATE	
1 Minute	
3 Minutes	
5 Minutes	
10 Minutes	
20 Minutes	
24 Hours	
48 Hours	
72 Hours	

LOGGING RECORD

ELEVATION 1162' G.L. DISTANCE TO GROUND NONE

DEPTH MEASUREMENT TAKEN FROM ☐ Kelly Bushing ☒ Ground ☐ Other (specify) _____

Logged By (company) SCHLUMBERGER

Type of Log	GAMMA RAY	COMP. NEUTRON	COMP. DENSITY	DUAL INDUCTION	DIGITAL SONIC
Date	10-4-93	10-4-93	10-4-93	10-4-93	10-4-93
From (feet)	0	0	1939	1939	1939
To (feet)	2210	2210	2210	2203	2210

REMARKS

1) 4½" OD CASING CEMENTED WITH 110 SKS OF CLASS A + 4% $CaCl_2$ + ½% HALAD 322 + ⅜% D-AIR. ON 10/6/93. LATCH DOWN BAFFLE SET @ 2171'.

2) CUT SIDEWALL CORES @ 1' INTERVALS FROM 2060' TO 2074'.

3) PERMIT NO: 47-051-00757F

PREPARED BY Ronald A. Schoff DATE 8 5 94 APPROVED BY _____ DATE _ _ _ _ _ _

4) WELLHEAD DATA: 4½"X7", API 2000, ERC FLANGED TREE WITH 2-4 1/16" API 2000, FOSTER GATE VALVES. WELLHEAD ATTACHED TO THE 8⅝" OD CASING WITH A 7"X8⅝" SWEDGE AND AN 8⅝" BELLED COUPLING.

WW-2A1
(Rev. 1/11)

Operator's Well Number Victory B 4399

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6, Section 8(d)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

(1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;

(2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
T.C. Pipes et al	S.B. Kelly		DBV 146/493
William Burkett and Beluah Burkett, his wife et al	The Manufacturers Light and Heat Company		DBV 326/407

Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Columbia Gas Transmission, LLC
By: Brad Nelson
Its: Storage Engineer

WW-2B1
(5-12)

Well No. Victory B 4399

West Virginia Department of Environmental Protection
Office of Oil and Gas

NOTICE TO SURFACE OWNERS

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing. The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore, if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

Be advised, you have the right to sample and analyze any water supply at your own expense.

Listed below is the laboratory chosen by operator to perform analysis, and contactor chosen to collect sample.

Certified Laboratory Name _____
Sampling Contractor _____

Well Operator Not applicable - existing underground natural gas storage well.
Address _____

_____

Telephone _____

FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underling which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site, the Chief may require the operator to test wells up to 2000 feet from the proposed site.

WW-9
(5/16)

API Number 47 - 051 - 007570000
Operator's Well No. Victory B 4399

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Columbia Gas Transmission, LLC OP Code 307032

Watershed (HUC 10) Fish Creek Quadrangle Cameron, WV

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ☐ No ☑

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste: _____

Will a synthetic liner be used in the pit? Yes ☐ No ☑ If so, what ml.? _____

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application (if selected provide a completed form WW-9-GPP)
■ Underground Injection (UIC Permit Number 34-009-23821, 34-009-23823, 34-009-23824, 34-105-23619)
_____ Reuse (at API Number _____)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
■ Other (Explain Appalachian Water Services, Station W1 Ronco WTP, Masontown, PA - Permit 2608201

Will closed loop systembe used? If so, describe: Yes - steel piping connecting wellhead and tank(s).

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Fresh water

-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used in drilling medium? NaCl, biocide, polymer, starch, calcium carbonate, surfactant (CTCO), HCl acid (stimulation)

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. N/A

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) _____

-Landfill or offsite name/permit number? If needed: Rumpke Beech Hollow Landfill - Wellston, OH

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature Brad Nelson
Company Official (Typed Name) Brad Nelson
Company Official Title Storage Engineer

Commonwealth of Pennsylvania
County of Allegheny

Subscribed and sworn before me this 11 day of March, 2022

Elaine Rybski Notary Public

My commission expires 5/11/2022

Commonwealth of Pennsylvania - Notary Seal
Elaine Rybski, Notary Public
Allegheny County
My commission expires May 11, 2022
Commission number 1332803
Member, Pennsylvania Association of Notaries

Form WW-9

Operator's Well No. Victory B 4399

Proposed Revegetation Treatment: Acres Disturbed <1.0 Prevegetation pH 6.5

Lime 2 Tons/acre or to correct to pH 7

Fertilizer type 10-10-10

Fertilizer amount 600 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Rye	40	Orchard Grass and/or Tall Fescue	29
		Birdsfoot trefoil (empire)	9
		Annual Rye	12

For wetland areas: Annual Rye (40 lbs/acre) until indigenous plants re-establish cover.

Attach:
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.03.15 09:06:53 -04'00'

Comments:

Title: Inspector Date: 3-15-2022

Field Reviewed? (X) Yes ( ) No

API Number 47 - 051 - 007570000
Operator's Well No. Victory B 4399

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
GROUNDWATER PROTECTION PLAN

Operator Name: Columbia Gas Transmission, LLC

Watershed (HUC 10): Fish Creek Quad: Cameron, WV

Farm Name: DOBBS, GARY R. & JAN C.

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

No fluids planned to be discharged.

No fertilizer will be stored on site. Small quantities of fuel, oil, and lubrications will be stored on site, but located within secondary containment.

Accidental release from well fluids and spills from construction equipment are the only sources of contaminate to groundwater.

All accumulated fluids to be hauled off site to UIC disposal facility.

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

All construction and well servicing equipment will be monitored and inspected daily for leaks. Fluid pumping well service equipment will have secondary containment under all leak paths. Spill kits will be on site.

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

Big Run is approximately 730' to the S.

The closest Well Head Protection Area is 6.9 mi. (WV3305202 - Hundred Littleton PSD).

4. Summarize all activities at your facility that are already regulated for groundwater protection.

N/A

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

N/A

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

No waste material will be used for deicing or fill material on the property.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

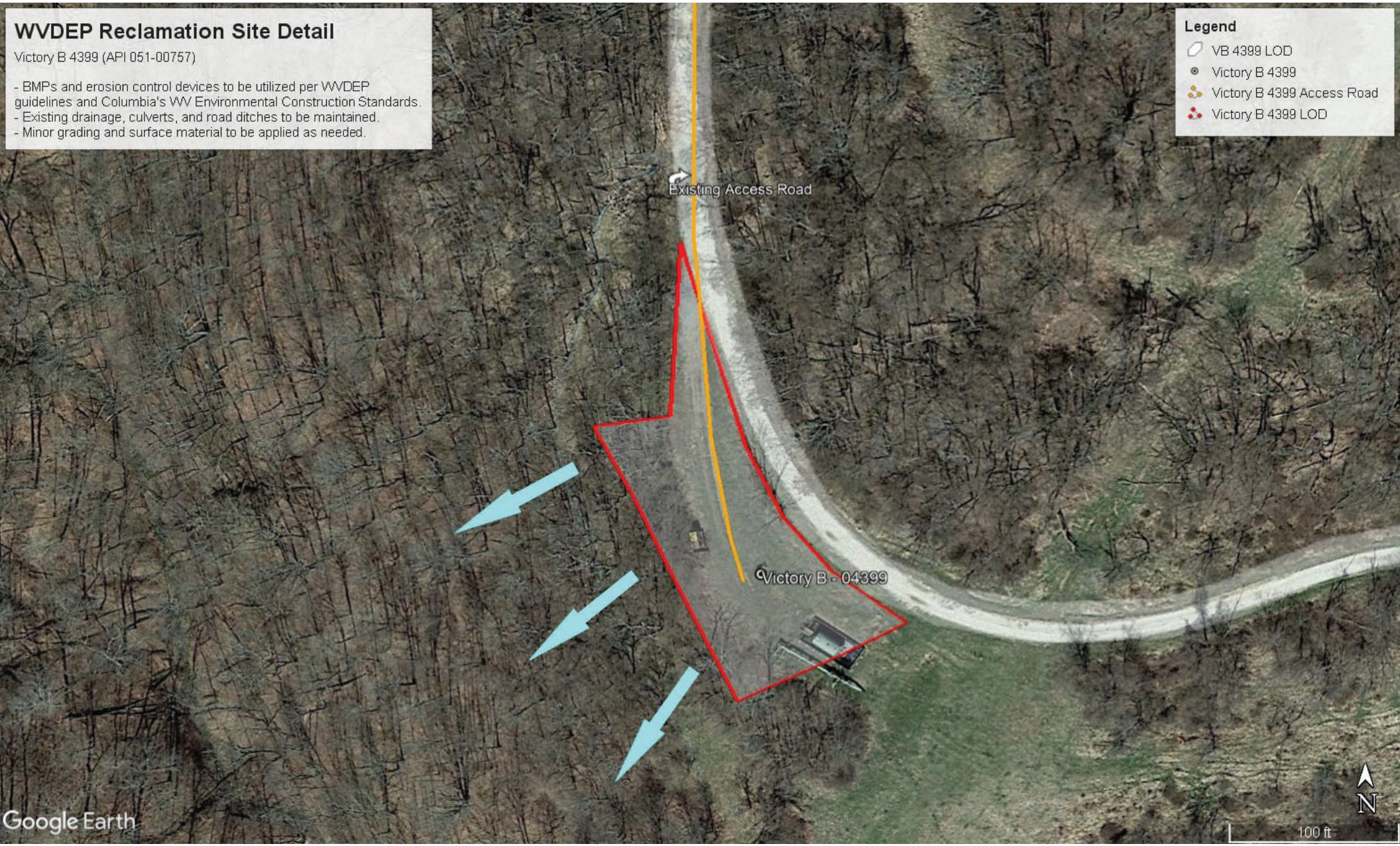
During routine tailgate meetings groundwater protection will be a topic of discussion.

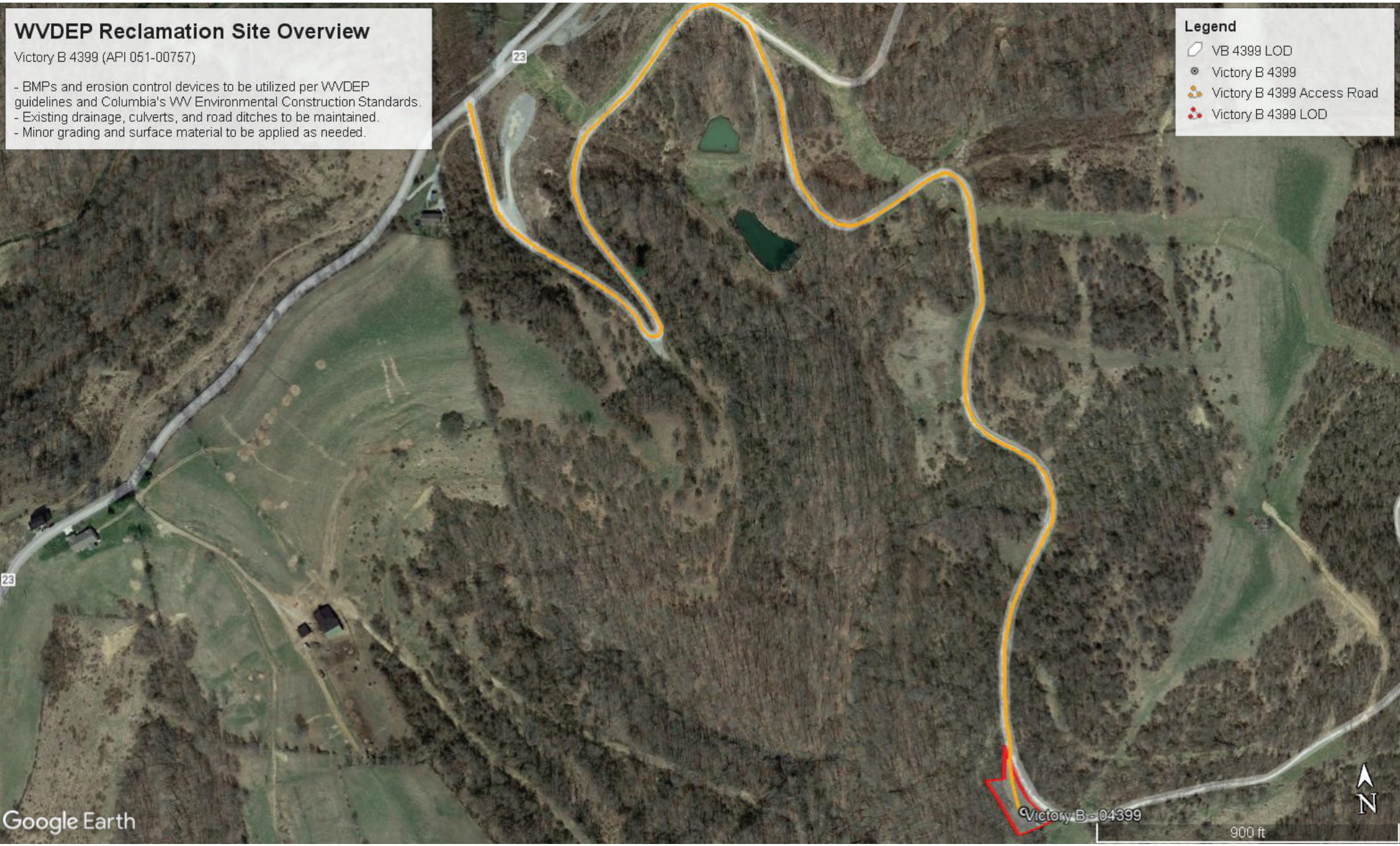
8. Provide provisions and frequency for inspections of all GPP elements and equipment.

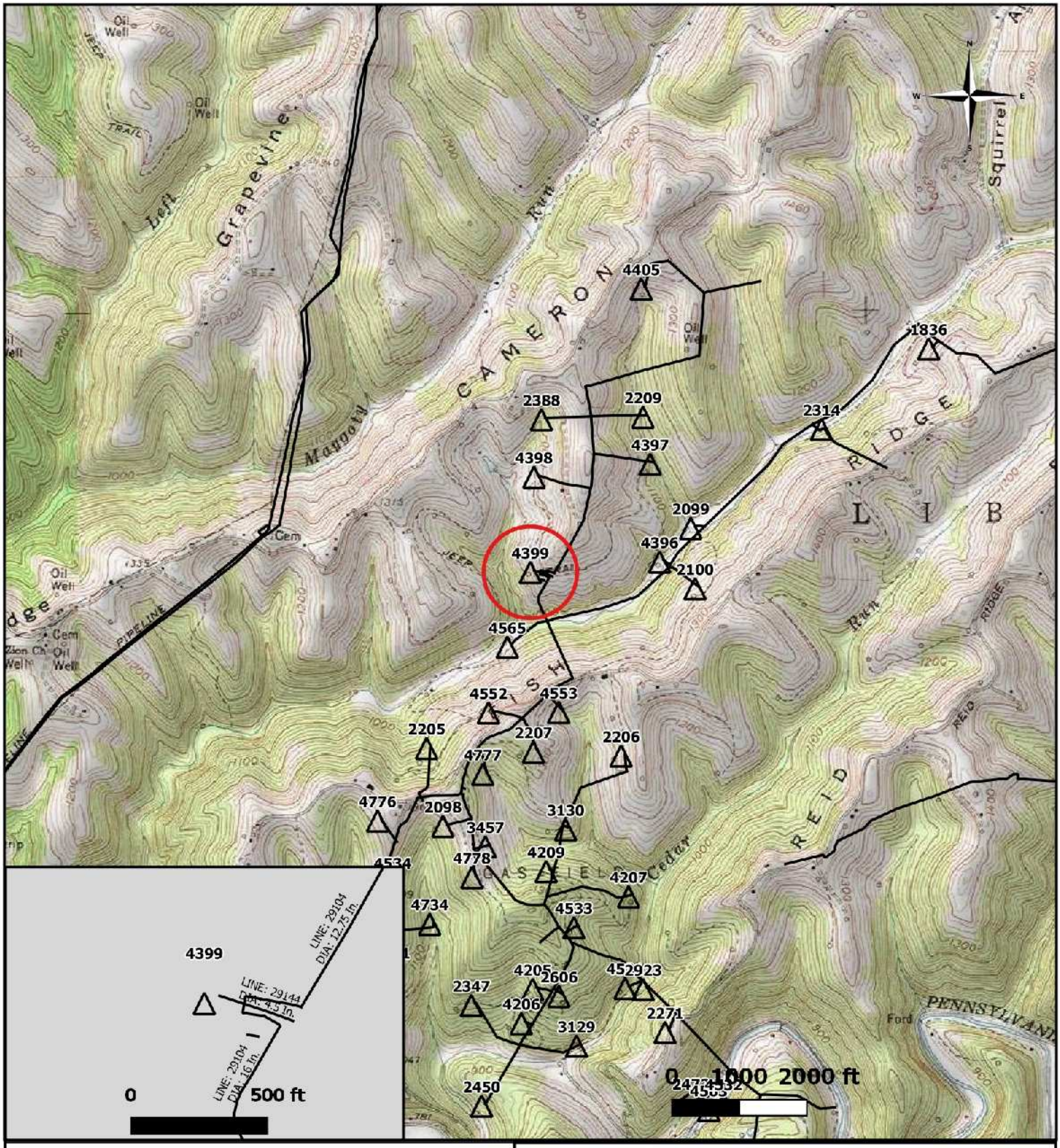
No fertilizer will be stored on site. Small quantities of fuel, oil, and lubrications will be stored on site, but located within secondary containment. Construction and well servicing equipment will be monitored and inspected daily for leaks or spills.

Signature: Gayne Knitowski Digitally signed by Gayne Knitowski Date: 2022.03.15 09:06:29 -04'00'

Date: 3-15-2022


WVDEP Reclamation Site Detail
Victory B 4399 (API 051-00757)
- BMPs and erosion control devices to be utilized per WVDEP guidelines and Columbia's WV Environmental Construction Standards.
- Existing drainage, culverts, and road ditches to be maintained.
- Minor grading and surface material to be applied as needed.
Legend
VB 4399 LOD
Victory B 4399
Victory B 4399 Access Road
Victory B 4399 LOD
Existing Access Road
Victory B - 04399
Google Earth
N
100 ft


WVDEP Reclamation Site Overview
Victory B 4399 (API 051-00757)
- BMPs and erosion control devices to be utilized per WVDEP guidelines and Columbia's WV Environmental Construction Standards.
- Existing drainage, culverts, and road ditches to be maintained.
- Minor grading and surface material to be applied as needed.
Legend
VB 4399 LOD
Victory B 4399
Victory B 4399 Access Road
Victory B 4399 LOD
23
23
Victory B - 04399
N
900 ft
Google Earth



Legend

Storage Well Classification

- Active
- Observation
- Special
- CPG Pipelines
- Well of Interest

TransCanada
In business to deliver

VictoryB Storage Field
Storage Well 4399
Marshall County, West Virginia

USGS Topographic Map (Scaled 2000 Ft/ In) to be included with PROJECT ENVIRONMENTAL INFORMATION FORM (PEIF).

WW - 2B
(Rev. 8/10)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: Columbia Gas Transmission, LLC | 307032 (Operator ID) | Marshall (County) | Liberty (District) | Cameron, WV (Quadrangle)

2) Operator's Well Number: Victory B 4712 3) Elevation: 774.8'

4) Well Type: (a) Oil _____ or Gas X

(b) If Gas: Production ____ / Underground Storage X

Deep _____ / Shallow X

5) Proposed Target Formation(s): Maxton, Big Injun Proposed Target Depth: 1428'

6) Proposed Total Depth: 1738 Feet Formation at Proposed Total Depth: Big Injun

7) Approximate fresh water strata depths: None reported by the driller in 1962.

8) Approximate salt water depths: None reported by the driller in 1962.

9) Approximate coal seam depths: 427'-435' (as reported by the driller in 1962).

10) Approximate void depths,(coal, Karst, other): None reported by the driller in 1962.

11) Does land contain coal seams tributary to active mine? Yes

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)

Run a casing inspection and cement bond log. Add perforations in the Maxton. Perform coiled tubing clean-out and acid wash.

*Casing listed below are existing. No plans to remove, alter, or install new casing/tubing.

13) **CASING AND TUBING PROGRAM**

TYPE SPECIFICATIONS FOOTAGE INTERVALS CEMENT

	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor						
Fresh Water	13-3/8"	H-40	48		95'	125 sx.
Coal	8-5/8"	J-55	24		480'	400 sx.
Intermediate						
Production	5-1/2"	J-55	17		1554'	450 sx.
Tubing						
Liners						

Packers: Kind: N/A

Sizes:

Depths Set

WW-2A
(Rev. 6-14)

1). Date: 3/24/2022

2.) Operator's Well Number Victory B 4712

3.) API Well No.: State 47- County 051 - Permit 004580000

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE AND APPLICATION FOR A WELL WORK PERMIT

4) Surface Owner(s) to be served:
(a) Name Andrea Magers
Address 27 Millers Cove Lane
Cameron, WV 26033
(b) Name Jeremiah Magers
Address 27 Millers Cove Lane
Cameron, WV 26033
(c) Name
Address

6) Inspector Gayne J. Knitowski
Address P.O. Box 108
Gormania, WV 26720
Telephone 304-546-8171

5) (a) Coal Operator
Name Consol RCPC, LLC
Address 1000 Consol Energy Drive, Suite 100
Canonsburg, PA 15317
(b) Coal Owner(s) with Declaration
Name Consol RCPC, LLC
Address 1000 Consol Energy Drive, Suite 100
Canonsburg, PA 15317
Name
Address
(c) Coal Lessee with Declaration
Name N/A
Address

TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:

___ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas

OR

x Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through ___ on the above named parties by:

___ Personal Service (Affidavit attached)
X Certified Mail (Postmarked postal receipt attached)
___ Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator Columbia Gas Transmission, LLC
By: Brad Nelson
Its: Storage Engineer
Address: 455 Racetrack Road
Washington, PA 15301
Telephone: 724-250-0610
Email: brad_nelson@tcenergy.com

Commonwealth of Pennsylvania - Notary Seal
Elaine Rybski, Notary Public
Allegheny County
My commission expires May 11, 2022
Commission number 1332803
Member, Pennsylvania Association of Notaries

Subscribed and sworn before me this 25 day of March, 2022

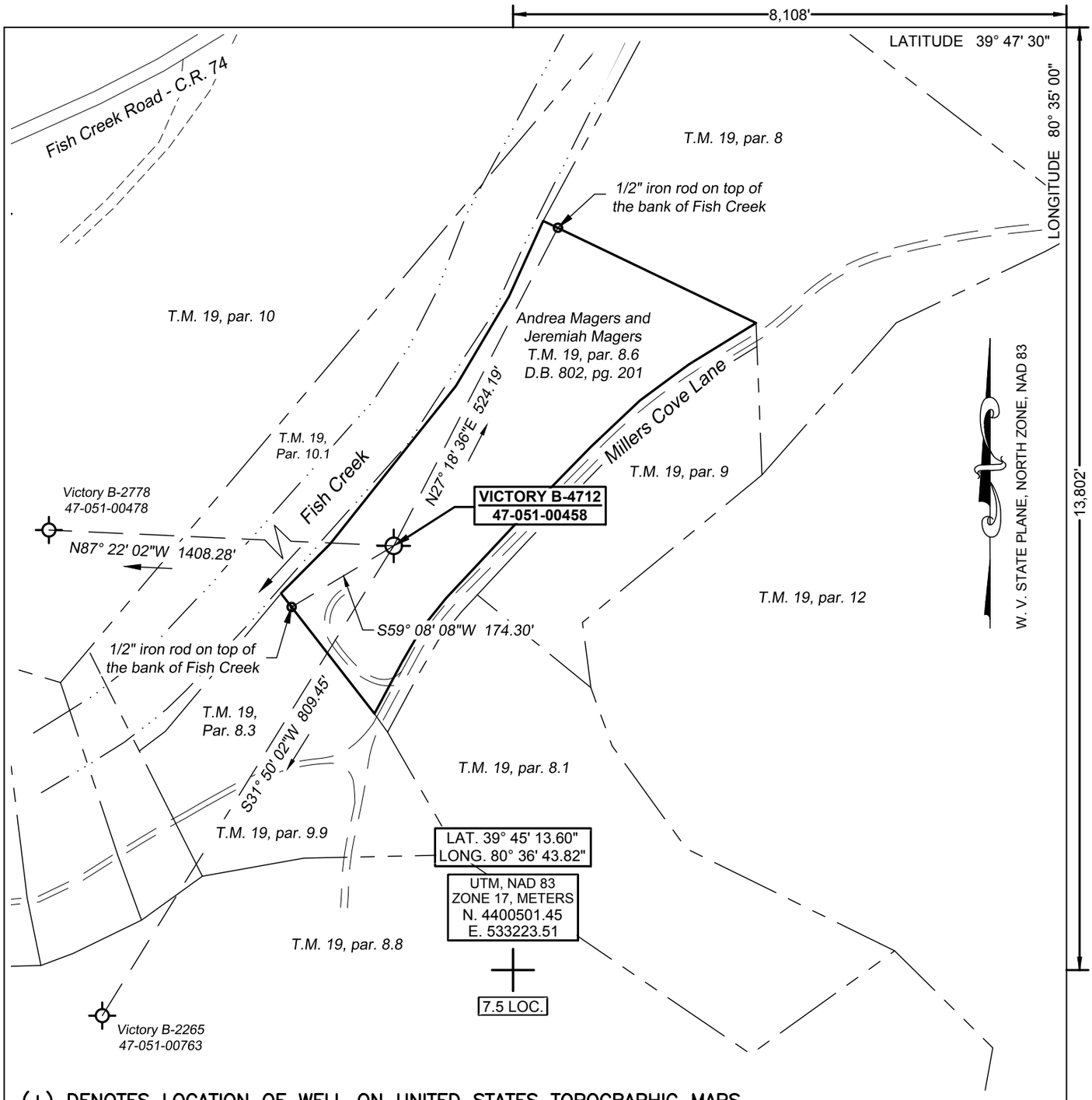
Elaine Rybski Notary Public

My Commission Expires 5/11/2022

Commonwealth of Pennsylvania
County of Allegheny

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE No 2101-2345-001-003
DRAWING No. VICTORY B-4712
SCALE 1"=200'
MINIMUM DEGREE OF ACCURACY 1:200
PROVEN SOURCE OF ELEVATION TRIMBLE R10 GPS UNIT

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

(SIGNED) R. Thaw

ROBERT F. THAW PS #965

ROBERT F. THAW LICENSED No. 965 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
NITRO, WV

DATE MARCH 18 2022
OPERATOR'S WELL No. 4712
API WELL No. 47 051 – 00458
STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION ___ STORAGE X DEEP ___ SHALLOW X

LOCATION: ELEVATION 774.8' WATER SHED FISH CREEK
DISTRICT LIBERTY COUNTY MARSHALL
QUADRANGLE CAMERON, WV

SURFACE OWNER ANDREA MAGERS AND JEREMIAH MAGERS ACREAGE 3.66 ACRES
OIL & GAS ROYALTY OWNER ANDREA MAGERS AND JEREMIAH MAGERS
LEASE ACREAGE 88 LEASE No. 3032009-000, 3002298-000

PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) RE-PERFORATE

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___

TARGET FORMATION MAXTON, BIG INJUN ESTIMATED DEPTH 1738
WELL OPERATOR COLUMBIA GAS TRANSMISSION, LLC DESIGNATED AGENT BRAD NELSON
ADDRESS PO BOX 1273, CHARLESTON, WV 25325-1273 ADDRESS 455 RACETRACK ROAD WASHINGTON, PA 15301

P:\2021\2101-2345-001-003 - TC ENERGY - VICTORY B - 4712\50-SURVEY\DWG\VICTORY B - 4712 - WELL PLAT.DWG

Objective Log, Re-Perf, CTCO, Acid | **LAST PROFILE UPDATE:**

TITLE:	Log, Re-Perf, CTCO, Acid				**WORK TYPE:**	GPMC
FIELD:	Victory B	**WELL:**	4712			
STAT:	WV	**SHL (Lat/Long):**	39.753745	-80.611991	**API:**	47-051-00458-00-00
TWP:	Liberty	**BHL (Lat/Long):**	39.753745	-80.611991	**CNTY:**	Marshall

JOB PLAN

All freshwater based fluids to be treated with biocide and clay stabilizer.
All acids to be treated with corrosion inhibitor and iron control.

1 Obtain NRP clearances, TOPs, pipeline crossing eval., etc.
2 Notify Reservoir Engineering & Geosciences (REG) of intent to take well out of service.
3 Prepare access road and well site. Install ECD's per EM&CP.

Note: All work needs to be performed within a 5 day period to prevent risk of acid corrosion.

4 Service all wellhead valves.
5 Document initial casing and annular pressures.
6 MIRU Baker Atlas. Run gauge ring, HRVRT, and InTex logs. Report results to WE&T Engineer.
7 RIH with perf gun (90 degree phasing, 4 SPF). Add Maxton perfs as follows, correlated to 7/12/2000 Baker GR-Neu.-DT log.
1430' - 1471'.
8 RDMO Baker Atlas.
Prior to acid stimulation, verify with WE&T Engineer that results of HRVRT and CBL support stimulation pressures.
9 MIRU 1.75" CTU. Obtain stabilized pre-cleanout rate through 3/4" choke.
10 RIH with jet nozzle. Begin CTCO from top to TD. Wash across perfs 2 times with TFW. Start acid and wash perfs 2 times with foamed acid.
11 RIH back to bottom, shut well in, and spot 500 gals 15% HCl acid.
12 POOH to 1200 ft and load well with TFW.
13 Displace acid with 1000 gal. TFW. Tentative maximum treating pressure is 2500 psig contingent upon HRVRT results.
14 RBTB and unload well with nitrogen. Spent acid must be recovered within 24 hrs.
15 POOH.
16 Flow well to re-establish gas flow and recover fluids.
17 Obtain 45-min flowback test and report results to REG.
18 RDMO CTU.
19 Reclaim road and location.
20 Commission well to place back in service.
21 Notify REG that well is ready for storage service.

PREPARED BY:	Brad Nelson	**REVIEWED BY:**	**APPROVED:**
PREP DATE:	11/24/2021		

COLUMBIA GAS SYSTEM - PITTSBURGH GROUP COMPANIES

WELL LOG SUMMARY

V.F. 46.34 m.l.

1 of 1 Sheets

LOCATION

COMPANY	DIV.	FIELD	WELL NO.
The Manufacturers Light and Heat Company	4	Cameron, W. Va.	4712

FARM	ACRES	LEASE NO.	DISTRICT - [redacted]	COUNTY	STATE
G. M. Miller Hrs.	88	2298	Liberty	Marshall	W. Va.

TOPO. MAP — Quadrangle — Ft. _____ of _____ ° _____ / and Ft. _____ of _____ ° _____ /

CONTRACTOR

TOP HOLE CONTRACTOR — CONTRACTOR: — ADDRESS: — Drilled from _____ Ft. to _____ Ft. — Type of Rig _____

DRILLING CONTRACTOR — CONTRACTOR: Lohmann and Johnson Oil Co., Inc — ADDRESS: 1917 Clark Building, Pittsburgh 22, Pennsylvania — Drilled from 0 Ft. to 1738 Ft. — Type of Rig Rotary Drilling Machine

[redacted] COMMENCED (DATE)	[redacted] COMPLETED (DATE)	COMPLETED TOTAL DEPTH	DATE PURCHASED	FOR. WELL NO.
Drilling 6-12-62	Well 6-20-62	1738 ft.		

HOLE SIZE — BIT GAUGE (INCHES)	17-1/4	12-1/4	7-7/8	
HOLE SIZE — FROM-TO (FEET)	0-108	0-508	0-1738	
CASING AND TUBING — SIZE (O.D.)	13-3/8"	8-5/8"	5-1/2"	
WEIGHT/FOOT	48#	24#	17#	
STEEL GRADE	H	J	J	
COUPLING TYPE	Short	Short	Short	
SETTING DEPTH	95	480	1554	
LEFT IN HOLE	95	480	1554	
CEMENT — NO. OF SACKS	125	400	450	
TYPE	1-S	1S-2	1S-2	
WEIGHT #/GAL.	15	14.7	14.7	
PACKER — MANUFACTURER			Halliburton	
TYPE			Formation	
SIZE			5-1/2"	
SETTING DEPTH			1556	

(All Measurements less threads)

WELL STIMULATION

TREATMENT	TYPE *	SIZE AND/OR AMOUNT	ZONE TREATED	OPEN FLOW MCF/DAY	PERFORMED BY	DATE
			From / to	Before / After		
			From / to	Before / After		
			From / to	Before / After		
			From / to	Before / After		

OPEN FLOW TEST

DATE GAUGED	FORMATION	PAY ZONE	TYPE GAUGE (SPECIFY)	PRESSURE (SPECIFY UNITS)	SIZE OPENING-IN.	OPEN FLOW M.C.F./DAY	OPEN FLOW HRS. FLOWN
6 19 62	Big Injun	From 1556 to 1738	Pitot Tube	Mercury .5	4-1/2"	1360	10-Min.
6 20 62	Big Injun, Maxton	From 1556 to 1738; From 1428 to 1470	Pitot Tube	Mercury 15.0 PSIG	4-1/2"	1064.0	11-Min.

WELLHEAD PRESSURE TESTS

DATE TAKEN	FORMATION	MINUTE PRESSURE - PSIG 1	3	5	10	20	30	WELLHEAD PRESSURE - PSIG 24 HR.	48 HR.	72 HR.	MAX. PRESS.	TIME
6 19 62	Big Injun							480				
7 2 62	Big Injun, Maxton										580	12 Days

MISC.

DEPTH MEASUREMENT TAKEN FROM: ☐ Derrick Floor ☒ Ground Other (Specify) _____ — DIST. TO GROUND 0 ft. — ELEVATION 773

LOGGED ☒ Yes ☐ No — LOGGED BY (COMPANY): Schlumberger Well Surveying Corporation — DATE LOGGED 6 20 62

REMARKS

* Note: Form PD-17 "Well Fracture Report" to be completed and attached, if applicable

Drilling Completed 6-17-62

Bottom of 13-3/8" Casing beveled, 8-5/8" Casing set on Float Shoe. 5-1/2" Casing set on Formation Packer Shpe. Centralizers spaced on 5-1/2" and 8-5/8" Casings

Plug Down Pressures			Cement	Return	
13"	8-5/8"	5-1/2"	13"	8-5/8"	5-1/2"
100#	400#	700#	Yes	Yes	Yes

Attach additional sheets and forward to Production Dept. Pittsburgh General Office

Verified by Andrew T. Richardson — DIVISION ENGINEER

Approved by C.E. Minnear — DIVISION SUPERINTENDENT — Foreman

PP-44b

COLUMBIA GAS SYSTEM – PITTSBURGH GROUP COMPANIES

WELL LOG SUMMARY

____ of ____ Sheets

DIV.	FIELD	FARM	COUNTY	WELL NO.
4	Cameron, W. Va.	G. M. Miller	Marshall	4712

ORIGIN OF FORMATION DEPTHS ☐ Driller's Log ☒ Service Company Log ☐ Combination

FORMATION	TOP	BOTTOM	THICKNESS	REMARKS (Water, Gas, Oil encountered-Open Flows-Rock Pressure-etc.)
Pittsburgh Coal	427	435	8	Small Show of Gas
Murphy Sand	545	555	10	
Big Dunkard Sand	970	985	15	
First Salt Sand	1234	1246	12	
Second Salt Sand	1360	1388	28	
Maxton Sand	1428	1470	42	Gas at 1449-1470
Big Lime	1510	1556	46	
Big Injun Sand	1558			Not Drilled Through
Total Depth		1738		
Total Depth of 5-1/2" Casing		1556		
Note: Well Logged by Schlumberger Well Surveying Corporation 6-20-62 Maximum Depth Logged 1737'				Note: Drilled 17-1/4" hole to 108'. Run 93' of 13-3/8" Casing, Smls. Gr. H 48# and cemented it with 125 Bags of Cement, 1 Bag of Jel-flakes and 17 Bags of Calcium Chloride, 15 # Per Gal. Good Return of Cement at the Surface. Drilled 12-1/4" Hole to 508', Run 482' of 8-5/8" Casing, Smls. Gr. J 21# on a Float Shoe set at 480' and cemented it with 400 Bag Cement, 39 Bags of Aquagel, 4 Bags of Flocele 14.7# Per Gal. Good Return of Cement at the Surface. Drilled 7-7/8" Hole to 1738'. Run 1561' of 5-1/2" Casing Smls. Gr. J 17# on a Formation Packer Shoe set at 1556' and Cemented it with 450 Bags of Cement, 4 Bags of Flocele and 1 Bag of Hydrotan 14.7# per Gal. Good Return of Cement at the Surface.
Perforated Maxton	1428	1470		
4 Shots per ft. 3-5/8 Crack Jets under 55 Gl. 10% Acetic Acid				

pg-10

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL RECORD

Quadrangle Cameron
Permit No. MARS-458
Oil or Gas Well STORAGE GAS (KIND)

Company The Mfrs. Lt. and Ht. Co.
Address 800 Union Trust Bldg., Pittsburgh 19, Pa.
Farm Miller Heirs Acres 88
Location (waters)
Well No. L-4712 Elev. 773'
District Liberty County Marshall
The surface of tract is owned in fee by
Address
Mineral rights are owned by
Address
Drilling commenced June 12, 1962
Drilling completed June 20, 1962
Date Shot 6/20/62 From Big Injun To Maxton
With Pitot Tube
Open Flow /10ths Water in Inch
15.0PSIG /10ths Merc. in 4 1/2 Inch
Volume 10,640,000 Cu. Ft.
Rock Pressure 580 lbs. 12 days hrs.
Oil bbls., 1st 24 hrs.
Fresh water feet feet
Salt water feet feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16			Kind of Packer
13 3/8"	95	95	
10			Size of
~~8 1/4~~ 5/8"	480	480	
6 5/8			Depth set
~~5 3/16~~ 1/2"	1554	1554	
3			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED SIZE No. Ft. Date

COAL WAS ENCOUNTERED AT 427 FEET INCHES
FEET INCHES FEET INCHES
FEET INCHES FEET INCHES

Formation	Color	~~Hard or Soft~~ THICKNESS	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
Pittsburgh Coal		8	427	435	Small show of gas		
Murphy Sand		10	545	555			
Big Dunkard Sand		15	970	985			
First Salt Sand		12	1234	1246			
Second Salt Sand		28	1360	1388			
Maxton Sand		42	1428	1470	Gas at 1449-1470		
Big Lime		46	1510	1556			
Big Injun Sand			1558	1558	Not Drilled Through		
Total Depth				1738			
Total Depth of 5-1/2" Casing				1556			

(Over)

Form OG-2

STATE OF WEST VIRGINIA

DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL DRILLING PERMIT

Permit No. MARS-458

JUNE 23, 19 62

TO THE MANFACTURERS LIGHT & HEAT CO.
Well Operator

800 UNION TRUST BUILDING
Street

PITTSBURGH 19, PENNSYLVANIA
City

LOCATION OF WELL:

LIBERTY DISTRICT

MARSHALL COUNTY

WELL No. L-4712 ELEVATION 773'

MILLER HEIRS FARM

ACRES 88

The Department of Mines received your Notice and Plat of the Well described above on the 13th day of JUNE, 19 62, showing proposed location for drilling an oil or gas well.

Ten days having expired since the receipt of Notice and Plat and no objections having been made by the coal owners, coal operators, or the Department of Mines, the location is approved and permission is granted you to drill strictly in accordance with the several provisions of Chapter 22, Code of 1931, the Well to be numbered and located as above shown and more particularly as indicated on the Plat on file with this Department.

This Permit is assignable either by separate instrument, or incident to the transfer of title to the oil and gas, or of the right to drill therefore at said location, but no such assignment shall entitle the assignee to drill thereat until he shall have filed with the Department of Mines a certified, or sworn copy of the instrument assigning same, or as an incident to which such assignment was made.

In case the well is not commenced within four months from the above date, this Permit shall expire and be of no further force or effect.

LEONARD J. TOMB
DIRECTOR Department of Mines

BY
ASSISTANT DIRECTOR-OIL AND GAS DIVISION

WW-2A1
(Rev. 1/11)

Operator's Well Number Victory B 4712

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6, Section 8(d)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

(1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;

(2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
George M. Miller and Ottie M. Miller	The Wheeling Natural Gas Company		DBV 137/395

Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Columbia Gas Transmission, LLC
By: Brad Nelson
Its: Storage Engineer

WW-2B1
(5-12)

Well No. Victory B 4712

West Virginia Department of Environmental Protection
Office of Oil and Gas

NOTICE TO SURFACE OWNERS

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing. The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore, if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

Be advised, you have the right to sample and analyze any water supply at your own expense.

Listed below is the laboratory chosen by operator to perform analysis, and contactor chosen to collect sample.

Certified Laboratory Name _____
Sampling Contractor _____

Well Operator Not applicable - existing underground natural gas storage well.
Address _____

_____

Telephone _____

FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underling which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site, the Chief may require the operator to test wells up to 2000 feet from the proposed site.

WW-9
(5/16)

API Number 47 - 051 - 004580000
Operator's Well No. Victory B 4712

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Columbia Gas Transmission, LLC OP Code 307032

Watershed (HUC 10) Fish Creek Quadrangle Cameron, WV

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ☐ No ☑

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste: _____

Will a synthetic liner be used in the pit? Yes ☐ No ☑ If so, what ml.? _____

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application (if selected provide a completed form WW-9-GPP)
■ Underground Injection (UIC Permit Number 34-009-23821, 34-009-23823, 34-009-23824, 34-105-23619)
_____ Reuse (at API Number _____)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
■ Other (Explain Appalachian Water Services, Station W1 Ronco WTP, Masontown, PA - Permit 2608201

Will closed loop system be used? If so, describe: Yes - steel piping connecting wellhead and tank(s).

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Fresh water

-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used in drilling medium? NaCl, biocide, polymer, starch, calcium carbonate, surfactant (CTCO), HCl acid (stimulation)

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. N/A

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) _____

-Landfill or offsite name/permit number? If needed: Rumpke Beech Hollow Landfill - Wellston, OH

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature Brad Nelson

Company Official (Typed Name) Brad Nelson

Company Official Title Storage Engineer

Commonwealth of Pennsylvania
County of Allegheny

Subscribed and sworn before me this 25 day of March, 2022

Elaine Rybski Notary Public

My commission expires 5/11/2022

Commonwealth of Pennsylvania - Notary Seal
Elaine Rybski, Notary Public
Allegheny County
My commission expires May 11, 2022
Commission number 1332803
Member, Pennsylvania Association of Notaries

Form WW-9

Operator's Well No. Victory B 4712

Proposed Revegetation Treatment: Acres Disturbed <1.0 Prevegetation pH 6.5

Lime 2 Tons/acre or to correct to pH 7

Fertilizer type 10-10-10

Fertilizer amount 600 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Rye	40	Orchard Grass and/or Tall Fescue	29
		Birdsfoot trefoil (empire)	9
		Annual Rye	12

For wetland areas: Annual Rye (40 lbs/acre) until indigenous plants re-establish cover.

Attach:
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: _____

Comments: _____

Title: _____ Date: _____

Field Reviewed? (_____) Yes (_____) No

API Number 47 - 051 - 004580000
Operator's Well No. Victory B 4712

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
GROUNDWATER PROTECTION PLAN

Operator Name: Columbia Gas Transmission, LLC

Watershed (HUC 10): Fish Creek Quad: Cameron, WV

Farm Name: MILLER HEIRS

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

No fluids planned to be discharged.

No fertilizer will be stored on site. Small quantities of fuel, oil, and lubrications will be stored on site, but located within secondary containment.

Accidental release from well fluids and spills from construction equipment are the only sources of contaminate to groundwater.

All accumulated fluids to be hauled off site to UIC disposal facility.

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

All construction and well servicing equipment will be monitored and inspected daily for leaks. Fluid pumping well service equipment will have secondary containment under all leak paths. Spill kits will be on site.

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

Fish Creek is approximately 200' to the NW.

The closest Well Head Protection Area is 6.0 mi. (WV3305202 - Hundred Littleton PSD).

4. Summarize all activities at your facility that are already regulated for groundwater protection.

N/A

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

N/A

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

No waste material will be used for deicing or fill material on the property.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

During routine tailgate meetings groundwater protection will be a topic of discussion.

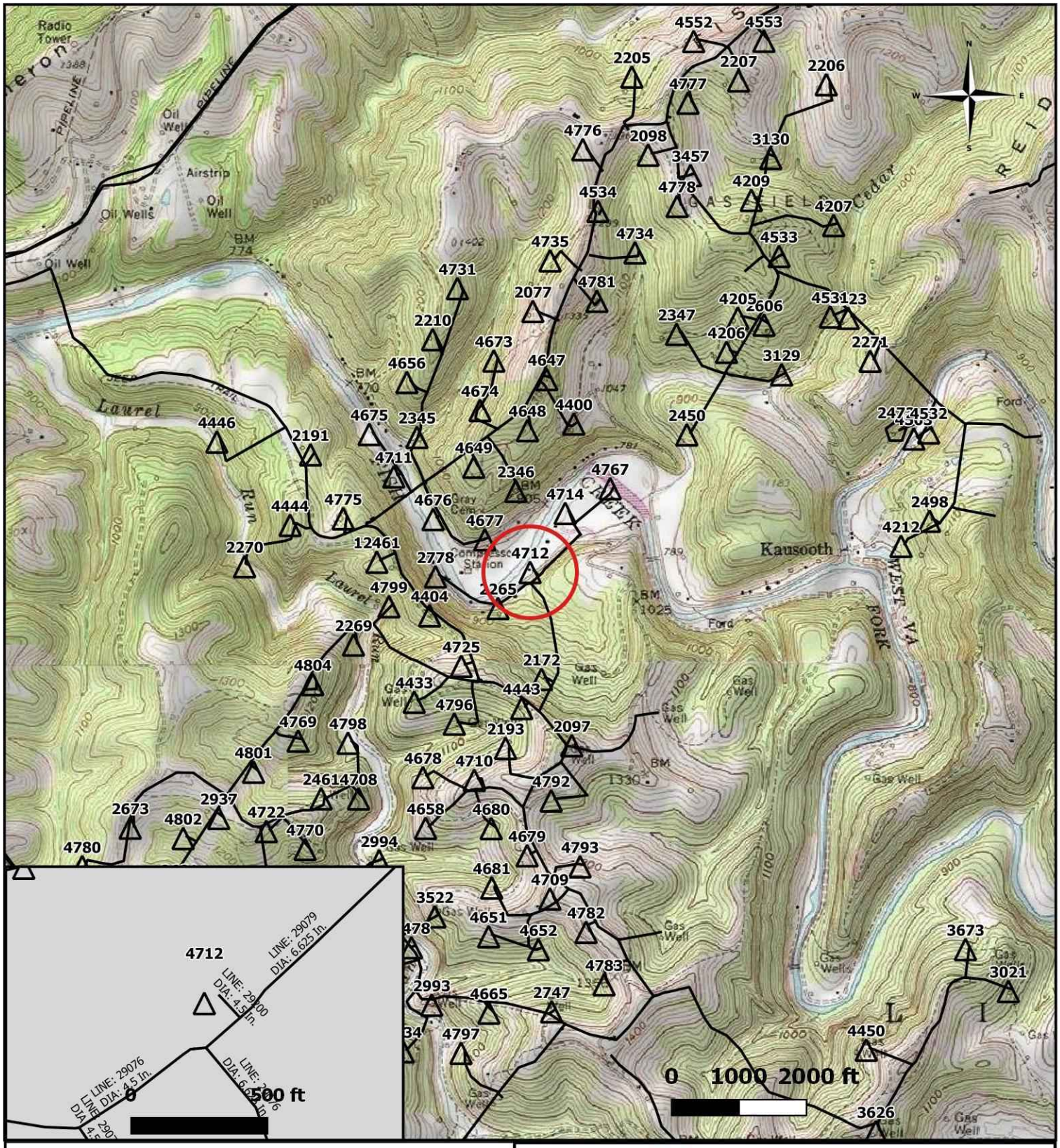
8. Provide provisions and frequency for inspections of all GPP elements and equipment.

No fertilizer will be stored on site. Small quantities of fuel, oil, and lubrications will be stored on site, but located within secondary containment. Construction and well servicing equipment will be monitored and inspected daily for leaks or spills.

Signature: _____

Date: _____

WVDEP Reclamation Site Overview / Detail
Victory B 4712 (API 051-00458)
- BMPs and erosion control devices to be utilized per WVDEP guidelines and Columbia's WV Environmental Construction Standards.
- Existing drainage, culverts, and road ditches to be maintained.
- Minor grading and surface material to be applied as needed.
Legend
VB 4712 Access Road
VB 4712 LOD
Victory B 4712
Turn Around Area
Fish Creek
Millers Cove Ln
Clark Hill
74/2
Victory B - 04712
Google Earth
500 ft
N



Legend

Storage Well Classification

- Active
- Observation
- Special
- CPG Pipelines
- Well of Interest

TransCanada
In business to deliver

VictoryB Storage Field
Storage Well 4712
Marshall County, West Virginia

USGS Topographic Map (Scaled 2000 Ft/ In) to be included with PROJECT ENVIRONMENTAL INFORMATION FORM (PEIF).

WR-38
Rev. 5/08

API # 47-051-00777-00-00

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE IN TRIPLICATE, one copy mailed to the Department, one copy to be retained by the Well Operator and the third copy (and extra copies if required) should be mailed to each coal operator at their respective addresses.

Farm name: Turner, Albert - Heirs Operator Well No.: 2604

LOCATION: Elevation: 1161.8' Quadrangle: Cameron, WV
District: Liberty County: Marshall
Latitude: 2735 Feet South of 39 Deg. 47 Min. 30 Sec.
Longitude: 5999 Feet West of 80 Deg. 32 Min. 30 Sec.

Well Type: OIL _____ GAS X

Company	Columbia Gas Transmission, LLC	Coal Operator or Owner	CONSOL RCPC, LLC
	1700 MacCorkle Avenue S.E., P.O. Box 1273		1000 Consol Energy Drive, Suite 100
	Charleston, WV 25325		Canonsburg, PA 15317
		Coal Operator or Owner	Murray Energy Corporation, American Consolidated Natural Resources, Inc.
Agent	Brad Nelson, Storage Engineer		46226 National Road
Permit Issued Date	4/8/2022		St. Clairsville, OH 43950

AFFIDAVIT

STATE OF ~~WEST VIRGINIA~~ Pennsylvania
County of Washington ss:

Brad Nelson and Bo Hampson being first duly sworn according to law depose and say that they are experienced in the work of plugging and filling oil and gas wells and were employed by the above named well operator, and participated in the work of plugging and filling the above well say that said work was commenced on the 12th day of April, 2022, and the well was plugged and filled in the following manner:

TYPE	FROM	TO	PIPE REMOVED	LEFT
Class A Cement	0'	290'	2-3/8"	7", 8-5/8"
Class A Cement	290'	657'	2-3/8"	7", 8-5/8"
Thixotropic Cement	657'	1191'	2-3/8"	7", 8-5/8"
Class A Cement	1191'	1247'	2-3/8"	7", 8-5/8"
Class A Cement	1247'	1678'	2-3/8"	7"
Cast Iron Bridge Plug (CIBP)	1678'	1685'	2-3/8"	7"
Class A Cement	1685'	2010'	2-3/8"	7"

See additional plugging data.

Description of monument: 7" casing, 48" above ground level, API and well number affixed and that the work of plugging and filling said well was completed on the 11th day of May, 2022.

And further deponents saith not. Brad Nelson
Bo Hampson

Commonwealth of Pennsylvania - Notary Seal
Emily Kaie Leach, Notary Public
Washington County
My Commission Expires November 18, 2023
Commission Number 1359854

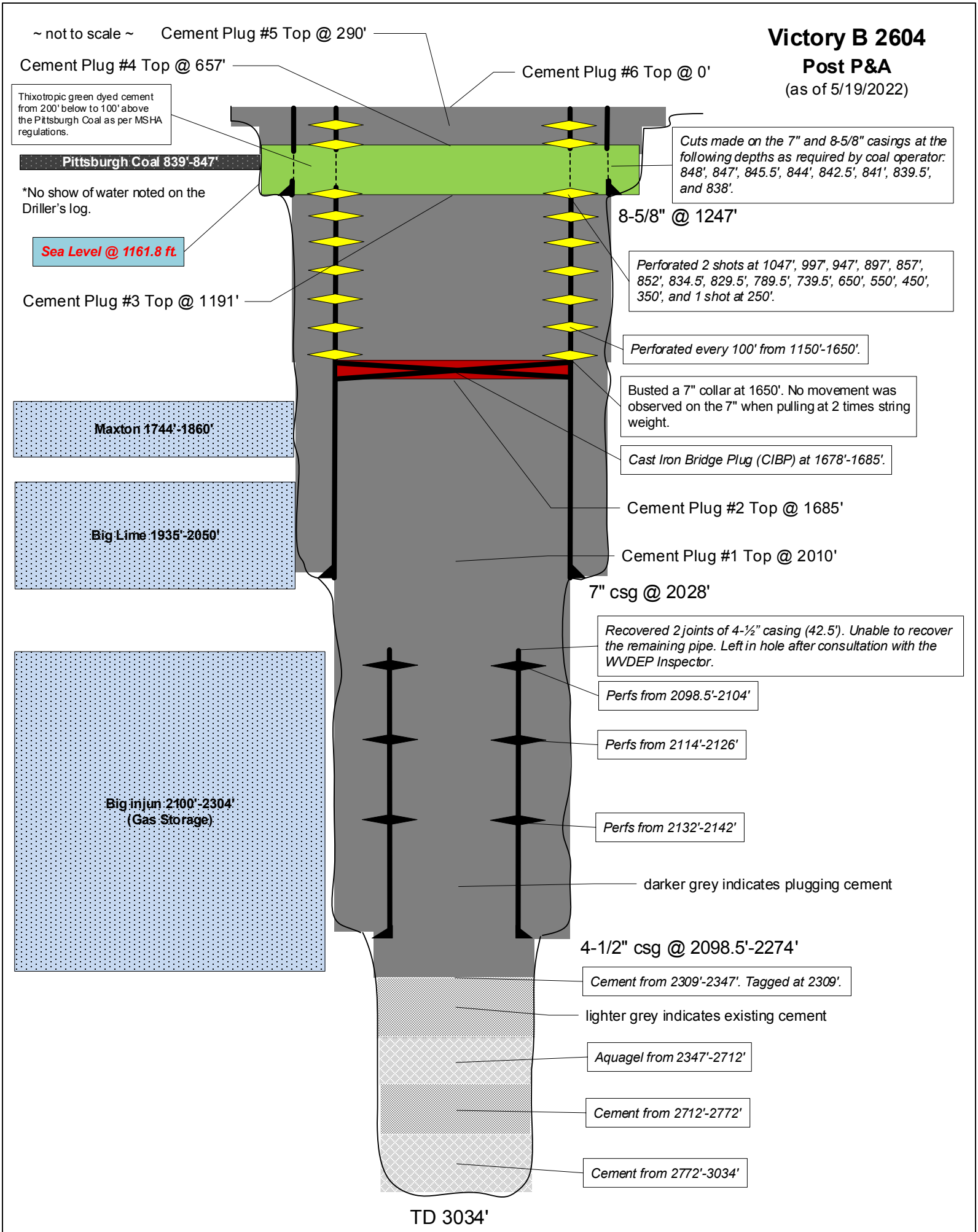
Sworn and subscribe before me this 19th day of May, 2022

My commission expires: 11/18/2023 Emily Leach
Notary Public

Affidavit reviewed by the Office of Oil and Gas: _____ Title: _____

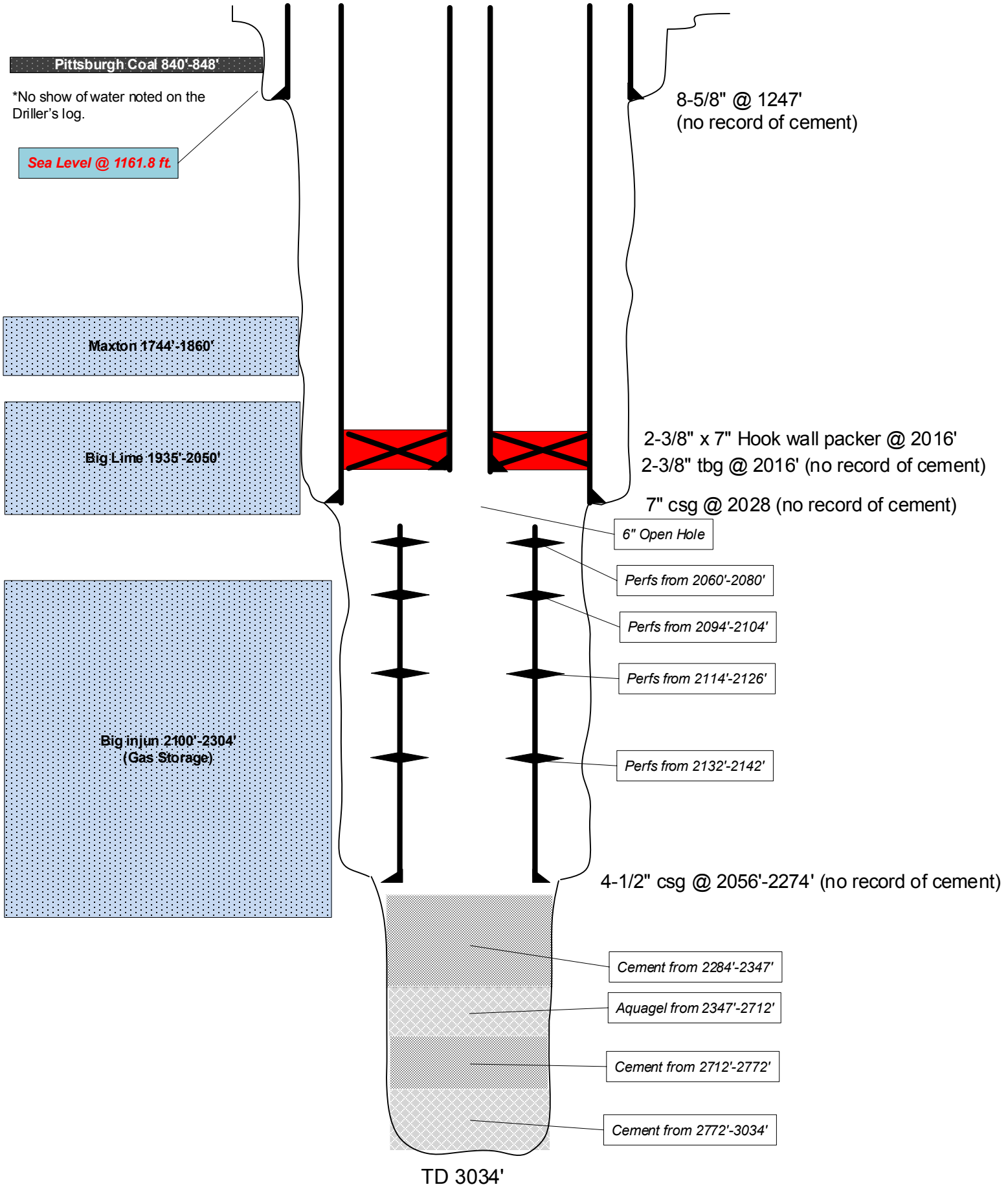
VB 2604 Additional Plugging Data

TYPE	FROM	TO	PIPE REMOVED	LEFT
Class A Cement	2010’	2016’	2-3/8”, packer	7”
Class A Cement	2016’	2028’	N/A	7”
Class A Cement	2028’	2056’	N/A	N/A
Class A Cement	2056’	2098.5’	4-1/2”	N/A
Class A Cement	2098.5’	2274’	N/A	4-1/2”
Class A Cement	2274’	2309’	N/A	N/A
Cement	2309’	2347’	N/A	N/A
Aquagel	2347’	2712’	N/A	N/A
Cement	2712’	2772’	N/A	N/A
Cement	2772’	3034’	N/A	N/A
Note: depths below 2309’ were plugged previously as per WVDEP well records.				


~ not to scale ~
Cement Plug #5 Top @ 290'
Cement Plug #4 Top @ 657'
Cement Plug #6 Top @ 0'
Victory B 2604
Post P&A
(as of 5/19/2022)
Thixotropic green dyed cement from 200' below to 100' above the Pittsburgh Coal as per MSHA regulations.
Pittsburgh Coal 839'-847'
*No show of water noted on the Driller's log.
Sea Level @ 1161.8 ft.
Cuts made on the 7" and 8-5/8" casings at the following depths as required by coal operator: 848', 847', 845.5', 844', 842.5', 841', 839.5', and 838'.
8-5/8" @ 1247'
Perforated 2 shots at 1047', 997', 947', 897', 857', 852', 834.5', 829.5', 789.5', 739.5', 650', 550', 450', 350', and 1 shot at 250'.
Cement Plug #3 Top @ 1191'
Perforated every 100' from 1150'-1650'.
Busted a 7" collar at 1650'. No movement was observed on the 7" when pulling at 2 times string weight.
Maxton 1744'-1860'
Cast Iron Bridge Plug (CIBP) at 1678'-1685'.
Big Lime 1935'-2050'
Cement Plug #2 Top @ 1685'
Cement Plug #1 Top @ 2010'
7" csg @ 2028'
Recovered 2 joints of 4-½" casing (42.5'). Unable to recover the remaining pipe. Left in hole after consultation with the WVDEP Inspector.
Perfs from 2098.5'-2104'
Perfs from 2114'-2126'
Big injun 2100'-2304'
(Gas Storage)
Perfs from 2132'-2142'
darker grey indicates plugging cement
4-1/2" csg @ 2098.5'-2274'
Cement from 2309'-2347'. Tagged at 2309'.
lighter grey indicates existing cement
Aquagel from 2347'-2712'
Cement from 2712'-2772'
Cement from 2772'-3034'
TD 3034'

~ not to scale ~

Victory B 2604
Prior to P&A
(as of 10/9/2020)



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Friday, April 8, 2022

WELL WORK PLUGGING PERMIT
Vertical Plugging

COLUMBIA GAS TRANSMISSION, LLC
STORAGE TECHNICAL SERVICES - 6TH FLOOR
1700 MACCORKLE AVE. SE.
CHARLESTON, WV 25314

Re: Permit approval for 0
47-051-00777-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: 0
Farm Name: TURNER, ALBERT - HEIRS
U.S. WELL NUMBER: 47-051-00777-00-00
Vertical Plugging
Date Issued: 4/8/2022

4705100777

PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.

2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.

3. Well work activities shall not constitute a hazard to the safety of persons.

FORM OG-8

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

4705100777P

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE MADE IN TRIPLICATE, ONE COPY MAILED TO THE DEPARTMENT, ONE COPY TO BE RETAINED BY THE WELL OPERATOR AND THE THIRD COPY (AND EXTRA COPIES IF REQUIRED) SHOULD BE MAILED TO EACH COAL OPERATOR AT THEIR RESPECTIVE ADDRESSES.

M. A. Hanna Coal Company
COAL OPERATOR OR OWNER
Cadiz, Ohio
Attention: T. J. Henderson
ADDRESS

Mary A. Turner Heirs
COAL OPERATOR OR OWNER
c/o Herman Turner, Atty.-in-Fact Box 68
ADDRESS
Hundred, West Virginia
LEASE OR PROPERTY OWNER

ADDRESS

The Manufacturers Light & Heat Company
NAME OF WELL OPERATOR
800 Union Trust Building
Pittsburgh 19, Pennsylvania
COMPLETE ADDRESS

March 29, 1965
WELL AND LOCATION
Liberty District
Marshall County
Well No. 2604
Alfred Turner Farm

STATE INSPECTOR SUPERVISING PLUGGING Bryan Shuman, Wileyville, West Virginia

AFFIDAVIT

STATE OF WEST VIRGINIA,
County of Marshall } ss:

Phillip D. Whipkey and Dale E. Yeater being first duly sworn according to law depose and say that they are experienced in the work of plugging and filling oil and gas wells and were employed by The Manufacturers Light & Heat Co. well operator, and participated in the work of plugging and filling the above well, that said work was commenced on the 23rd day of December, 1964, and that the well was plugged and filled in the following manner:

BAND OR ZONE RECORD FORMATION	FILLING MATERIAL	Casing BIZE & KIND	CASING CSG PULLED	CASING CSG LEFT IN
3034'	Total Depth	10-3/4"	0	135'
3034' to 2772'	Aquagel	8-5/8"	0	1247'
2772' to 2712'	Cement	7"	0	1994'
2712' to 2347'	Aquagel	4-1/2"	2056'	218'
2347' to 2264'	Cement			
	Note: All plugging material run by Well Service Inc., using 2-3/8" Tubing.			
COAL SEAMS		DESCRIPTION OF MONUMENT		
(NAME) Pittsburgh	(840' to 848')	Partial Plug Only		
(NAME)				
(NAME)				
(NAME)				

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Dept. of Mines
APR 1965

and that the work of plugging and filling said well was completed on the 15th day of March, 1965.

And further deponents saith not.

Phillip D. Whipkey
Dale E. Yeater

Sworn to and subscribed before me this 30th day of March, 1965.

Wilma L. Guthrie
Notary Public.

My commission expires:
July 7, 1970

Permit No. MARS-A-PP 474

4705100777P

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

Rotary ☐
Spudder ☐
Cable Tools ☒
Storage ☐

Quadrangle _____

Permit No. MARS-474A-PP

WELL RECORD

Oil or Gas Well Storage (KIND)

Company The Manufacturers Light & Heat Company
Address 808 Union Trust Bldg., Pgh. 19, Penna.
Farm Alfred Turner Acres 140
Location (waters) Big Run
Well No. 2604 Elev. 1159.00'
District Liberty County Marshall
The surface of tract is owned in fee by John M. Straight
R D # 5 Address Cameron, W.Va.
Mineral rights are owned by Mary A. Turner Hrs.
(Herman Turner Agt.) Address Hundred, W.Va.
Drilling commenced December 23, 1964
Drilling completed March 15, 1965
Date Shot N/A From N/A To N/A
With Well not Shot
Open Flow 0 /10ths Water in 1/4" Inch
/10ths Merc. in Inch
Volume None Cu. Ft.
Rock Pressure 50 lbs. 48 hrs.
Oil None bbls., 1st 24 hrs.
WELL ACIDIZED Not Acidized
WELL FRACTURED Not Fractured

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size OD			
16			
13			Kind of Packer Hook Wall
10 10-3/4"		135'	Size of 4-1/2"X7"
8¼ 8-5/8"		1247'	w/4"X2" Swage
6⅝ 7"		1994'	Depth set 2016'
5 3/16			
3 4-1/2"		218'	Perf. top 2060'
2 2-3/8"	2016'	2016'	Perf. bottom 2080'
Liners Used			Perf. top 2094'
			Perf. bottom 2104'
			2114-2126&2132-2142'

CASING CEMENTED ____ SIZE ____ No. Ft. ____ Date
No Casing or Tubing Cemented
COAL WAS ENCOUNTERED AT 840 FEET 00 INCHES
840 FEET 00 INCHES 848 FEET 00 INCHES
____ FEET ____ INCHES ____ FEET ____ INCHES

RESULT AFTER TREATMENT N/A
ROCK PRESSURE AFTER TREATMENT N/A
Fresh Water N/A Feet N/A Salt Water N/A Feet N/A

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Pittsburgh Coal			840'	848'			
Murphy Sand			1005'	1025'			
Little Dunkard			1205'	1230'			
1st Salt Sand			1496'	1544'			
2nd Salt Sand			1622'	1635'			
3rd Salt Sand			1740'	1764'			
Maxton Sand			1834'	1893'			
Big Lime			1960'	1992'			
Big Injun Sand			1994'	2264'			38' of Shale, 2148' to 2170', Original Gas Pay 2134 to 2136', produced from year of 1921 to 1929. Drilled Deeper in 1929. This Well in not in communication with main Storage Field.
Total Depth				2284'			

Note: The Original 10-3/4", 8-5/8" and 7" Casings were not disturbed, not cemented. 2-3/8"X 7" Hook Wall Packer with 4"X 2" Swage Nipple on top was set at 2016'. 218' of Original 4-1/2" Tubing left in hole, 2056 to 2274'. Original 4-1/2" Tubing perforated as follows: 2060-2080', 2094-2104', 2114-2126' and 2132-2142', perforated by Schlumberger Well Survey Corp.. Well plugged back as follows: 3034-2772' Aquagel, 2772-2712' Cement, 2712-2347' Aquagel, 2347-2284' Cement.

(over)

atg

4705100777P

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

Quadrangle _____

Permit No. Mars-474-P

WELL RECORD

Oil or Gas Well Gas (KIND)

Company The Manufacturers Light and Heat Co.
Address 800 Union Trust Building, Pittsburgh, Pennsylvania 15219
Farm Alfred Turner Heirs Acres 140
Location (waters) _____
Well No. 2604 Elev. 1159'
District Liberty County Marshall
The surface of tract is owned in fee by Herman Turner,
Atty.-in-Fact Address Box 68, Hundred, W. Va.
Mineral rights are owned by _____
Address _____
Drilling commenced March 21, 1929
Drilling completed April 9, 1929
Date Shot _____ From _____ To _____
With _____
Open Flow /10ths Water in _____ Inch
_____ /10ths Merc. in _____ Inch
Volume _____ Cu. Ft.
Rock Pressure 300 lbs. _____ hrs.
Oil _____ bbls., 1st 24 hrs.
Fresh water _____ feet _____ feet
Salt water _____ feet _____ feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16			Kind of Packer
13			
10			Size of
8¼			
6⅝			Depth set
5 3/16	2263'4"	2263'4"	
3			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED _____ SIZE _____ No. Ft. _____ Date

COAL WAS ENCOUNTERED AT _____ FEET _____ INCHES
_____ FEET _____ INCHES _____ FEET _____ INCHES
_____ FEET _____ INCHES _____ FEET _____ INCHES

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
		THICKNESS					
Beginning at			2136				
Big Injun Sand		260	2044	2304		Little Gas 2124 - 2123 - 2130	
Slate and Shells		236	2304	2540			
Lime white hard		30	2580	2610			
Lime white hard		20	2700	2720			
Fifty-foot Sand white hard		25	2828	2853		Gas 2830 S.L. - 50/10" W. in 2" Opn.	
Slate & Shells white hard		40	2853	2895			
Slate - white soft		25	2930	2955			
Gordon Sand white hard		35	2895	2930			
Fourth Sand - white hard		6	2955	2961		Gas 2958 - Pay-22/10" W. in 4" Opn.	
Slate - white soft		73	2961	3034			
TOTAL DEPTH			3034				
Slate & Shells white		136	2304	2540			
Lime - white hard		20	2540	2560			
Slate & Shells - white		20	2560	2580			
Slate - white soft		10	2610	2620			
Lime - white hard		15	2620	2635			

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(Over)

47051007770

Form 109 IM 5-26 Pads 25

Company 2604

Division No. 6 — 248 Fourth Ave., Pittsburgh, Pa.

Record of Well No. 2604 on [illegible] Farm [illegible] Acres

[illegible] Field Liberty District Township Marshall County [illegible] State

Rig Commenced March [illegible] 192[illegible] Completed March [illegible], 1927

Drilling Commenced March [illegible] 192[illegible] Completed April [illegible], 1927

Cost per Foot [illegible] Contractor Edwin [illegible] Address Cameron, W. Va.

Drillers' Names Wm. Guthrie [illegible] C. Keffer & H. Durst

BOILER			ENGINE			RIG			
H. P.	No.	Name of Maker	H. P.	No.	Name of Maker	New	Old	Height	Name of Builder

CONDUCTOR AND CASING USED IN DRILLING

Conductor	13 inch	10 inch	8¼ inch	6¾ inch	6¼ inch	5¾ inch	5⅛ inch	5 inch	4 inch		
							2263#				

CONDUCTOR AND CASING LEFT IN WELL

Conductor	13 inch	10 inch	8¼ inch	6¾ inch	6¼ inch	5¾ inch	5⅛ inch	5 inch	4 inch	3 inch	
							2263#				

OIL WELL — X GAS WELL

When Shot	Size of Torpedo	1st Day's Production	Tubing	Rods	Tanks	Size of Packer	Depth Set	Packed with	1st Minute Pressure	Rock Pressure
						5¾ x [illegible]	2124	5¾ [illegible]	10#	300#

FORMATION	Top	Bottom	Thickness	REMARKS
Beginning at [illegible]	[illegible]			
Big Lime [illegible]	2044	[illegible]	10	2 [illegible] Gas 2124 – 2128 2190
Slate [illegible]	2304	[illegible]	[illegible]	
Lime white hard	2580	[illegible]	[illegible]	
" "	2700	[illegible]	[illegible]	
Fifty foot Sand hard	2828	[illegible]	[illegible]	Gas 2570 S.I. – 5/10" W. in 2" Orf.
Slate & Shells white soft	2850	[illegible]	20	
Gordon Sand white hard	2895	[illegible]	30	
Slate white soft	[illegible]	[illegible]	5	
Fourth Sand white hard	2955	[illegible]	[illegible]	Gas 2958 – Dry 3/10" W. in 4" Orf.
Slate white soft	2961	[illegible]	[illegible]	
Total Depth	[illegible]			

Total 11000 cu ft

Slate & Shells white	2304	2340	36
Lime white hard	2540	2560	20
Slate & shells white	2560	2580	20
Slate white soft	2610	2620	10
Lime white hard	2620	2630	10
Slate & Shells white hard	2630	2700	60
Slate & Shells white	2720	2760	40
Slate white soft	2810	2821	6

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Office of Oil and Gas
FEB 25 2021
WV Department of Environmental Protection

Examined above information as measured and found to be correct by [illegible] Contractor

Examined and approved by [illegible] Superintendent of Co.

NOTE.—The above blank must be filled out carefully by the Contractor, with a complete and accurate record of the Well, and accompany, when presented for payment the bill for drilling. All formations and known sands must be given by their proper name, with steel line measurements, and under the head of "Remarks" must be recorded in what sand and at what depth Oil, Gas or Water was found, the quantity of same, the quality of the sand, and thickness of pay.

Make no memoranda of boiler and engine if owned by contractor.

47051007770

Form 109 1M-7-17 Pads 25

The Manufacturers Light & Heat Company 2604

Division: Canonsburg — 245 Fourth Ave., Pittsburgh, Pa.

Record of Well No. 2604 on Alfred Turner Farm — Acres

Field Liberty — District Township Mar. County W Va. — State

Rig Commenced Oct 27 1920. Completed Oct 27 1920

Drilling Commenced Dec 5 1920. Completed Jan. 8 1921

Cost per foot 2.85 Contractor Paul M Marsh, Address Cameron W Va.

Drillers' Names C. W Helms R L Hughes.

BOILER			ENGINE			RIG			
H. P.	No.	Name of Maker	H. P.	No.	Name of Maker	New	Old	Height	Name of Builder

CONDUCTOR AND CASING USED IN DRILLING

Conductor	13 inch	10 inch	8¼ inch	6¾ inch	6¼ inch	5⅝ inch	5⅛ inch	5 inch	4 inch	
16		125	1247	2028						

CONDUCTOR AND CASING LEFT IN WELL

Conductor	13 inch	10 inch	8¼ inch	6¾ inch	6¼ inch	5⅝ inch	5⅛ inch	5 inch	4 inch	3 inch
			1247	2028						

OIL WELL

When Shot	Size of Torpedo	1st Day's Production	Tubing	Rods	Tanks

GAS WELL

Size of Packer	Depth Set	Packed with	1st Minutes Pressure	Rock Pressure

FORMATION	Top	Bottom	Thickness	REMARKS
Sand.	25	50	25	Hole full of water
5th Coal	870	879	9	
Little Dunkard white	1275	1315	40	
Big Dunkard white	1390	1405	15	
Gas Sand white sand	1461	1575	114	7 barrels water in 15 hrs
1st Salt Sand white	1710	1760	50	
2 salt sand white	1835	1885	50	
Maxton white sand	1910	1960	50	
Little Lime white hard	1987	1999	12	
Pencil Cave	1999	2003	4	
Big Lime white	2003	2044	41	
Big Injun white	2044			
Total Depth		2136		
Slate black	50	100	50	
Coal black	100	130	30	
Lime white hard	130	220	90	
Slate white	220	300	80	
Sand white hard	300	350	50	
Lime white hard	350	400	50	
Sand white hard	400	450	50	
Slate & Black SHOWS	450	600	150	
Red Rock SHOWS OF OIL	600	610	10	
Lime white hard Coming Lime	610	700	90	
Sand white hard	700	750	50	
Slate black	750	820	70	
Lime white hard	820	870	50	
Red Rock	870	879	9	
Slate & Shells	879	1275	396	
Little Dunkard white hard	1275	1315	40	
Slate & Shells	1315	1390	75	
Lime white hard	1390	1405	15	
Slate & Shells	1405	1461	56	
Gas Sand white hard	1461	1575	114	
Slate & Shells	1575	1710	135	
Slate & Shells	1710	1835	125	
Slate & Shells	1835	1885	50	
Slate black	1885	1960	75	
Lime white hard	1960	1987	27	
Slate & Shells	1987	2136	149	
Red Rock	2136			

Examined above information and measurements and found to be correct by Paul M. Marsh Contractor.

Examined and approved by M. J. Cunningham Superintendent of Co.

NOTE—The above blank must be filled out carefully by the Contractor, with a complete and accurate record of the Well, and accompany first statement for payment the bill for drilling.

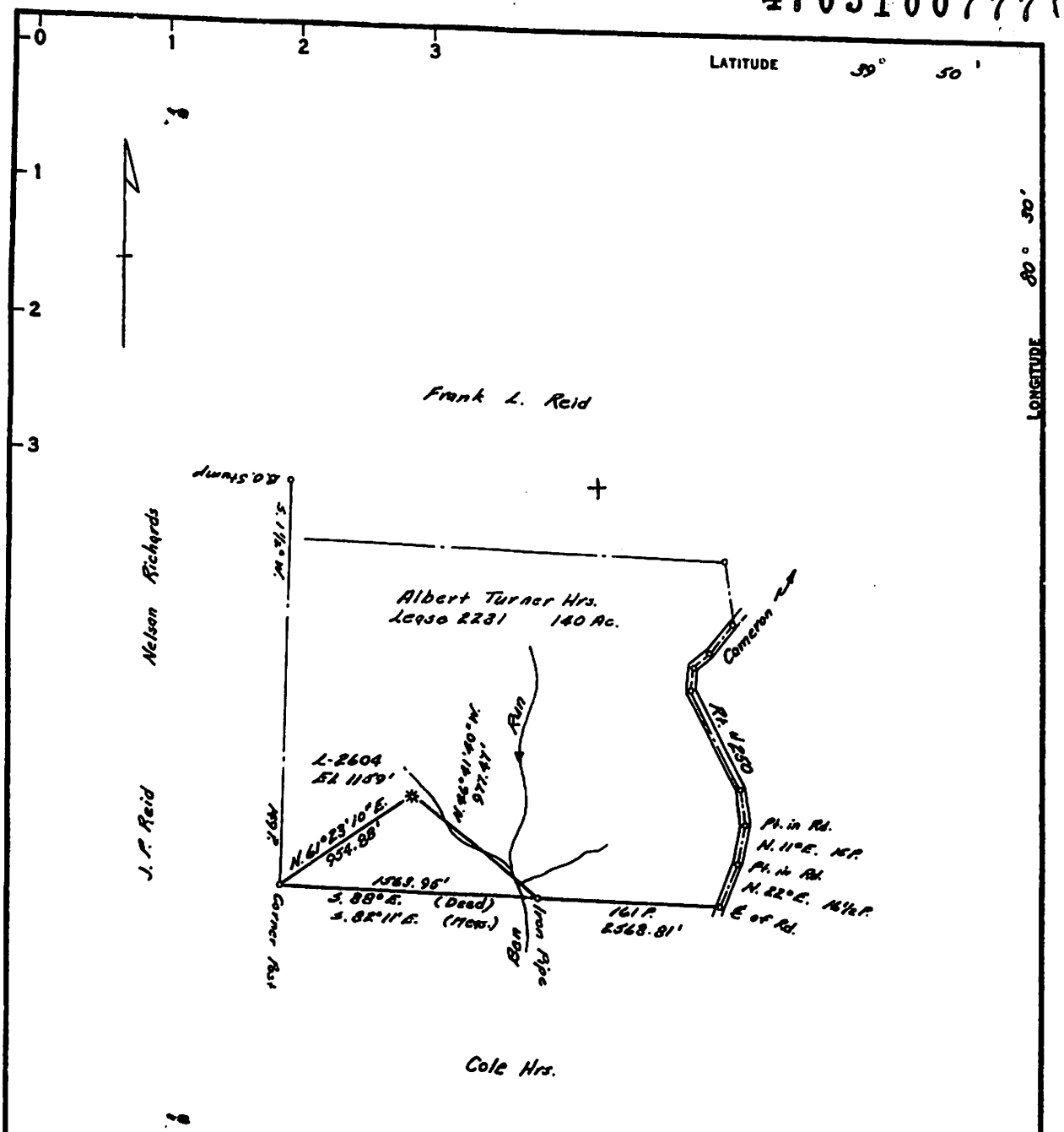
All formations and known sands must be given by their proper name, with steel line measurements, and under the head of "Remarks" must be recorded in what sand and at what depth Oil, Gas or Water was found, the quantity of same, the quality of the sand, and thickness of pay.

Make no memoranda of boiler and engine if owned by contractor.

A. W. McLOY CO. PRINT. PITTSBURGH

RECEIVED Office of Oil and Gas FEB 25 2021 WV Department of Environmental Protection

4705100777 P



Partially Plugged

COAL OWNED BY Mary A. Turner Hr. 3/4 - M. A. Hanna Co 1/4

- ☐ NEW LOCATION
- ☐ RECONDITION
- ☐ DRILL DEEPER
- ☐ ABANDONMENT

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Minimum degree of accuracy is one part in 2500

Signed Robert M. Heil (J.F.)

COMPANY The Manufacturers Light And Heat Company
ADDRESS 800 Union Trust Bldg. Pittsburgh, Pa.
FARM Albert Turner Hrs.
MAP 0-25/29 ACRES 140 LEASE NO 2231
WELL (FARM) NO. 1 SERIAL NO. L2604
ELEVATION (SPIRIT LEVEL) 1159'
QUADRANGLE Cameron 15'
COUNTY Marshall DISTRICT Liberty
POINT OF PROVEN ELEVATION Intersection of Lane and Rt. 250

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION
CHARLESTON

WELL LOCATION MAP

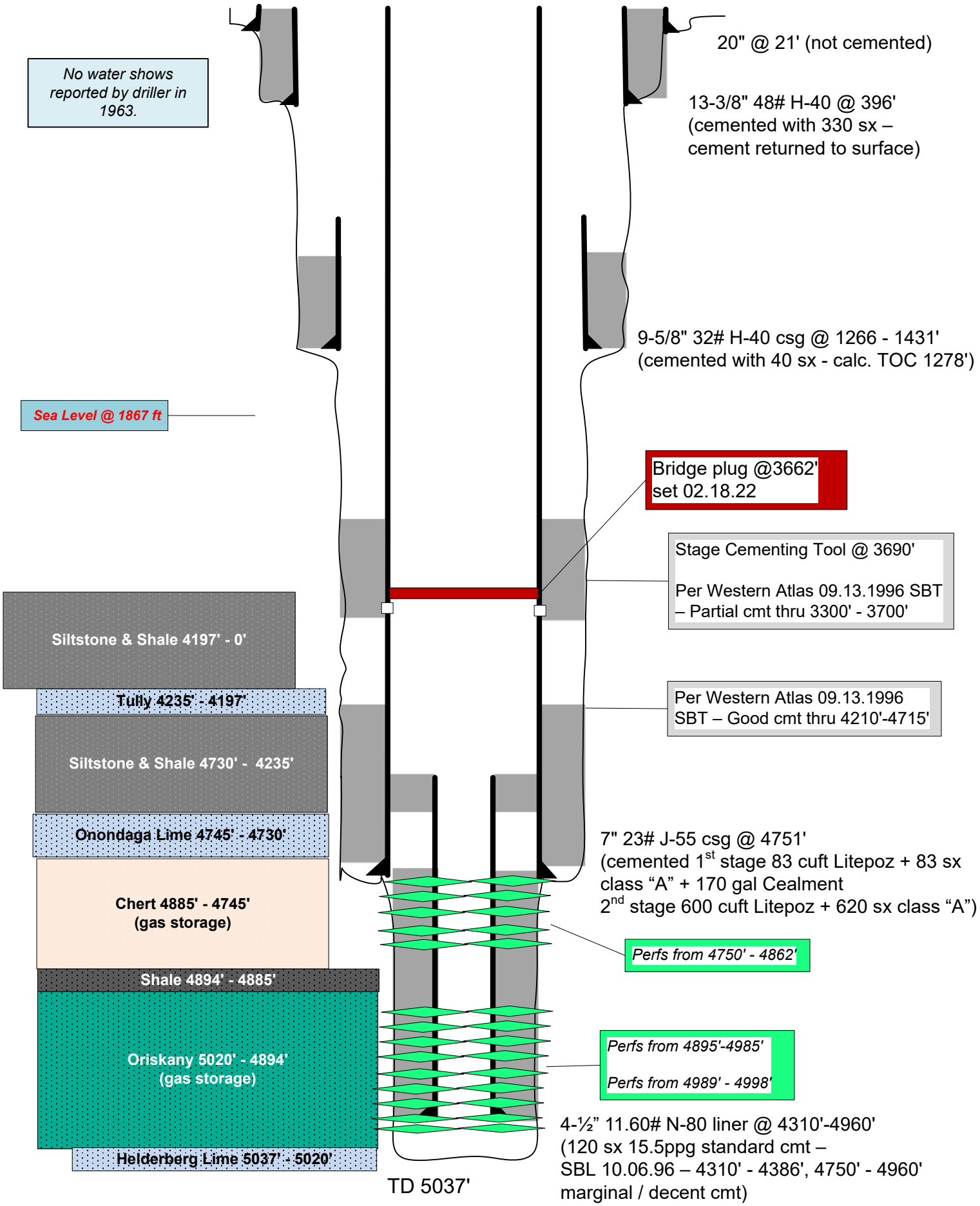
FILE NO. MRRS-474-A
Reconditioned For Storage

+ DENOTES LOCATION OF WELL ON ((ED STATES TOPOGRAPHIC

~ not to scale ~

Terra Alta 7417

(02.25.2021)



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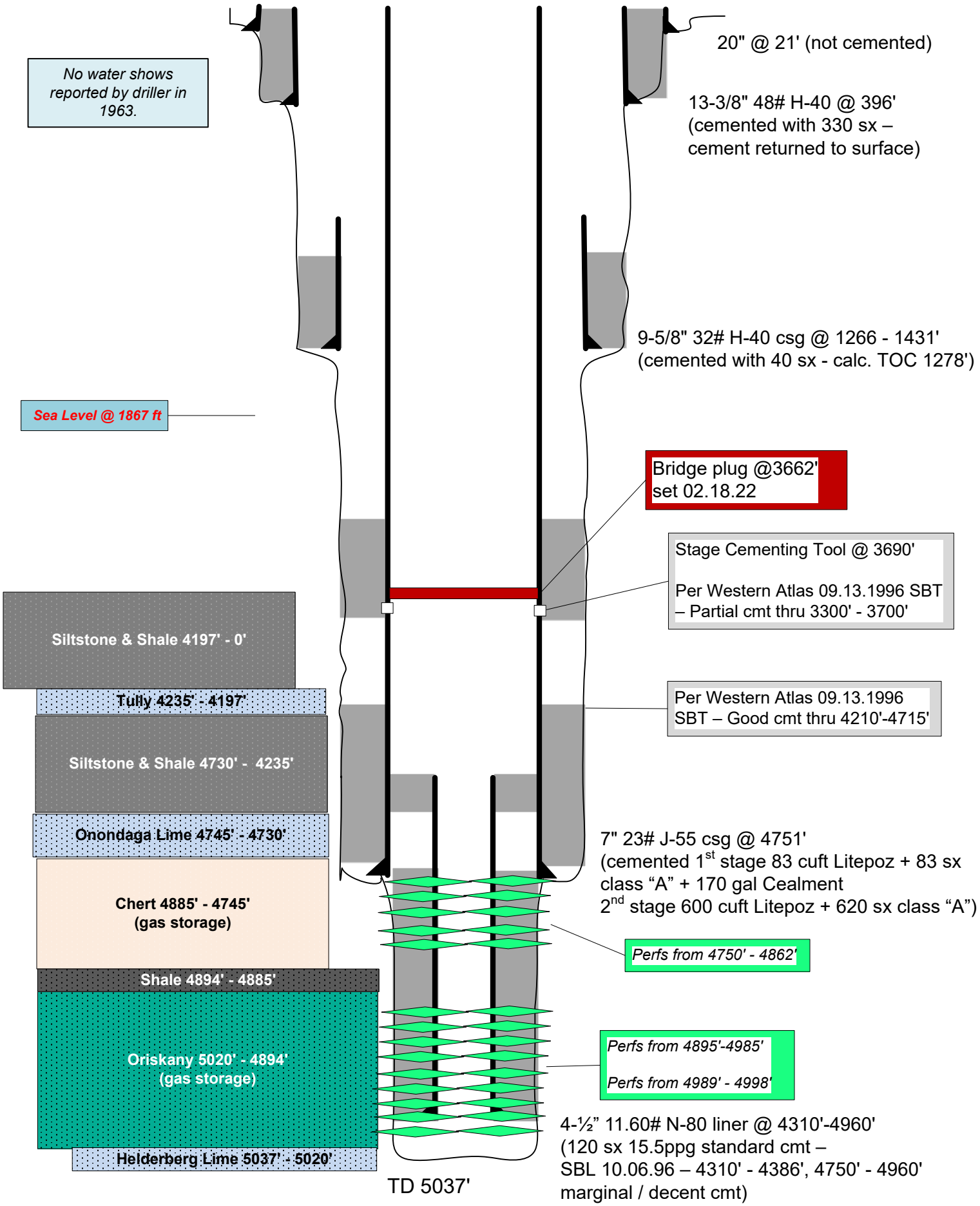
Terra Alta 7417

(02.25.2021)

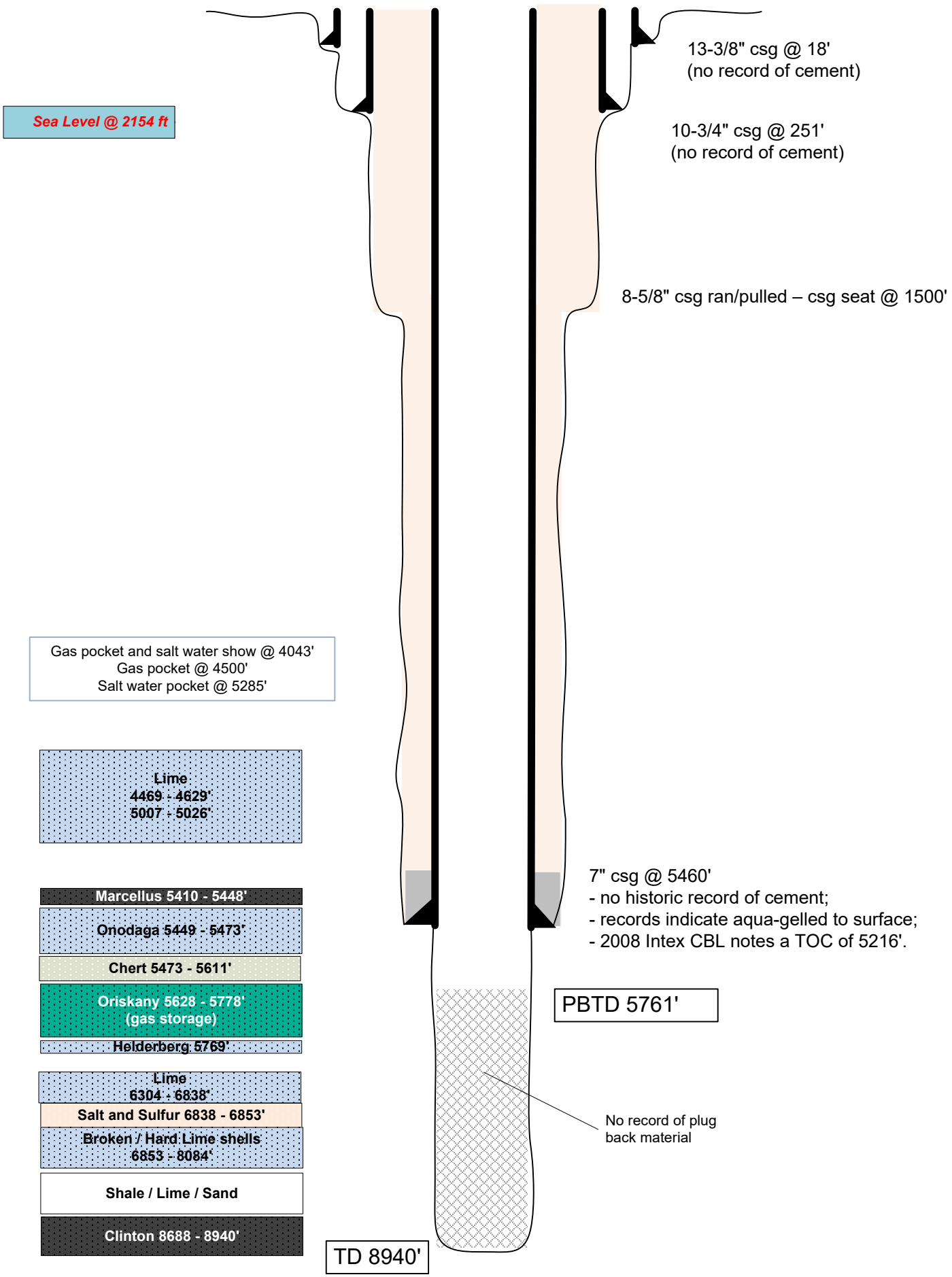


~ not to scale ~

TERRA ALTA 7370

Prior to P&A

(as of 01/19/2022)



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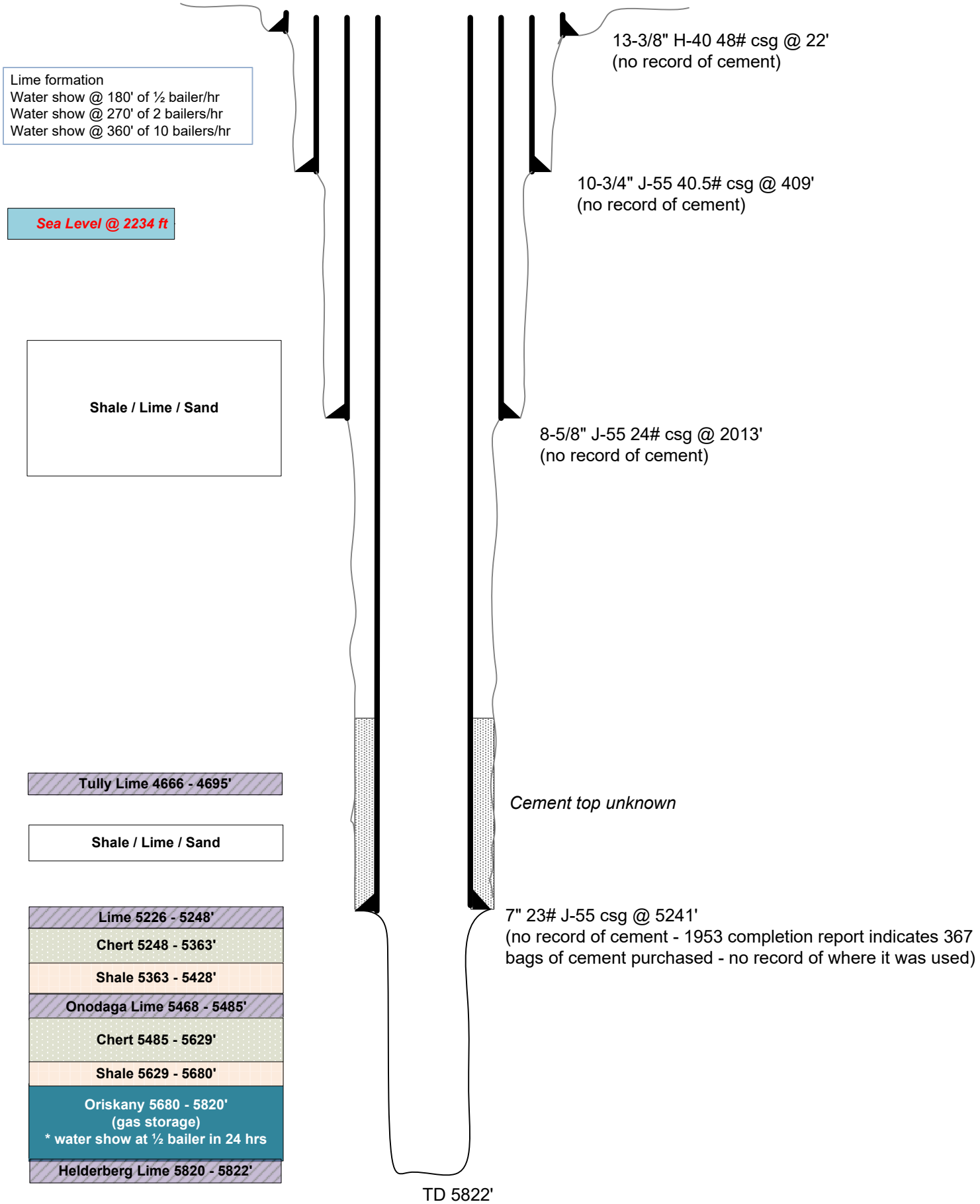
TERRA ALTA 7377
Prior to P&A
(as of 01/19/2022)



Water Management Plan

Action: Modified **Effective Date:** 3/18/2022
Operator: SWN Production Company, LLC
WMP ID: 1833
Plan Type: Well Pad
Facility Name: Timmy Minch OHI Well Pad
County: Ohio
Lat: 40.085422
Long: -80.646382

APPROVED
By Dawn Newell at 2:40 pm, 3/18/22

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supersedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

Api	Wellname
047-069-00092	Timmy Minch OHI 1H - 833624
047-069-00153	Timmy Minch OHI 206H - 8360725
047-069-00154	Timmy Minch OHI 6H - 836070
047-069-00155	Timmy Minch OHI 3H - 836500
047-069-00221	Timmy Minch OHI 201H
047-069-00266	Timmy Minch OHI 401H
047-069-00268	Timmy Minch OHI 6H
047-069-00277	Timmy Minch OHI 206H
047-069-00335	Timmy Minch OHI 8H
047-069-00336	Timmy Minch OHI 10H
047-069-00337	Timmy Minch OHI 210H

The following water consumption estimates (in gallons) have been reported for this plan.

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	24,466,680
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activities:	210,000
Total for Well Pad:	25,516,680

Primary Sources

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and enforceable as such.

For any source identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this Water Management Plan.

- Big Wheeling Creek @ Wheeling Staging Area

Type:	Stream/River
County:	Ohio
Owner:	Fulton Storage, LLC
Intake Latitude:	40.077019
Intake Longitude:	-80.713866
HUC-8 Code:	5030106
Drainage Area (sq	296.04

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	43.57
Minimum Passby (cfs):	40.03

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Booths Creek @ Reliance Minerals

Type:	Stream/River
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Intake Latitude:	39.530405
Intake Longitude:	-79.978079
HUC-8 Code:	5020003
Drainage Area (sq miles):	1.79
Regulated Stream:	NO
PWS Within 1 Mile:	YES Morgantown Utility Board

Gauged Stream:	NO
Ref Gauge ID:	3062500
Ref Gauge Name:	DECKERS CREEK AT MORGANTOWN, WV
Minimum Gauge Reading (cfs):	18.65
Minimum Passby (cfs):	.48
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Buffalo Creek @ Bethany VFD Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Bethany Pike Volunteer Fire Department
Intake Latitude:	40.253422
Intake Longitude:	-80.600319
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	67.66
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Buffalo Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.19386
Intake Longitude:	-80.525796
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	54.63
Minimum Passby (cfs):	43.52
Endangered Species:	NO

Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	3200

Comments:

- Buffalo Creek @ Forney

Type:	Stream/River
County:	Brooke
Owner:	Forney & Sons Holding Company, LLC
Intake Latitude:	40.193453
Intake Longitude:	-80.52175
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Fuchs

Type:	Stream/River
County:	Brooke
Owner:	Beverly Fuchs
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:

- Buffalo Creek @ Greathouse Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Linda Greathouse
Intake Latitude:	40.20895
Intake Longitude:	-80.60105
HUC-8 Code:	5030106
Drainage Area (sq miles):	138.56
Regulated Stream:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	60.42
Minimum Passby (cfs):	54.51
Endangered Species:	NO
Mussel Stream:	YES

PWS Within 1 Mile:	NO

Maximum Pump Rate (gpm):	3300

Comments:

- Buffalo Creek @ Labelle Farms

Type:	Stream/River
County:	Brooke
Owner:	Steve Paul
Intake Latitude:	40.204444
Intake Longitude:	-80.598645
HUC-8 Code:	5030106
Drainage Area (sq miles):	136.79
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	59.2
Minimum Passby (cfs):	53.8
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Buffalo Creek @ WVDOH

Type:	Stream/River
County:	Brooke
Owner:	West Virginia Division of Highways
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Buffalo Creek @ Worthley Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Kimberly C. Worthley
Intake Latitude:	40.210978
Intake Longitude:	-80.548779
HUC-8 Code:	5030106

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07

Drainage Area (sq miles):	113.49
Regulated Stream:	NO
PWS Within 1 Mile:	YES Hammond PSD

Minimum Passby (cfs):	44.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Zatta

Type:	Stream/River
County:	Brooke
Owner:	Edward Zatta
Intake Latitude:	40.253588
Intake Longitude:	-80.600254
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	66.37
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Cross Creek @ Bullock Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Isabelle Bullock
Intake Latitude:	40.30735
Intake Longitude:	-80.569317
HUC-8 Code:	5030101
Drainage Area (sq miles):	74.66
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	19.32
Minimum Passby (cfs):	20.99
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Cross Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.300536
Intake Longitude:	-80.542229
HUC-8 Code:	5030101
Drainage Area (sq	68.58

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	22.44
Minimum Passby (cfs):	22.44

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Cross Creek @ Norfolk and Western Railway

Type:	Stream/River
County:	Brooke
Owner:	Wheeling & Lake Erie Railway Company
Intake Latitude:	40.30802
Intake Longitude:	-80.599193
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Cross Creek @ Palizzi

Type:	Stream/River
County:	Brooke
Owner:	Campbell Palizzi
Intake Latitude:	40.302427
Intake Longitude:	-80.582753
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	23.11
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Fish Creek @ Gribben

Type:	Stream/River
County:	Marshall
Owner:	Revocable Living Trust

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT

	of M. Peggy Gribben
Intake Latitude:	39.753271
Intake Longitude:	-80.597913
HUC-8 Code:	5030106
Drainage Area (sq miles):	141.61
Regulated Stream:	NO
PWS Within 1 Mile:	NO

	ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	23.94
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Fish Creek @ Guzek

Type:	Stream/River
County:	Marshall
Owner:	Walter A. Guzek
Intake Latitude:	39.753021
Intake Longitude:	-80.613941
HUC-8 Code:	5030106
Drainage Area (sq miles):	144.57
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	24.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Little Wheeling Creek @ Edge Withdrawal Site

Type:	Stream/River
County:	Ohio
Owner:	Alice Mae Edge
Intake Latitude:	40.098
Intake Longitude:	-80.5558
HUC-8 Code:	5030106
Drainage Area (sq miles):	4.26
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Little Wheeling Creek @ Main Street Bank

Type:	Stream/River
County:	Ohio
Owner:	Main Street Bank
Intake Latitude:	40.064076
Intake Longitude:	-80.614406
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	23
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Little Wheeling Creek @ Rt. 40 Staging Area

Type:	Stream/River
County:	Ohio
Owner:	JDS Investments, LLC
Intake Latitude:	40.078324
Intake Longitude:	-80.591145
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	64.8
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Gribben

Type:	Stream/River
County:	Ohio
Owner:	Lawrence Kevin Gribber
Intake Latitude:	40.036777
Intake Longitude:	-80.598008
HUC-8 Code:	5030106
Drainage Area (sq miles):	30.81
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	6.26
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Supler

Type:	Stream/River

Gauged Stream:	NO

County:	Ohio
Owner:	Gregory and Peggy Supler
Intake Latitude:	40.04409
Intake Longitude:	-80.55348
HUC-8 Code:	5030106
Drainage Area (sq miles):	20.54
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	62.57
Minimum Passby (cfs):	4.17
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Ohio River @ Extraction B Panhandle

Type:	Stream/River
County:	Brooke
Owner:	SWN Production Company, LLC
Intake Latitude:	40.233469
Intake Longitude:	-80.654359
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4375

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Proctor Peacemaker

Type:	Stream/River
County:	Wetzel
Owner:	SWN Production Company, LLC
Intake Latitude:	39.714299
Intake Longitude:	-80.825862
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	6000

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Paw Paw Creek @ Horizon Ventures

Type:	Stream/River
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Intake Latitude:	39.552426
Intake Longitude:	-80.166833
HUC-8 Code:	5020003
Drainage Area (sq miles):	28.34
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	26.96
Minimum Passby (cfs):	4.57
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Short Creek @ Cain

Type:	Stream/River
County:	Ohio
Owner:	Susan L. Cain
Intake Latitude:	40.155061
Intake Longitude:	-80.651431
HUC-8 Code:	5030106
Drainage Area (sq miles):	16.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	64.49
Minimum Passby (cfs):	7.68
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	3360

Comments:

- WV Fork Fish Creek @ Derby

Type:	Stream/River
County:	Wetzel
Owner:	Steven Derby
Intake Latitude:	39.709329
Intake Longitude:	-80.536079
HUC-8 Code:	5030106
Drainage Area (sq miles):	48.62
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	52.24
Minimum Passby (cfs):	8.21
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- WV Fork Fish Creek @ Francis

Type:	Stream/River
County:	Marshall
Owner:	Loretta J. Francis
Intake Latitude:	39.733295
Intake Longitude:	-80.579415
HUC-8 Code:	5030106
Drainage Area (sq miles):	86.51
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	63.69
Minimum Passby (cfs):	17.55
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:

- WV Fork of Fish Creek @ Van Scyoc Withdrawal Site

Type:	Stream/River
County:	Wetzel
Owner:	Israel D Van Scyoc
Intake Latitude:	39.6908
Intake Longitude:	-80.4762
HUC-8 Code:	5030106
Drainage Area (sq miles):	21.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	5.45
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Wheeling Creek @ Iskcon

Type:	Stream/River
County:	Marshall
Owner:	Iskcon New Vrindaban, Inc.
Intake Latitude:	39.967973
Intake Longitude:	-80.599241
HUC-8 Code:	5030106
Drainage Area (sq miles):	189.6
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Wheeling Creek @ Schafer

Type:	Stream/River
County:	Marshall
Owner:	Betty Jane Schafer
Intake Latitude:	39.99257
Intake Longitude:	-80.634912
HUC-8 Code:	5030106
Drainage Area (sq miles):	203.38
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.7
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Wheeling Creek @ Sligar

Type:	Stream/River
County:	Marshall
Owner:	Terry Sligar
Intake Latitude:	40.013185
Intake Longitude:	-80.652863
HUC-8 Code:	5030106
Drainage Area (sq miles):	211.8
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	28.64
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or Wheeling Creek @ Iskcon site.

- Whiteday Creek @ Sorine Withdrawal Site

Type:	Stream/River
County:	Marion
Owner:	Andrew Sorine, Jr.
Intake Latitude:	39.472311
Intake Longitude:	-79.977123
HUC-8 Code:	5020003
Drainage Area (sq miles):	12.29
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	20.25
Minimum Passby (cfs):	2.29
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Adrian Public Service District

Type:	Purchased Water
County:	Upshur
Owner:	Adrian Public Service District
Intake Latitude:	38.9775
Intake Longitude:	-80.22083
HUC-8 Code:	5020001
Drainage Area (sq miles):	197.33
Regulated Stream:	YES
PWS Within 1 Mile:	YES City of Buckhannon Water Plant

Gauged Stream:	YES
Ref Gauge ID:	3054500
Ref Gauge Name:	TYGART VALLEY RIVER AT PHILIPPI, WV
Minimum Gauge Reading (cfs):	155.85
Minimum Passby (cfs):	75.51
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:

- American Petroleum Partners (Wheeling Creek @ Wilson)

Type:	Purchased Water
County:	Marshall
Owner:	American Petroleum Partners, LLC
Intake Latitude:	39.975882
Intake Longitude:	-80.62967
HUC-8 Code:	5030106
Drainage Area (sq miles):	192.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	26.09
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- Covestro, LLC

Type:	Purchased Water
County:	Marshall
Owner:	Covestro, LLC
Intake Latitude:	39.7218
Intake Longitude:	-80.830231
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate	

	PSD	(gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Elite Gasfield Services

Type:	Purchased Water
County:	Brooke
Owner:	Elite Gasfield Services
Intake Latitude:	40.32667
Intake Longitude:	-80.59861
HUC-8 Code:	5030101
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES City of Follansbee

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Grandview-Doolin PSD

Type:	Purchased Water
County:	Wetzel
Owner:	Grandview-Doolin Public Service District
Intake Latitude:	39.71361
Intake Longitude:	-80.82583
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Marshall County Public Service District 3

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #3

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock &

Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

	Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Tap Location is: (39.906400, -80.586200)

- Marshall County Public Service District 4

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #4
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Ohio County PSD

Type:	Purchased Water
County:	Ohio
Owner:	Ohio county PSD
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before

purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ 4K Industrial Park

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Intake Latitude:	40.098805
Intake Longitude:	-80.711328
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ J&R Excavating

Type:	Purchased Water
County:	Marshall
Owner:	J&R Excavating
Intake Latitude:	39.998509
Intake Longitude:	-80.737336
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Oasis Transport Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Oasis Transport, LLC
Intake Latitude:	40.331551
Intake Longitude:	-80.601034
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	

Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Range Tap @ Corbin Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Range Resources Corp.
Intake Latitude:	40.229983
Intake Longitude:	-80.521067
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- The Village of Valley Grove

Type:	Purchased Water
County:	Ohio
Owner:	The Village of Valley Grove
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Valley Falls PSD

Type:	Purchased Water

Gauged Stream:	YES

County:	Marion
Owner:	Valley Falls PSD
Intake Latitude:	39.45889
Intake Longitude:	-80.15583
HUC-8 Code:	5020001
Drainage Area (sq miles):	1367.05
Regulated Stream:	YES Tygart Valley Dam
PWS Within 1 Mile:	YES City of Fairmont

Ref Gauge ID:	3057000
Ref Gauge Name:	TYGART VALLEY RIVER AT COLFAX, WV
Minimum Gauge Reading (cfs):	397.39
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek # 2 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.949577
Intake Longitude:	-80.531255
HUC-8 Code:	5030106
Drainage Area (sq miles):	152.4
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.24
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #1 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.95205
Intake Longitude:	-80.56189
HUC-8 Code:	5030106
Drainage Area (sq miles):	156.06
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.63
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Water Department

Type:	Purchased Water
County:	Ohio
Owner:	Wheeling Water

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station:

	Department
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

	Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Shoemaker Groundwater Wells @ HG Energy

Type:	Ground Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	40.0222
Intake Longitude:	-80.733888
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	800

Comments:
This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals.
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Secondary Sources

For each proposed secondary water source identified in your water management plan (i.e. groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow and quality-tested by the operator at the request of the drinking well owner prior to the operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for

current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

- The use of recycled frac water is always encouraged.

- 4K Industrial Park, LLC

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Source Latitude:	40.100395
Source Longitude:	-80.71269
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Ballato Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Nick Ballato and Christopher Ballato
Source Latitude:	40.308611
Source Longitude:	-80.565028
Reference WMP:	1877

Comments:

- Barry Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Barry Greathouse
Source Latitude:	40.18831
Source Longitude:	-80.63714
Reference WMP:	1869

Comments:

- Columbia Gas Transmission (TCO Elson) FWI

Type:	Purchased Water
County:	Marshall
Owner:	Columbia Gas Transmission, LLC.
Source Latitude:	39.75398
Source Longitude:	-80.613604
Reference WMP:	547

Comments:

- Corbin Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Margaret Corbin
Source Latitude:	40.233122
Source Longitude:	-80.524025
Reference WMP:	1870

Comments:

- Durig A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	39.715905
Source Longitude:	-80.636785
Reference WMP:	1862

Comments:

- Durig B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	38.8022
Source Longitude:	-80.638491
Reference WMP:	1863

Comments:

- Elite Gasfield Services, Midland Borough

Type:	Purchased Water
County:	Beaver, PA
Owner:	Elite Gasfield Services
Source Latitude:	40.644598
Source Longitude:	-80.469382
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Elmer Freshwater Impoundment

Type:	Centralized Freshwater

	Impoundment
County:	Upshur
Owner:	Charles and Thomas Elmer
Source Latitude:	38.831351
Source Longitude:	-80.276326
Reference WMP:	1847

Comments:

- Equitrans Water Services, LLC Cook Impoundment

Type:	Purchased Water
County:	Greene, PA
Owner:	Equitrans Water Services, LLC
Source Latitude:	39.817197
Source Longitude:	-80.477956
Reference WMP:	

Comments:
PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.

- Farmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Clarence Farmer
Source Latitude:	40.146183
Source Longitude:	-80.573857
Reference WMP:	1871

Comments:

- Ferrell Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Kevin Ferrell
Source Latitude:	40.04445
Source Longitude:	-80.53023
Reference WMP:	1874

Comments:

- Grant Town Water

Type:	Purchased Water
County:	Marion

Owner:	Town of Grant Town
Source Latitude:	39.559407
Source Longitude:	-80.172893
Reference WMP:	

Comments:
@ Horizon Ventures Withdrawal Location

- Heartwood Forestland Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ritchie
Owner:	Wanda Bartlett
Source Latitude:	39.123961
Source Longitude:	-81.098573
Reference WMP:	1878

Comments:

- Helen Miller Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Helen J. Miller
Source Latitude:	40.085722
Source Longitude:	-80.623333
Reference WMP:	1059

Comments:

- Hickman Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Mark Hickman et al
Source Latitude:	40.041361
Source Longitude:	-80.548944
Reference WMP:	1875

Comments:

- Hieronimus #1 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.811
Source Longitude:	-80.5212

Reference WMP:	1856

Comments:

- Hieronimus #2 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8149
Source Longitude:	-80.5233
Reference WMP:	1857

Comments:

- Hieronimus #3 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8162
Source Longitude:	-80.5266
Reference WMP:	1761

Comments:

- Hieronimus #4 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8198
Source Longitude:	-80.5295
Reference WMP:	1858

Comments:

- Hupp 1 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Hupp
Source Latitude:	40.175058
Source Longitude:	-80.567622
Reference WMP:	1873

Comments:

- Hupp 2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Wylie Hupp
Source Latitude:	40.175069
Source Longitude:	-80.578206
Reference WMP:	1058

Comments:

- Hydro Recovery, LP

Type:	Purchased Water
County:	Washington, PA
Owner:	Hydro Recovery, LP - Burgettstown
Source Latitude:	40.419251
Source Longitude:	-80.422684
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Kelley #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Margaret Sue Kelley
Source Latitude:	39.681388
Source Longitude:	-80.701113
Reference WMP:	1865

Comments:

- Kestner Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Gary Kestner
Source Latitude:	40.147904
Source Longitude:	-80.539568
Reference WMP:	1872

Comments:

- Linda Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke

Owner:	Linda Greathouse
Source Latitude:	40.205416
Source Longitude:	-80.608805
Reference WMP:	1876

Comments:

- Lipps Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Ralph and Opal Lipps
Source Latitude:	38.8446
Source Longitude:	-80.3413
Reference WMP:	1850

Comments:

- McGlumphy Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Steven M. McGlumphy
Source Latitude:	40.152588
Source Longitude:	-80.587667
Reference WMP:	1060

Comments:

- Messenger Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Chesapeake Energy
Source Latitude:	393674857
Source Longitude:	-80.689887
Reference WMP:	1859

Comments:

- Pennsylvania American Water

Type:	Purchased Water
County:	
Owner:	Pennsylvania American Water
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Raw Water Pond @ Horizon Ventures

Type:	Purchased Water
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Source Latitude:	39.5535
Source Longitude:	-80.16742
Reference WMP:	

Comments:

- Recycled Frac Water

Type:	Recycled Frac Water
County:	
Owner:	
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Treated and recycled flowback/produced water sources may include, but are not limited to this well pad.

- Reliance Minerals A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.521316
Source Longitude:	-79.973907
Reference WMP:	1868

Comments:

- Reliance Minerals B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.524571
Source Longitude:	-79.974529
Reference WMP:	1867

Comments:

- Robinson Fork @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy II Appalachia, LLC.
Source Latitude:	39.979222
Source Longitude:	-80.487472
Reference WMP:	

Comments:

- Ross #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Mike Ross
Source Latitude:	38.9839
Source Longitude:	-80.2628
Reference WMP:	1851

Comments:

- Stern Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Marshall
Owner:	Alton and Mary Stern
Source Latitude:	39.733943
Source Longitude:	-80.64695
Reference WMP:	1826

Comments:

- WFN Impoundment A @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy, LLC
Source Latitude:	39.991417
Source Longitude:	-80.488694
Reference WMP:	

Comments:

- WFN Impoundment B @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy
Source Latitude:	39.991917
Source Longitude:	-80.4965

Reference WMP:	

Comments:

- Washington Pike PSD @ Brook Hills Park

Type:	Purchased Water
County:	Brooke
Owner:	Washington Pike PSD
Source Latitude:	40.26632
Source Longitude:	-80.543592
Reference WMP:	

Comments:

- Worthley Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Kimberly Worthley
Source Latitude:	40.216869
Source Longitude:	-80.548592
Reference WMP:	1061

Comments:

West Virginia Department of Environmental Protection

601 57th Street SE

Charleston, WV

Pollution and Emergency Spills 1-800-642-3074

www.dep.wv.gov

Water Management Plan

Action: Modified **Effective Date:** 3/18/2022
Operator: SWN Production Company, LLC
WMP ID: 1833
Plan Type: Well Pad
Facility Name: Timmy Minch OHI Well Pad
County: Ohio
Lat: 40.085422
Long: -80.646382

APPROVED
By Dawn Newell at 2:40 pm, 3/18/22

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supersedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

Api	Wellname
047-069-00092	Timmy Minch OHI 1H - 833624
047-069-00153	Timmy Minch OHI 206H - 8360725
047-069-00154	Timmy Minch OHI 6H - 836070
047-069-00155	Timmy Minch OHI 3H - 836500
047-069-00221	Timmy Minch OHI 201H
047-069-00266	Timmy Minch OHI 401H
047-069-00268	Timmy Minch OHI 6H
047-069-00277	Timmy Minch OHI 206H
047-069-00335	Timmy Minch OHI 8H
047-069-00336	Timmy Minch OHI 10H
047-069-00337	Timmy Minch OHI 210H

The following water consumption estimates (in gallons) have been reported for this plan.

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	24,466,680
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activities:	210,000
Total for Well Pad:	25,516,680

Primary Sources

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and enforceable as such.

For any source identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this Water Management Plan.

- Big Wheeling Creek @ Wheeling Staging Area

Type:	Stream/River
County:	Ohio
Owner:	Fulton Storage, LLC
Intake Latitude:	40.077019
Intake Longitude:	-80.713866
HUC-8 Code:	5030106
Drainage Area (sq	296.04

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	43.57
Minimum Passby (cfs):	40.03

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Booths Creek @ Reliance Minerals

Type:	Stream/River
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Intake Latitude:	39.530405
Intake Longitude:	-79.978079
HUC-8 Code:	5020003
Drainage Area (sq miles):	1.79
Regulated Stream:	NO
PWS Within 1 Mile:	YES Morgantown Utility Board

Gauged Stream:	NO
Ref Gauge ID:	3062500
Ref Gauge Name:	DECKERS CREEK AT MORGANTOWN, WV
Minimum Gauge Reading (cfs):	18.65
Minimum Passby (cfs):	.48
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Buffalo Creek @ Bethany VFD Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Bethany Pike Volunteer Fire Department
Intake Latitude:	40.253422
Intake Longitude:	-80.600319
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	67.66
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Buffalo Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.19386
Intake Longitude:	-80.525796
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	54.63
Minimum Passby (cfs):	43.52
Endangered Species:	NO

Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	3200

Comments:

- Buffalo Creek @ Forney

Type:	Stream/River
County:	Brooke
Owner:	Forney & Sons Holding Company, LLC
Intake Latitude:	40.193453
Intake Longitude:	-80.52175
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Fuchs

Type:	Stream/River
County:	Brooke
Owner:	Beverly Fuchs
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:

- Buffalo Creek @ Greathouse Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Linda Greathouse
Intake Latitude:	40.20895
Intake Longitude:	-80.60105
HUC-8 Code:	5030106
Drainage Area (sq miles):	138.56
Regulated Stream:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	60.42
Minimum Passby (cfs):	54.51
Endangered Species:	NO
Mussel Stream:	YES

PWS Within 1 Mile:	NO

Maximum Pump Rate (gpm):	3300

Comments:

- Buffalo Creek @ Labelle Farms

Type:	Stream/River
County:	Brooke
Owner:	Steve Paul
Intake Latitude:	40.204444
Intake Longitude:	-80.598645
HUC-8 Code:	5030106
Drainage Area (sq miles):	136.79
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	59.2
Minimum Passby (cfs):	53.8
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Buffalo Creek @ WVDOH

Type:	Stream/River
County:	Brooke
Owner:	West Virginia Division of Highways
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Buffalo Creek @ Worthley Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Kimberly C. Worthley
Intake Latitude:	40.210978
Intake Longitude:	-80.548779
HUC-8 Code:	5030106

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07

Drainage Area (sq miles):	113.49
Regulated Stream:	NO
PWS Within 1 Mile:	YES Hammond PSD

Minimum Passby (cfs):	44.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Zatta

Type:	Stream/River
County:	Brooke
Owner:	Edward Zatta
Intake Latitude:	40.253588
Intake Longitude:	-80.600254
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	66.37
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Cross Creek @ Bullock Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Isabelle Bullock
Intake Latitude:	40.30735
Intake Longitude:	-80.569317
HUC-8 Code:	5030101
Drainage Area (sq miles):	74.66
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	19.32
Minimum Passby (cfs):	20.99
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Cross Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.300536
Intake Longitude:	-80.542229
HUC-8 Code:	5030101
Drainage Area (sq	68.58

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	22.44
Minimum Passby (cfs):	22.44

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Cross Creek @ Norfolk and Western Railway

Type:	Stream/River
County:	Brooke
Owner:	Wheeling & Lake Erie Railway Company
Intake Latitude:	40.30802
Intake Longitude:	-80.599193
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Cross Creek @ Palizzi

Type:	Stream/River
County:	Brooke
Owner:	Campbell Palizzi
Intake Latitude:	40.302427
Intake Longitude:	-80.582753
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	23.11
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Fish Creek @ Gribben

Type:	Stream/River
County:	Marshall
Owner:	Revocable Living Trust

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT

	of M. Peggy Gribben
Intake Latitude:	39.753271
Intake Longitude:	-80.597913
HUC-8 Code:	5030106
Drainage Area (sq miles):	141.61
Regulated Stream:	NO
PWS Within 1 Mile:	NO

	ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	23.94
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Fish Creek @ Guzek

Type:	Stream/River
County:	Marshall
Owner:	Walter A. Guzek
Intake Latitude:	39.753021
Intake Longitude:	-80.613941
HUC-8 Code:	5030106
Drainage Area (sq miles):	144.57
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	24.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Little Wheeling Creek @ Edge Withdrawal Site

Type:	Stream/River
County:	Ohio
Owner:	Alice Mae Edge
Intake Latitude:	40.098
Intake Longitude:	-80.5558
HUC-8 Code:	5030106
Drainage Area (sq miles):	4.26
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Little Wheeling Creek @ Main Street Bank

Type:	Stream/River
County:	Ohio
Owner:	Main Street Bank
Intake Latitude:	40.064076
Intake Longitude:	-80.614406
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	23
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Little Wheeling Creek @ Rt. 40 Staging Area

Type:	Stream/River
County:	Ohio
Owner:	JDS Investments, LLC
Intake Latitude:	40.078324
Intake Longitude:	-80.591145
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	64.8
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Gribben

Type:	Stream/River
County:	Ohio
Owner:	Lawrence Kevin Gribber
Intake Latitude:	40.036777
Intake Longitude:	-80.598008
HUC-8 Code:	5030106
Drainage Area (sq miles):	30.81
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	6.26
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Supler

Type:	Stream/River

Gauged Stream:	NO

County:	Ohio
Owner:	Gregory and Peggy Supler
Intake Latitude:	40.04409
Intake Longitude:	-80.55348
HUC-8 Code:	5030106
Drainage Area (sq miles):	20.54
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	62.57
Minimum Passby (cfs):	4.17
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Ohio River @ Extraction B Panhandle

Type:	Stream/River
County:	Brooke
Owner:	SWN Production Company, LLC
Intake Latitude:	40.233469
Intake Longitude:	-80.654359
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4375

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Proctor Peacemaker

Type:	Stream/River
County:	Wetzel
Owner:	SWN Production Company, LLC
Intake Latitude:	39.714299
Intake Longitude:	-80.825862
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	6000

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Paw Paw Creek @ Horizon Ventures

Type:	Stream/River
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Intake Latitude:	39.552426
Intake Longitude:	-80.166833
HUC-8 Code:	5020003
Drainage Area (sq miles):	28.34
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	26.96
Minimum Passby (cfs):	4.57
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Short Creek @ Cain

Type:	Stream/River
County:	Ohio
Owner:	Susan L. Cain
Intake Latitude:	40.155061
Intake Longitude:	-80.651431
HUC-8 Code:	5030106
Drainage Area (sq miles):	16.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	64.49
Minimum Passby (cfs):	7.68
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	3360

Comments:

- WV Fork Fish Creek @ Derby

Type:	Stream/River
County:	Wetzel
Owner:	Steven Derby
Intake Latitude:	39.709329
Intake Longitude:	-80.536079
HUC-8 Code:	5030106
Drainage Area (sq miles):	48.62
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	52.24
Minimum Passby (cfs):	8.21
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- WV Fork Fish Creek @ Francis

Type:	Stream/River
County:	Marshall
Owner:	Loretta J. Francis
Intake Latitude:	39.733295
Intake Longitude:	-80.579415
HUC-8 Code:	5030106
Drainage Area (sq miles):	86.51
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	63.69
Minimum Passby (cfs):	17.55
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:

- WV Fork of Fish Creek @ Van Scyoc Withdrawal Site

Type:	Stream/River
County:	Wetzel
Owner:	Israel D Van Scyoc
Intake Latitude:	39.6908
Intake Longitude:	-80.4762
HUC-8 Code:	5030106
Drainage Area (sq miles):	21.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	5.45
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Wheeling Creek @ Iskcon

Type:	Stream/River
County:	Marshall
Owner:	Iskcon New Vrindaban, Inc.
Intake Latitude:	39.967973
Intake Longitude:	-80.599241
HUC-8 Code:	5030106
Drainage Area (sq miles):	189.6
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Wheeling Creek @ Schafer

Type:	Stream/River
County:	Marshall
Owner:	Betty Jane Schafer
Intake Latitude:	39.99257
Intake Longitude:	-80.634912
HUC-8 Code:	5030106
Drainage Area (sq miles):	203.38
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.7
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Wheeling Creek @ Sligar

Type:	Stream/River
County:	Marshall
Owner:	Terry Sligar
Intake Latitude:	40.013185
Intake Longitude:	-80.652863
HUC-8 Code:	5030106
Drainage Area (sq miles):	211.8
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	28.64
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or Wheeling Creek @ Iskcon site.

- Whiteday Creek @ Sorine Withdrawal Site

Type:	Stream/River
County:	Marion
Owner:	Andrew Sorine, Jr.
Intake Latitude:	39.472311
Intake Longitude:	-79.977123
HUC-8 Code:	5020003
Drainage Area (sq miles):	12.29
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	20.25
Minimum Passby (cfs):	2.29
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Adrian Public Service District

Type:	Purchased Water
County:	Upshur
Owner:	Adrian Public Service District
Intake Latitude:	38.9775
Intake Longitude:	-80.22083
HUC-8 Code:	5020001
Drainage Area (sq miles):	197.33
Regulated Stream:	YES
PWS Within 1 Mile:	YES City of Buckhannon Water Plant

Gauged Stream:	YES
Ref Gauge ID:	3054500
Ref Gauge Name:	TYGART VALLEY RIVER AT PHILIPPI, WV
Minimum Gauge Reading (cfs):	155.85
Minimum Passby (cfs):	75.51
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:

- American Petroleum Partners (Wheeling Creek @ Wilson)

Type:	Purchased Water
County:	Marshall
Owner:	American Petroleum Partners, LLC
Intake Latitude:	39.975882
Intake Longitude:	-80.62967
HUC-8 Code:	5030106
Drainage Area (sq miles):	192.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	26.09
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- Covestro, LLC

Type:	Purchased Water
County:	Marshall
Owner:	Covestro, LLC
Intake Latitude:	39.7218
Intake Longitude:	-80.830231
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate	

	PSD	(gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Elite Gasfield Services

Type:	Purchased Water
County:	Brooke
Owner:	Elite Gasfield Services
Intake Latitude:	40.32667
Intake Longitude:	-80.59861
HUC-8 Code:	5030101
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES City of Follansbee

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Grandview-Doolin PSD

Type:	Purchased Water
County:	Wetzel
Owner:	Grandview-Doolin Public Service District
Intake Latitude:	39.71361
Intake Longitude:	-80.82583
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Marshall County Public Service District 3

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #3

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock &

Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

	Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Tap Location is: (39.906400, -80.586200)

- Marshall County Public Service District 4

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #4
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Ohio County PSD

Type:	Purchased Water
County:	Ohio
Owner:	Ohio county PSD
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before

purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ 4K Industrial Park

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Intake Latitude:	40.098805
Intake Longitude:	-80.711328
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ J&R Excavating

Type:	Purchased Water
County:	Marshall
Owner:	J&R Excavating
Intake Latitude:	39.998509
Intake Longitude:	-80.737336
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Oasis Transport Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Oasis Transport, LLC
Intake Latitude:	40.331551
Intake Longitude:	-80.601034
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	

Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Range Tap @ Corbin Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Range Resources Corp.
Intake Latitude:	40.229983
Intake Longitude:	-80.521067
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- The Village of Valley Grove

Type:	Purchased Water
County:	Ohio
Owner:	The Village of Valley Grove
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Valley Falls PSD

Type:	Purchased Water

Gauged Stream:	YES

County:	Marion
Owner:	Valley Falls PSD
Intake Latitude:	39.45889
Intake Longitude:	-80.15583
HUC-8 Code:	5020001
Drainage Area (sq miles):	1367.05
Regulated Stream:	YES Tygart Valley Dam
PWS Within 1 Mile:	YES City of Fairmont

Ref Gauge ID:	3057000
Ref Gauge Name:	TYGART VALLEY RIVER AT COLFAX, WV
Minimum Gauge Reading (cfs):	397.39
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek # 2 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.949577
Intake Longitude:	-80.531255
HUC-8 Code:	5030106
Drainage Area (sq miles):	152.4
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.24
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #1 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.95205
Intake Longitude:	-80.56189
HUC-8 Code:	5030106
Drainage Area (sq miles):	156.06
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.63
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Water Department

Type:	Purchased Water
County:	Ohio
Owner:	Wheeling Water

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station:

	Department
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

	Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Shoemaker Groundwater Wells @ HG Energy

Type:	Ground Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	40.0222
Intake Longitude:	-80.733888
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	800

Comments:
This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals.
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Secondary Sources

For each proposed secondary water source identified in your water management plan (i.e. groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow and quality-tested by the operator at the request of the drinking well owner prior to the operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for

current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

- The use of recycled frac water is always encouraged.

- 4K Industrial Park, LLC

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Source Latitude:	40.100395
Source Longitude:	-80.71269
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Ballato Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Nick Ballato and Christopher Ballato
Source Latitude:	40.308611
Source Longitude:	-80.565028
Reference WMP:	1877

Comments:

- Barry Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Barry Greathouse
Source Latitude:	40.18831
Source Longitude:	-80.63714
Reference WMP:	1869

Comments:

- Columbia Gas Transmission (TCO Elson) FWI

Type:	Purchased Water
County:	Marshall
Owner:	Columbia Gas Transmission, LLC.
Source Latitude:	39.75398
Source Longitude:	-80.613604
Reference WMP:	547

Comments:

- Corbin Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Margaret Corbin
Source Latitude:	40.233122
Source Longitude:	-80.524025
Reference WMP:	1870

Comments:

- Durig A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	39.715905
Source Longitude:	-80.636785
Reference WMP:	1862

Comments:

- Durig B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	38.8022
Source Longitude:	-80.638491
Reference WMP:	1863

Comments:

- Elite Gasfield Services, Midland Borough

Type:	Purchased Water
County:	Beaver, PA
Owner:	Elite Gasfield Services
Source Latitude:	40.644598
Source Longitude:	-80.469382
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Elmer Freshwater Impoundment

Type:	Centralized Freshwater

	Impoundment
County:	Upshur
Owner:	Charles and Thomas Elmer
Source Latitude:	38.831351
Source Longitude:	-80.276326
Reference WMP:	1847

Comments:

- Equitrans Water Services, LLC Cook Impoundment

Type:	Purchased Water
County:	Greene, PA
Owner:	Equitrans Water Services, LLC
Source Latitude:	39.817197
Source Longitude:	-80.477956
Reference WMP:	

Comments:
PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.

- Farmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Clarence Farmer
Source Latitude:	40.146183
Source Longitude:	-80.573857
Reference WMP:	1871

Comments:

- Ferrell Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Kevin Ferrell
Source Latitude:	40.04445
Source Longitude:	-80.53023
Reference WMP:	1874

Comments:

- Grant Town Water

Type:	Purchased Water
County:	Marion

Owner:	Town of Grant Town
Source Latitude:	39.559407
Source Longitude:	-80.172893
Reference WMP:	

Comments:
@ Horizon Ventures Withdrawal Location

- Heartwood Forestland Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ritchie
Owner:	Wanda Bartlett
Source Latitude:	39.123961
Source Longitude:	-81.098573
Reference WMP:	1878

Comments:

- Helen Miller Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Helen J. Miller
Source Latitude:	40.085722
Source Longitude:	-80.623333
Reference WMP:	1059

Comments:

- Hickman Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Mark Hickman et al
Source Latitude:	40.041361
Source Longitude:	-80.548944
Reference WMP:	1875

Comments:

- Hieronimus #1 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.811
Source Longitude:	-80.5212

Reference WMP:	1856

Comments:

- Hieronimus #2 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8149
Source Longitude:	-80.5233
Reference WMP:	1857

Comments:

- Hieronimus #3 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8162
Source Longitude:	-80.5266
Reference WMP:	1761

Comments:

- Hieronimus #4 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8198
Source Longitude:	-80.5295
Reference WMP:	1858

Comments:

- Hupp 1 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Hupp
Source Latitude:	40.175058
Source Longitude:	-80.567622
Reference WMP:	1873

Comments:

- Hupp 2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Wylie Hupp
Source Latitude:	40.175069
Source Longitude:	-80.578206
Reference WMP:	1058

Comments:

- Hydro Recovery, LP

Type:	Purchased Water
County:	Washington, PA
Owner:	Hydro Recovery, LP - Burgettstown
Source Latitude:	40.419251
Source Longitude:	-80.422684
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Kelley #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Margaret Sue Kelley
Source Latitude:	39.681388
Source Longitude:	-80.701113
Reference WMP:	1865

Comments:

- Kestner Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Gary Kestner
Source Latitude:	40.147904
Source Longitude:	-80.539568
Reference WMP:	1872

Comments:

- Linda Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke

Owner:	Linda Greathouse
Source Latitude:	40.205416
Source Longitude:	-80.608805
Reference WMP:	1876

Comments:

- Lipps Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Ralph and Opal Lipps
Source Latitude:	38.8446
Source Longitude:	-80.3413
Reference WMP:	1850

Comments:

- McGlumphy Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Steven M. McGlumphy
Source Latitude:	40.152588
Source Longitude:	-80.587667
Reference WMP:	1060

Comments:

- Messenger Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Chesapeake Energy
Source Latitude:	393674857
Source Longitude:	-80.689887
Reference WMP:	1859

Comments:

- Pennsylvania American Water

Type:	Purchased Water
County:	
Owner:	Pennsylvania American Water
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Raw Water Pond @ Horizon Ventures

Type:	Purchased Water
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Source Latitude:	39.5535
Source Longitude:	-80.16742
Reference WMP:	

Comments:

- Recycled Frac Water

Type:	Recycled Frac Water
County:	
Owner:	
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Treated and recycled flowback/produced water sources may include, but are not limited to this well pad.

- Reliance Minerals A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.521316
Source Longitude:	-79.973907
Reference WMP:	1868

Comments:

- Reliance Minerals B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.524571
Source Longitude:	-79.974529
Reference WMP:	1867

Comments:

- Robinson Fork @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy II Appalachia, LLC.
Source Latitude:	39.979222
Source Longitude:	-80.487472
Reference WMP:	

Comments:

- Ross #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Mike Ross
Source Latitude:	38.9839
Source Longitude:	-80.2628
Reference WMP:	1851

Comments:

- Stern Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Marshall
Owner:	Alton and Mary Stern
Source Latitude:	39.733943
Source Longitude:	-80.64695
Reference WMP:	1826

Comments:

- WFN Impoundment A @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy, LLC
Source Latitude:	39.991417
Source Longitude:	-80.488694
Reference WMP:	

Comments:

- WFN Impoundment B @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy
Source Latitude:	39.991917
Source Longitude:	-80.4965

Reference WMP:	

Comments:

- Washington Pike PSD @ Brook Hills Park

Type:	Purchased Water
County:	Brooke
Owner:	Washington Pike PSD
Source Latitude:	40.26632
Source Longitude:	-80.543592
Reference WMP:	

Comments:

- Worthley Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Kimberly Worthley
Source Latitude:	40.216869
Source Longitude:	-80.548592
Reference WMP:	1061

Comments:

West Virginia Department of Environmental Protection

601 57th Street SE

Charleston, WV

Pollution and Emergency Spills 1-800-642-3074

www.dep.wv.gov

Water Management Plan

Action: Modified **Effective Date:** 3/18/2022
Operator: SWN Production Company, LLC
WMP ID: 1833
Plan Type: Well Pad
Facility Name: Timmy Minch OHI Well Pad
County: Ohio
Lat: 40.085422
Long: -80.646382

APPROVED
By Dawn Newell at 2:40 pm, 3/18/22

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supersedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

Api	Wellname
047-069-00092	Timmy Minch OHI 1H - 833624
047-069-00153	Timmy Minch OHI 206H - 8360725
047-069-00154	Timmy Minch OHI 6H - 836070
047-069-00155	Timmy Minch OHI 3H - 836500
047-069-00221	Timmy Minch OHI 201H
047-069-00266	Timmy Minch OHI 401H
047-069-00268	Timmy Minch OHI 6H
047-069-00277	Timmy Minch OHI 206H
047-069-00335	Timmy Minch OHI 8H
047-069-00336	Timmy Minch OHI 10H
047-069-00337	Timmy Minch OHI 210H

The following water consumption estimates (in gallons) have been reported for this plan.

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	24,466,680
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activities:	210,000
Total for Well Pad:	25,516,680

Primary Sources

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and enforceable as such.

For any source identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this Water Management Plan.

- Big Wheeling Creek @ Wheeling Staging Area

Type:	Stream/River
County:	Ohio
Owner:	Fulton Storage, LLC
Intake Latitude:	40.077019
Intake Longitude:	-80.713866
HUC-8 Code:	5030106
Drainage Area (sq	296.04

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	43.57
Minimum Passby (cfs):	40.03

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Booths Creek @ Reliance Minerals

Type:	Stream/River
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Intake Latitude:	39.530405
Intake Longitude:	-79.978079
HUC-8 Code:	5020003
Drainage Area (sq miles):	1.79
Regulated Stream:	NO
PWS Within 1 Mile:	YES Morgantown Utility Board

Gauged Stream:	NO
Ref Gauge ID:	3062500
Ref Gauge Name:	DECKERS CREEK AT MORGANTOWN, WV
Minimum Gauge Reading (cfs):	18.65
Minimum Passby (cfs):	.48
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Buffalo Creek @ Bethany VFD Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Bethany Pike Volunteer Fire Department
Intake Latitude:	40.253422
Intake Longitude:	-80.600319
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	67.66
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Buffalo Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.19386
Intake Longitude:	-80.525796
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	54.63
Minimum Passby (cfs):	43.52
Endangered Species:	NO

Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	3200

Comments:

- Buffalo Creek @ Forney

Type:	Stream/River
County:	Brooke
Owner:	Forney & Sons Holding Company, LLC
Intake Latitude:	40.193453
Intake Longitude:	-80.52175
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Fuchs

Type:	Stream/River
County:	Brooke
Owner:	Beverly Fuchs
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:

- Buffalo Creek @ Greathouse Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Linda Greathouse
Intake Latitude:	40.20895
Intake Longitude:	-80.60105
HUC-8 Code:	5030106
Drainage Area (sq miles):	138.56
Regulated Stream:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	60.42
Minimum Passby (cfs):	54.51
Endangered Species:	NO
Mussel Stream:	YES

PWS Within 1 Mile:	NO

Maximum Pump Rate (gpm):	3300

Comments:

- Buffalo Creek @ Labelle Farms

Type:	Stream/River
County:	Brooke
Owner:	Steve Paul
Intake Latitude:	40.204444
Intake Longitude:	-80.598645
HUC-8 Code:	5030106
Drainage Area (sq miles):	136.79
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	59.2
Minimum Passby (cfs):	53.8
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Buffalo Creek @ WVDOH

Type:	Stream/River
County:	Brooke
Owner:	West Virginia Division of Highways
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Buffalo Creek @ Worthley Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Kimberly C. Worthley
Intake Latitude:	40.210978
Intake Longitude:	-80.548779
HUC-8 Code:	5030106

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07

Drainage Area (sq miles):	113.49
Regulated Stream:	NO
PWS Within 1 Mile:	YES Hammond PSD

Minimum Passby (cfs):	44.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Zatta

Type:	Stream/River
County:	Brooke
Owner:	Edward Zatta
Intake Latitude:	40.253588
Intake Longitude:	-80.600254
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	66.37
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Cross Creek @ Bullock Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Isabelle Bullock
Intake Latitude:	40.30735
Intake Longitude:	-80.569317
HUC-8 Code:	5030101
Drainage Area (sq miles):	74.66
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	19.32
Minimum Passby (cfs):	20.99
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Cross Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.300536
Intake Longitude:	-80.542229
HUC-8 Code:	5030101
Drainage Area (sq	68.58

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	22.44
Minimum Passby (cfs):	22.44

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Cross Creek @ Norfolk and Western Railway

Type:	Stream/River
County:	Brooke
Owner:	Wheeling & Lake Erie Railway Company
Intake Latitude:	40.30802
Intake Longitude:	-80.599193
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Cross Creek @ Palizzi

Type:	Stream/River
County:	Brooke
Owner:	Campbell Palizzi
Intake Latitude:	40.302427
Intake Longitude:	-80.582753
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	23.11
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Fish Creek @ Gribben

Type:	Stream/River
County:	Marshall
Owner:	Revocable Living Trust

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT

	of M. Peggy Gribben
Intake Latitude:	39.753271
Intake Longitude:	-80.597913
HUC-8 Code:	5030106
Drainage Area (sq miles):	141.61
Regulated Stream:	NO
PWS Within 1 Mile:	NO

	ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	23.94
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Fish Creek @ Guzek

Type:	Stream/River
County:	Marshall
Owner:	Walter A. Guzek
Intake Latitude:	39.753021
Intake Longitude:	-80.613941
HUC-8 Code:	5030106
Drainage Area (sq miles):	144.57
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	24.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Little Wheeling Creek @ Edge Withdrawal Site

Type:	Stream/River
County:	Ohio
Owner:	Alice Mae Edge
Intake Latitude:	40.098
Intake Longitude:	-80.5558
HUC-8 Code:	5030106
Drainage Area (sq miles):	4.26
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Little Wheeling Creek @ Main Street Bank

Type:	Stream/River
County:	Ohio
Owner:	Main Street Bank
Intake Latitude:	40.064076
Intake Longitude:	-80.614406
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	23
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Little Wheeling Creek @ Rt. 40 Staging Area

Type:	Stream/River
County:	Ohio
Owner:	JDS Investments, LLC
Intake Latitude:	40.078324
Intake Longitude:	-80.591145
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	64.8
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Gribben

Type:	Stream/River
County:	Ohio
Owner:	Lawrence Kevin Gribber
Intake Latitude:	40.036777
Intake Longitude:	-80.598008
HUC-8 Code:	5030106
Drainage Area (sq miles):	30.81
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	6.26
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Supler

Type:	Stream/River

Gauged Stream:	NO

County:	Ohio
Owner:	Gregory and Peggy Supler
Intake Latitude:	40.04409
Intake Longitude:	-80.55348
HUC-8 Code:	5030106
Drainage Area (sq miles):	20.54
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	62.57
Minimum Passby (cfs):	4.17
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Ohio River @ Extraction B Panhandle

Type:	Stream/River
County:	Brooke
Owner:	SWN Production Company, LLC
Intake Latitude:	40.233469
Intake Longitude:	-80.654359
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4375

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Proctor Peacemaker

Type:	Stream/River
County:	Wetzel
Owner:	SWN Production Company, LLC
Intake Latitude:	39.714299
Intake Longitude:	-80.825862
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	6000

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Paw Paw Creek @ Horizon Ventures

Type:	Stream/River
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Intake Latitude:	39.552426
Intake Longitude:	-80.166833
HUC-8 Code:	5020003
Drainage Area (sq miles):	28.34
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	26.96
Minimum Passby (cfs):	4.57
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Short Creek @ Cain

Type:	Stream/River
County:	Ohio
Owner:	Susan L. Cain
Intake Latitude:	40.155061
Intake Longitude:	-80.651431
HUC-8 Code:	5030106
Drainage Area (sq miles):	16.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	64.49
Minimum Passby (cfs):	7.68
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	3360

Comments:

- WV Fork Fish Creek @ Derby

Type:	Stream/River
County:	Wetzel
Owner:	Steven Derby
Intake Latitude:	39.709329
Intake Longitude:	-80.536079
HUC-8 Code:	5030106
Drainage Area (sq miles):	48.62
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	52.24
Minimum Passby (cfs):	8.21
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- WV Fork Fish Creek @ Francis

Type:	Stream/River
County:	Marshall
Owner:	Loretta J. Francis
Intake Latitude:	39.733295
Intake Longitude:	-80.579415
HUC-8 Code:	5030106
Drainage Area (sq miles):	86.51
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	63.69
Minimum Passby (cfs):	17.55
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:

- WV Fork of Fish Creek @ Van Scyoc Withdrawal Site

Type:	Stream/River
County:	Wetzel
Owner:	Israel D Van Scyoc
Intake Latitude:	39.6908
Intake Longitude:	-80.4762
HUC-8 Code:	5030106
Drainage Area (sq miles):	21.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	5.45
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Wheeling Creek @ Iskcon

Type:	Stream/River
County:	Marshall
Owner:	Iskcon New Vrindaban, Inc.
Intake Latitude:	39.967973
Intake Longitude:	-80.599241
HUC-8 Code:	5030106
Drainage Area (sq miles):	189.6
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Wheeling Creek @ Schafer

Type:	Stream/River
County:	Marshall
Owner:	Betty Jane Schafer
Intake Latitude:	39.99257
Intake Longitude:	-80.634912
HUC-8 Code:	5030106
Drainage Area (sq miles):	203.38
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.7
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Wheeling Creek @ Sligar

Type:	Stream/River
County:	Marshall
Owner:	Terry Sligar
Intake Latitude:	40.013185
Intake Longitude:	-80.652863
HUC-8 Code:	5030106
Drainage Area (sq miles):	211.8
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	28.64
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or Wheeling Creek @ Iskcon site.

- Whiteday Creek @ Sorine Withdrawal Site

Type:	Stream/River
County:	Marion
Owner:	Andrew Sorine, Jr.
Intake Latitude:	39.472311
Intake Longitude:	-79.977123
HUC-8 Code:	5020003
Drainage Area (sq miles):	12.29
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	20.25
Minimum Passby (cfs):	2.29
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Adrian Public Service District

Type:	Purchased Water
County:	Upshur
Owner:	Adrian Public Service District
Intake Latitude:	38.9775
Intake Longitude:	-80.22083
HUC-8 Code:	5020001
Drainage Area (sq miles):	197.33
Regulated Stream:	YES
PWS Within 1 Mile:	YES City of Buckhannon Water Plant

Gauged Stream:	YES
Ref Gauge ID:	3054500
Ref Gauge Name:	TYGART VALLEY RIVER AT PHILIPPI, WV
Minimum Gauge Reading (cfs):	155.85
Minimum Passby (cfs):	75.51
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:

- American Petroleum Partners (Wheeling Creek @ Wilson)

Type:	Purchased Water
County:	Marshall
Owner:	American Petroleum Partners, LLC
Intake Latitude:	39.975882
Intake Longitude:	-80.62967
HUC-8 Code:	5030106
Drainage Area (sq miles):	192.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	26.09
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- Covestro, LLC

Type:	Purchased Water
County:	Marshall
Owner:	Covestro, LLC
Intake Latitude:	39.7218
Intake Longitude:	-80.830231
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate	

	PSD	(gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Elite Gasfield Services

Type:	Purchased Water
County:	Brooke
Owner:	Elite Gasfield Services
Intake Latitude:	40.32667
Intake Longitude:	-80.59861
HUC-8 Code:	5030101
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES City of Follansbee

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Grandview-Doolin PSD

Type:	Purchased Water
County:	Wetzel
Owner:	Grandview-Doolin Public Service District
Intake Latitude:	39.71361
Intake Longitude:	-80.82583
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Marshall County Public Service District 3

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #3

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock &

Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

	Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Tap Location is: (39.906400, -80.586200)

- Marshall County Public Service District 4

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #4
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Ohio County PSD

Type:	Purchased Water
County:	Ohio
Owner:	Ohio county PSD
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before

purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ 4K Industrial Park

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Intake Latitude:	40.098805
Intake Longitude:	-80.711328
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ J&R Excavating

Type:	Purchased Water
County:	Marshall
Owner:	J&R Excavating
Intake Latitude:	39.998509
Intake Longitude:	-80.737336
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Oasis Transport Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Oasis Transport, LLC
Intake Latitude:	40.331551
Intake Longitude:	-80.601034
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	

Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Range Tap @ Corbin Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Range Resources Corp.
Intake Latitude:	40.229983
Intake Longitude:	-80.521067
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- The Village of Valley Grove

Type:	Purchased Water
County:	Ohio
Owner:	The Village of Valley Grove
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Valley Falls PSD

Type:	Purchased Water

Gauged Stream:	YES

County:	Marion
Owner:	Valley Falls PSD
Intake Latitude:	39.45889
Intake Longitude:	-80.15583
HUC-8 Code:	5020001
Drainage Area (sq miles):	1367.05
Regulated Stream:	YES Tygart Valley Dam
PWS Within 1 Mile:	YES City of Fairmont

Ref Gauge ID:	3057000
Ref Gauge Name:	TYGART VALLEY RIVER AT COLFAX, WV
Minimum Gauge Reading (cfs):	397.39
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek # 2 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.949577
Intake Longitude:	-80.531255
HUC-8 Code:	5030106
Drainage Area (sq miles):	152.4
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.24
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #1 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.95205
Intake Longitude:	-80.56189
HUC-8 Code:	5030106
Drainage Area (sq miles):	156.06
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.63
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Water Department

Type:	Purchased Water
County:	Ohio
Owner:	Wheeling Water

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station:

	Department
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

	Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Shoemaker Groundwater Wells @ HG Energy

Type:	Ground Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	40.0222
Intake Longitude:	-80.733888
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	800

Comments:
This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals.
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Secondary Sources

For each proposed secondary water source identified in your water management plan (i.e. groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow and quality-tested by the operator at the request of the drinking well owner prior to the operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for

current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

- The use of recycled frac water is always encouraged.

- 4K Industrial Park, LLC

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Source Latitude:	40.100395
Source Longitude:	-80.71269
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Ballato Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Nick Ballato and Christopher Ballato
Source Latitude:	40.308611
Source Longitude:	-80.565028
Reference WMP:	1877

Comments:

- Barry Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Barry Greathouse
Source Latitude:	40.18831
Source Longitude:	-80.63714
Reference WMP:	1869

Comments:

- Columbia Gas Transmission (TCO Elson) FWI

Type:	Purchased Water
County:	Marshall
Owner:	Columbia Gas Transmission, LLC.
Source Latitude:	39.75398
Source Longitude:	-80.613604
Reference WMP:	547

Comments:

- Corbin Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Margaret Corbin
Source Latitude:	40.233122
Source Longitude:	-80.524025
Reference WMP:	1870

Comments:

- Durig A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	39.715905
Source Longitude:	-80.636785
Reference WMP:	1862

Comments:

- Durig B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	38.8022
Source Longitude:	-80.638491
Reference WMP:	1863

Comments:

- Elite Gasfield Services, Midland Borough

Type:	Purchased Water
County:	Beaver, PA
Owner:	Elite Gasfield Services
Source Latitude:	40.644598
Source Longitude:	-80.469382
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Elmer Freshwater Impoundment

Type:	Centralized Freshwater

	Impoundment
County:	Upshur
Owner:	Charles and Thomas Elmer
Source Latitude:	38.831351
Source Longitude:	-80.276326
Reference WMP:	1847

Comments:

- Equitrans Water Services, LLC Cook Impoundment

Type:	Purchased Water
County:	Greene, PA
Owner:	Equitrans Water Services, LLC
Source Latitude:	39.817197
Source Longitude:	-80.477956
Reference WMP:	

Comments:
PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.

- Farmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Clarence Farmer
Source Latitude:	40.146183
Source Longitude:	-80.573857
Reference WMP:	1871

Comments:

- Ferrell Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Kevin Ferrell
Source Latitude:	40.04445
Source Longitude:	-80.53023
Reference WMP:	1874

Comments:

- Grant Town Water

Type:	Purchased Water
County:	Marion

Owner:	Town of Grant Town
Source Latitude:	39.559407
Source Longitude:	-80.172893
Reference WMP:	

Comments:
@ Horizon Ventures Withdrawal Location

- Heartwood Forestland Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ritchie
Owner:	Wanda Bartlett
Source Latitude:	39.123961
Source Longitude:	-81.098573
Reference WMP:	1878

Comments:

- Helen Miller Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Helen J. Miller
Source Latitude:	40.085722
Source Longitude:	-80.623333
Reference WMP:	1059

Comments:

- Hickman Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Mark Hickman et al
Source Latitude:	40.041361
Source Longitude:	-80.548944
Reference WMP:	1875

Comments:

- Hieronimus #1 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.811
Source Longitude:	-80.5212

Reference WMP:	1856

Comments:

- Hieronimus #2 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8149
Source Longitude:	-80.5233
Reference WMP:	1857

Comments:

- Hieronimus #3 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8162
Source Longitude:	-80.5266
Reference WMP:	1761

Comments:

- Hieronimus #4 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8198
Source Longitude:	-80.5295
Reference WMP:	1858

Comments:

- Hupp 1 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Hupp
Source Latitude:	40.175058
Source Longitude:	-80.567622
Reference WMP:	1873

Comments:

- Hupp 2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Wylie Hupp
Source Latitude:	40.175069
Source Longitude:	-80.578206
Reference WMP:	1058

Comments:

- Hydro Recovery, LP

Type:	Purchased Water
County:	Washington, PA
Owner:	Hydro Recovery, LP - Burgettstown
Source Latitude:	40.419251
Source Longitude:	-80.422684
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Kelley #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Margaret Sue Kelley
Source Latitude:	39.681388
Source Longitude:	-80.701113
Reference WMP:	1865

Comments:

- Kestner Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Gary Kestner
Source Latitude:	40.147904
Source Longitude:	-80.539568
Reference WMP:	1872

Comments:

- Linda Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke

Owner:	Linda Greathouse
Source Latitude:	40.205416
Source Longitude:	-80.608805
Reference WMP:	1876

Comments:

- Lipps Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Ralph and Opal Lipps
Source Latitude:	38.8446
Source Longitude:	-80.3413
Reference WMP:	1850

Comments:

- McGlumphy Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Steven M. McGlumphy
Source Latitude:	40.152588
Source Longitude:	-80.587667
Reference WMP:	1060

Comments:

- Messenger Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Chesapeake Energy
Source Latitude:	393674857
Source Longitude:	-80.689887
Reference WMP:	1859

Comments:

- Pennsylvania American Water

Type:	Purchased Water
County:	
Owner:	Pennsylvania American Water
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Raw Water Pond @ Horizon Ventures

Type:	Purchased Water
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Source Latitude:	39.5535
Source Longitude:	-80.16742
Reference WMP:	

Comments:

- Recycled Frac Water

Type:	Recycled Frac Water
County:	
Owner:	
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Treated and recycled flowback/produced water sources may include, but are not limited to this well pad.

- Reliance Minerals A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.521316
Source Longitude:	-79.973907
Reference WMP:	1868

Comments:

- Reliance Minerals B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.524571
Source Longitude:	-79.974529
Reference WMP:	1867

Comments:

- Robinson Fork @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy II Appalachia, LLC.
Source Latitude:	39.979222
Source Longitude:	-80.487472
Reference WMP:	

Comments:

- Ross #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Mike Ross
Source Latitude:	38.9839
Source Longitude:	-80.2628
Reference WMP:	1851

Comments:

- Stern Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Marshall
Owner:	Alton and Mary Stern
Source Latitude:	39.733943
Source Longitude:	-80.64695
Reference WMP:	1826

Comments:

- WFN Impoundment A @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy, LLC
Source Latitude:	39.991417
Source Longitude:	-80.488694
Reference WMP:	

Comments:

- WFN Impoundment B @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy
Source Latitude:	39.991917
Source Longitude:	-80.4965

Reference WMP:	

Comments:

- Washington Pike PSD @ Brook Hills Park

Type:	Purchased Water
County:	Brooke
Owner:	Washington Pike PSD
Source Latitude:	40.26632
Source Longitude:	-80.543592
Reference WMP:	

Comments:

- Worthley Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Kimberly Worthley
Source Latitude:	40.216869
Source Longitude:	-80.548592
Reference WMP:	1061

Comments:

West Virginia Department of Environmental Protection

601 57th Street SE

Charleston, WV

Pollution and Emergency Spills 1-800-642-3074

www.dep.wv.gov

Water Management Plan

Action: Modified **Effective Date:** 4/22/2022
Operator: SWN Production Company, LLC
WMP ID: 1967
Plan Type: Well Pad
Facility Name: OCC A OHI Well Pad
County: Ohio
Lat: 40.079503
Long: -80.59804

APPROVED
By Dawn Newell at 10:38 am, 4/22/22

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supersedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

Api	Wellname
047-069-00137	OCC A OHI 10H
047-069-00239	OCC A OHI 5H
047-069-00241	OCC A OHI 205H
047-069-00245	OCC A OHI 8H
047-069-00261	OCC A OHI 6H
047-069-00269	OCC A OHI 405H
047-069-00340	OCC A OHI 1H
047-069-00341	OCC A OHI 201H
047-069-00342	OCC A OHI 401H
047-069-00343	OCC A OHI 601H

The following water consumption estimates (in gallons) have been reported for this plan.

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	28,823,760
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activities:	210,000
Total for Well Pad:	29,873,760

Primary Sources

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and enforceable as such.

For any source identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this Water Management Plan.

- Big Wheeling Creek @ Hogg

Type:	Stream/River
County:	Marshall
Owner:	Don Hogg
Intake Latitude:	39.984529
Intake Longitude:	-80.634106
HUC-8 Code:	5030106
Drainage Area (sq miles):	201.69

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.23
Minimum Passby (cfs):	27.28
Endangered Species:	NO

Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	5040

Comments:

- Big Wheeling Creek @ Wheeling Staging Area

Type:	Stream/River
County:	Ohio
Owner:	Fulton Storage, LLC
Intake Latitude:	40.077019
Intake Longitude:	-80.713866
HUC-8 Code:	5030106
Drainage Area (sq miles):	296.04
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	43.57
Minimum Passby (cfs):	40.03
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Booths Creek @ Reliance Minerals

Type:	Stream/River
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Intake Latitude:	39.530405
Intake Longitude:	-79.978079
HUC-8 Code:	5020003
Drainage Area (sq miles):	1.79
Regulated Stream:	NO
PWS Within 1 Mile:	YES Morgantown Utility Board

Gauged Stream:	NO
Ref Gauge ID:	3062500
Ref Gauge Name:	DECKERS CREEK AT MORGANTOWN, WV
Minimum Gauge Reading (cfs):	18.65
Minimum Passby (cfs):	.48
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Buffalo Creek @ Bethany VFD Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Bethany Pike Volunteer Fire Department
Intake Latitude:	40.253422
Intake Longitude:	-80.600319
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	67.66
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate	3100

PWS Within 1 Mile:	NO	(gpm):	

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Buffalo Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.19386
Intake Longitude:	-80.525796
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	54.63
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3200

Comments:

- Buffalo Creek @ Forney

Type:	Stream/River
County:	Brooke
Owner:	Forney & Sons Holding Company, LLC
Intake Latitude:	40.193453
Intake Longitude:	-80.52175
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Fuchs

Type:	Stream/River
County:	Brooke
Owner:	Beverly Fuchs
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate	5250

(gpm):	

Comments:

- Buffalo Creek @ Greathouse Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Linda Greathouse
Intake Latitude:	40.20895
Intake Longitude:	-80.60105
HUC-8 Code:	5030106
Drainage Area (sq miles):	138.56
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	60.42
Minimum Passby (cfs):	54.51
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3300

Comments:

- Buffalo Creek @ Labelle Farms

Type:	Stream/River
County:	Brooke
Owner:	Steve Paul
Intake Latitude:	40.204444
Intake Longitude:	-80.598645
HUC-8 Code:	5030106
Drainage Area (sq miles):	136.79
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	59.2
Minimum Passby (cfs):	53.8
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Buffalo Creek @ WVDOH

Type:	Stream/River
County:	Brooke
Owner:	West Virginia Division of Highways
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES

Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Maximum Pump Rate (gpm):	3360

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Buffalo Creek @ Worthley Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Kimberly C. Worthley
Intake Latitude:	40.210978
Intake Longitude:	-80.548779
HUC-8 Code:	5030106
Drainage Area (sq miles):	113.49
Regulated Stream:	NO
PWS Within 1 Mile:	YES Hammond PSD

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	44.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Zatta

Type:	Stream/River
County:	Brooke
Owner:	Edward Zatta
Intake Latitude:	40.253588
Intake Longitude:	-80.600254
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	66.37
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Cross Creek @ Bullock Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Isabelle Bullock
Intake Latitude:	40.30735
Intake Longitude:	-80.569317
HUC-8 Code:	5030101
Drainage Area (sq	74.66

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	19.32
Minimum Passby (cfs):	20.99
Endangered Species:	NO

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Cross Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.300536
Intake Longitude:	-80.542229
HUC-8 Code:	5030101
Drainage Area (sq miles):	68.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	22.44
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Cross Creek @ Norfolk and Western Railway

Type:	Stream/River
County:	Brooke
Owner:	Wheeling & Lake Erie Railway Company
Intake Latitude:	40.30802
Intake Longitude:	-80.599193
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Cross Creek @ Palizzi

Type:	Stream/River
County:	Brooke
Owner:	Campbell Palizzi
Intake Latitude:	40.302427

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading	23.11

Intake Longitude:	-80.582753
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	NO
PWS Within 1 Mile:	NO

(cfs):	
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Fish Creek @ Gribben

Type:	Stream/River
County:	Marshall
Owner:	Revocable Living Trust of M. Peggy Gribben
Intake Latitude:	39.753271
Intake Longitude:	-80.597913
HUC-8 Code:	5030106
Drainage Area (sq miles):	141.61
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	23.94
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Fish Creek @ Guzek

Type:	Stream/River
County:	Marshall
Owner:	Walter A. Guzek
Intake Latitude:	39.753021
Intake Longitude:	-80.613941
HUC-8 Code:	5030106
Drainage Area (sq miles):	144.57
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	24.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Little Wheeling Creek @ Edge Withdrawal Site

Type:	Stream/River

Gauged Stream:	NO

County:	Ohio
Owner:	Alice Mae Edge
Intake Latitude:	40.098
Intake Longitude:	-80.5558
HUC-8 Code:	5030106
Drainage Area (sq miles):	4.26
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Little Wheeling Creek @ Main Street Bank

Type:	Stream/River
County:	Ohio
Owner:	Main Street Bank
Intake Latitude:	40.064076
Intake Longitude:	-80.614406
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	23
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Little Wheeling Creek @ Rt. 40 Staging Area

Type:	Stream/River
County:	Ohio
Owner:	JDS Investments, LLC
Intake Latitude:	40.078324
Intake Longitude:	-80.591145
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	64.8
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Gribben

Type:	Stream/River
County:	Ohio

Gauged Stream:	NO
Ref Gauge ID:	3112000

Owner:	Lawrence Kevin Gribber
Intake Latitude:	40.036777
Intake Longitude:	-80.598008
HUC-8 Code:	5030106
Drainage Area (sq miles):	30.81
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	6.26
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Supler

Type:	Stream/River
County:	Ohio
Owner:	Gregory and Peggy Supler
Intake Latitude:	40.04409
Intake Longitude:	-80.55348
HUC-8 Code:	5030106
Drainage Area (sq miles):	20.54
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	62.57
Minimum Passby (cfs):	4.17
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Ohio River @ Extraction B Panhandle

Type:	Stream/River
County:	Brooke
Owner:	SWN Production Company, LLC
Intake Latitude:	40.233469
Intake Longitude:	-80.654359
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4375

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Proctor Peacemaker

Type:	Stream/River
County:	Wetzel
Owner:	SWN Production Company, LLC
Intake Latitude:	39.714299
Intake Longitude:	-80.825862
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	6000

Comments:

Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Paw Paw Creek @ Horizon Ventures

Type:	Stream/River
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Intake Latitude:	39.552426
Intake Longitude:	-80.166833
HUC-8 Code:	5020003
Drainage Area (sq miles):	28.34
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	26.96
Minimum Passby (cfs):	4.57
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Short Creek @ Cain

Type:	Stream/River
County:	Ohio
Owner:	Susan L. Cain
Intake Latitude:	40.155061
Intake Longitude:	-80.651431
HUC-8 Code:	5030106
Drainage Area (sq miles):	16.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	64.49
Minimum Passby (cfs):	7.68
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	3360

Comments:

- WV Fork Fish Creek @ Derby

Type:	Stream/River
County:	Wetzel
Owner:	Steven Derby
Intake Latitude:	39.709329
Intake Longitude:	-80.536079
HUC-8 Code:	5030106
Drainage Area (sq miles):	48.62
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	52.24
Minimum Passby (cfs):	8.21
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- WV Fork Fish Creek @ Francis

Type:	Stream/River
County:	Marshall
Owner:	Loretta J. Francis
Intake Latitude:	39.733295
Intake Longitude:	-80.579415
HUC-8 Code:	5030106
Drainage Area (sq miles):	86.51
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	63.69
Minimum Passby (cfs):	17.55
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.94 cfs (0.51 ft on upstream staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- WV Fork of Fish Creek @ Van Scyoc Withdrawal Site

Type:	Stream/River
County:	Wetzel
Owner:	Israel D Van Scyoc
Intake Latitude:	39.6908
Intake Longitude:	-80.4762
HUC-8 Code:	5030106
Drainage Area (sq miles):	21.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	5.45
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Wheeling Creek @ Iskcon

Type:	Stream/River
County:	Marshall
Owner:	Iskcon New Vrindaban, Inc.
Intake Latitude:	39.967973
Intake Longitude:	-80.599241
HUC-8 Code:	5030106
Drainage Area (sq miles):	189.6
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Wheeling Creek @ Schafer

Type:	Stream/River
County:	Marshall
Owner:	Betty Jane Schafer
Intake Latitude:	39.99257
Intake Longitude:	-80.634912
HUC-8 Code:	5030106
Drainage Area (sq miles):	203.38
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.7
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Wheeling Creek @ Sligar

Type:	Stream/River
County:	Marshall
Owner:	Terry Sligar
Intake Latitude:	40.013185
Intake Longitude:	-80.652863
HUC-8 Code:	5030106
Drainage Area (sq miles):	211.8
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	28.64
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 20.92 cfs (1.00 ft on upstream staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded. This site shall not be operated concurrently with the Wheeling Creek @ Schafer location or Wheeling Creek @ Iskcon site.

- Whiteday Creek @ Sorine Withdrawal Site

Type:	Stream/River
County:	Marion
Owner:	Andrew Sorine, Jr.
Intake Latitude:	39.472311
Intake Longitude:	-79.977123
HUC-8 Code:	5020003
Drainage Area (sq miles):	12.29
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	20.25
Minimum Passby (cfs):	2.29
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Adrian Public Service District

Type:	Purchased Water
County:	Upshur
Owner:	Adrian Public Service District
Intake Latitude:	38.9775
Intake Longitude:	-80.22083
HUC-8 Code:	5020001
Drainage Area (sq miles):	197.33
Regulated Stream:	YES
PWS Within 1 Mile:	YES City of Buckhannon Water Plant

Gauged Stream:	YES
Ref Gauge ID:	3054500
Ref Gauge Name:	TYGART VALLEY RIVER AT PHILIPPI, WV
Minimum Gauge Reading (cfs):	155.85
Minimum Passby (cfs):	75.51
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:

- American Petroleum Partners (Wheeling Creek @ Wilson)

Type:	Purchased Water
County:	Marshall
Owner:	American Petroleum Partners, LLC
Intake Latitude:	39.975882
Intake Longitude:	-80.62967
HUC-8 Code:	5030106

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	26.09
Endangered Species:	NO

Drainage Area (sq miles):	192.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- Covestro, LLC

Type:	Purchased Water
County:	Marshall
Owner:	Covestro, LLC
Intake Latitude:	39.7218
Intake Longitude:	-80.830231
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Elite Gasfield Services

Type:	Purchased Water
County:	Brooke
Owner:	Elite Gasfield Services
Intake Latitude:	40.32667
Intake Longitude:	-80.59861
HUC-8 Code:	5030101
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES City of Follansbee

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Grandview-Doolin PSD

Type:	Purchased Water
County:	Wetzel
Owner:	Grandview-Doolin Public Service District

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock &

Intake Latitude:	39.71361
Intake Longitude:	-80.82583
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

	Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Marshall County Public Service District 3

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #3
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Tap Location is: (39.906400, -80.586200)

- Marshall County Public Service District 4

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #4
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Ohio County PSD

Type:	Purchased Water
County:	Ohio
Owner:	Ohio county PSD
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ 4K Industrial Park

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Intake Latitude:	40.098805
Intake Longitude:	-80.711328
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ J&R Excavating

Type:	Purchased Water
County:	Marshall
Owner:	J&R Excavating
Intake Latitude:	39.998509
Intake Longitude:	-80.737336
HUC-8 Code:	5030106

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading	6468

Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

(cfs):	
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Oasis Transport Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Oasis Transport, LLC
Intake Latitude:	40.331551
Intake Longitude:	-80.601034
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Range Tap @ Corbin Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Range Resources Corp.
Intake Latitude:	40.229983
Intake Longitude:	-80.521067
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- The Village of Valley Grove

Type:	Purchased Water
County:	Ohio
Owner:	The Village of Valley Grove
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Valley Falls PSD

Type:	Purchased Water
County:	Marion
Owner:	Valley Falls PSD
Intake Latitude:	39.45889
Intake Longitude:	-80.15583
HUC-8 Code:	5020001
Drainage Area (sq miles):	1367.05
Regulated Stream:	YES Tygart Valley Dam
PWS Within 1 Mile:	YES City of Fairmont

Gauged Stream:	YES
Ref Gauge ID:	3057000
Ref Gauge Name:	TYGART VALLEY RIVER AT COLFAX, WV
Minimum Gauge Reading (cfs):	397.39
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #1 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.95205
Intake Longitude:	-80.56189
HUC-8 Code:	5030106
Drainage Area (sq miles):	156.06
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.63
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #2 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.949578
Intake Longitude:	-80.531256
HUC-8 Code:	5030106
Drainage Area (sq miles):	152.4
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.24
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Water Department

Type:	Purchased Water
County:	Ohio
Owner:	Wheeling Water Department
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Shoemaker Groundwater Wells @ HG Energy

Type:	Ground Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	40.0222
Intake Longitude:	-80.733888
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO

PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	800

Comments:
This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals.
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Secondary Sources

For each proposed secondary water source identified in your water management plan (i.e. groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow and quality-tested by the operator at the request of the drinking well owner prior to the operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.
- The use of recycled frac water is always encouraged.

- 4K Industrial Park, LLC

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Source Latitude:	40.100395
Source Longitude:	-80.71269
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Ballato Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Nick Ballato and Christopher Ballato
Source Latitude:	40.308611
Source Longitude:	-80.565028
Reference WMP:	1877

Comments:

- Barry Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Barry Greathouse
Source Latitude:	40.18831
Source Longitude:	-80.63714
Reference WMP:	1869

Comments:

- Columbia Gas Transmission (TCO Elson) FWI

Type:	Purchased Water
County:	Marshall
Owner:	Columbia Gas Transmission, LLC.
Source Latitude:	39.75398
Source Longitude:	-80.613604
Reference WMP:	547

Comments:

- Corbin Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Margaret Corbin
Source Latitude:	40.233122
Source Longitude:	-80.524025
Reference WMP:	1870

Comments:

- Durig A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	39.715905
Source Longitude:	-80.636785
Reference WMP:	1862

Comments:

- Durig B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig

Source Latitude:	38.8022
Source Longitude:	-80.638491
Reference WMP:	1863

Comments:

- Elite Gasfield Services, Midland Borough

Type:	Purchased Water
County:	Beaver, PA
Owner:	Elite Gasfield Services
Source Latitude:	40.644598
Source Longitude:	-80.469382
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Elmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Charles and Thomas Elmer
Source Latitude:	38.831351
Source Longitude:	-80.276326
Reference WMP:	1847

Comments:

- Equitrans Water Services, LLC Cook Impoundment

Type:	Purchased Water
County:	Greene, PA
Owner:	Equitrans Water Services, LLC
Source Latitude:	39.817197
Source Longitude:	-80.477956
Reference WMP:	

Comments:
PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PA DEP.

- Farmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Clarence Farmer
Source Latitude:	40.146183

Source Longitude:	-80.573857
Reference WMP:	1871

Comments:

- Ferrell Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Kevin Ferrell
Source Latitude:	40.04445
Source Longitude:	-80.53023
Reference WMP:	1874

Comments:

- Grant Town Water

Type:	Purchased Water
County:	Marion
Owner:	Town of Grant Town
Source Latitude:	39.559407
Source Longitude:	-80.172893
Reference WMP:	

Comments:
@ Horizon Ventures Withdrawal Location

- Heartwood Forestland Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ritchie
Owner:	Wanda Bartlett
Source Latitude:	39.123961
Source Longitude:	-81.098573
Reference WMP:	1878

Comments:

- Helen Miller Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Helen J. Miller
Source Latitude:	40.085722
Source Longitude:	-80.623333
Reference WMP:	1059

Comments:

- Hickman Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Mark Hickman et al
Source Latitude:	40.041361
Source Longitude:	-80.548944
Reference WMP:	1875

Comments:

- Hieronimus #1 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.811
Source Longitude:	-80.5212
Reference WMP:	1856

Comments:

- Hieronimus #2 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8149
Source Longitude:	-80.5233
Reference WMP:	1857

Comments:

- Hieronimus #3 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8162
Source Longitude:	-80.5266
Reference WMP:	1761

Comments:

- Hieronimus #4 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra

	Hieronimus
Source Latitude:	39.8198
Source Longitude:	-80.5295
Reference WMP:	1858

Comments:

- Hupp 1 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Hupp
Source Latitude:	40.175058
Source Longitude:	-80.567622
Reference WMP:	1873

Comments:

- Hupp 2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Wylie Hupp
Source Latitude:	40.175069
Source Longitude:	-80.578206
Reference WMP:	1058

Comments:

- Hydro Recovery, LP

Type:	Purchased Water
County:	Washington, PA
Owner:	Hydro Recovery, LP - Burgettstown
Source Latitude:	40.419251
Source Longitude:	-80.422684
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Kelley #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Margaret Sue Kelley
Source Latitude:	39.681388
Source Longitude:	-80.701113

Reference WMP:	1865

Comments:

- Kestner Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Gary Kestner
Source Latitude:	40.147904
Source Longitude:	-80.539568
Reference WMP:	1872

Comments:

- Linda Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Linda Greathouse
Source Latitude:	40.205416
Source Longitude:	-80.608805
Reference WMP:	1876

Comments:

- Lipps Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Ralph and Opal Lipps
Source Latitude:	38.8446
Source Longitude:	-80.3413
Reference WMP:	1850

Comments:

- McGlumphy Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Steven M. McGlumphy
Source Latitude:	40.152588
Source Longitude:	-80.587667
Reference WMP:	1060

Comments:

- Messenger Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Chesapeake Energy
Source Latitude:	393674857
Source Longitude:	-80.689887
Reference WMP:	1859

Comments:

- Pennsylvania American Water

Type:	Purchased Water
County:	
Owner:	Pennsylvania American Water
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Raw Water Pond @ Horizon Ventures

Type:	Purchased Water
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Source Latitude:	39.5535
Source Longitude:	-80.16742
Reference WMP:	

Comments:

- Recycled Frac Water

Type:	Recycled Frac Water
County:	
Owner:	
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Treated and recycled flowback/produced water sources may include, but are not limited to this well pad.

- Reliance Minerals A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia

Owner:	Reliance Minerals, Inc.
Source Latitude:	39.521316
Source Longitude:	-79.973907
Reference WMP:	1868

Comments:

- Reliance Minerals B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.524571
Source Longitude:	-79.974529
Reference WMP:	1867

Comments:

- Robinson Fork @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy II Appalachia, LLC.
Source Latitude:	39.979222
Source Longitude:	-80.487472
Reference WMP:	

Comments:

- Ross #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Mike Ross
Source Latitude:	38.9839
Source Longitude:	-80.2628
Reference WMP:	1851

Comments:

- Stern Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Marshall
Owner:	Alton and Mary Stern
Source Latitude:	39.733943
Source Longitude:	-80.64695
Reference WMP:	1826

Comments:

- WFN Impoundment A @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy, LLC
Source Latitude:	39.991417
Source Longitude:	-80.488694
Reference WMP:	

Comments:

- WFN Impoundment B @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy
Source Latitude:	39.991917
Source Longitude:	-80.4965
Reference WMP:	

Comments:

- Washington Pike PSD @ Brook Hills Park

Type:	Purchased Water
County:	Brooke
Owner:	Washington Pike PSD
Source Latitude:	40.26632
Source Longitude:	-80.543592
Reference WMP:	

Comments:

- Worthley Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Kimberly Worthley
Source Latitude:	40.216869
Source Longitude:	-80.548592
Reference WMP:	1061

Comments:

Water Management Plan

Action: Modified **Effective Date:** 4/22/2022
Operator: SWN Production Company, LLC
WMP ID: 1967
Plan Type: Well Pad
Facility Name: OCC A OHI Well Pad
County: Ohio
Lat: 40.079503
Long: -80.59804

APPROVED
By Dawn Newell at 10:38 am, 4/22/22

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supersedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

Api	Wellname
047-069-00137	OCC A OHI 10H
047-069-00239	OCC A OHI 5H
047-069-00241	OCC A OHI 205H
047-069-00245	OCC A OHI 8H
047-069-00261	OCC A OHI 6H
047-069-00269	OCC A OHI 405H
047-069-00340	OCC A OHI 1H
047-069-00341	OCC A OHI 201H
047-069-00342	OCC A OHI 401H
047-069-00343	OCC A OHI 601H

The following water consumption estimates (in gallons) have been reported for this plan.

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	28,823,760
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activities:	210,000
Total for Well Pad:	29,873,760

Primary Sources

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and enforceable as such.

For any source identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this Water Management Plan.

- Big Wheeling Creek @ Hogg

Type:	Stream/River
County:	Marshall
Owner:	Don Hogg
Intake Latitude:	39.984529
Intake Longitude:	-80.634106
HUC-8 Code:	5030106
Drainage Area (sq miles):	201.69

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.23
Minimum Passby (cfs):	27.28
Endangered Species:	NO

Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	5040

Comments:

- Big Wheeling Creek @ Wheeling Staging Area

Type:	Stream/River
County:	Ohio
Owner:	Fulton Storage, LLC
Intake Latitude:	40.077019
Intake Longitude:	-80.713866
HUC-8 Code:	5030106
Drainage Area (sq miles):	296.04
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	43.57
Minimum Passby (cfs):	40.03
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Booths Creek @ Reliance Minerals

Type:	Stream/River
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Intake Latitude:	39.530405
Intake Longitude:	-79.978079
HUC-8 Code:	5020003
Drainage Area (sq miles):	1.79
Regulated Stream:	NO
PWS Within 1 Mile:	YES Morgantown Utility Board

Gauged Stream:	NO
Ref Gauge ID:	3062500
Ref Gauge Name:	DECKERS CREEK AT MORGANTOWN, WV
Minimum Gauge Reading (cfs):	18.65
Minimum Passby (cfs):	.48
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Buffalo Creek @ Bethany VFD Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Bethany Pike Volunteer Fire Department
Intake Latitude:	40.253422
Intake Longitude:	-80.600319
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	67.66
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate	3100

PWS Within 1 Mile:	NO	(gpm):	

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Buffalo Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.19386
Intake Longitude:	-80.525796
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	54.63
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3200

Comments:

- Buffalo Creek @ Forney

Type:	Stream/River
County:	Brooke
Owner:	Forney & Sons Holding Company, LLC
Intake Latitude:	40.193453
Intake Longitude:	-80.52175
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Fuchs

Type:	Stream/River
County:	Brooke
Owner:	Beverly Fuchs
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate	5250

(gpm):	

Comments:

- Buffalo Creek @ Greathouse Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Linda Greathouse
Intake Latitude:	40.20895
Intake Longitude:	-80.60105
HUC-8 Code:	5030106
Drainage Area (sq miles):	138.56
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	60.42
Minimum Passby (cfs):	54.51
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3300

Comments:

- Buffalo Creek @ Labelle Farms

Type:	Stream/River
County:	Brooke
Owner:	Steve Paul
Intake Latitude:	40.204444
Intake Longitude:	-80.598645
HUC-8 Code:	5030106
Drainage Area (sq miles):	136.79
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	59.2
Minimum Passby (cfs):	53.8
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Buffalo Creek @ WVDOH

Type:	Stream/River
County:	Brooke
Owner:	West Virginia Division of Highways
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES

Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Maximum Pump Rate (gpm):	3360

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Buffalo Creek @ Worthley Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Kimberly C. Worthley
Intake Latitude:	40.210978
Intake Longitude:	-80.548779
HUC-8 Code:	5030106
Drainage Area (sq miles):	113.49
Regulated Stream:	NO
PWS Within 1 Mile:	YES Hammond PSD

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	44.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Zatta

Type:	Stream/River
County:	Brooke
Owner:	Edward Zatta
Intake Latitude:	40.253588
Intake Longitude:	-80.600254
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	66.37
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Cross Creek @ Bullock Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Isabelle Bullock
Intake Latitude:	40.30735
Intake Longitude:	-80.569317
HUC-8 Code:	5030101
Drainage Area (sq	74.66

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	19.32
Minimum Passby (cfs):	20.99
Endangered Species:	NO

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Cross Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.300536
Intake Longitude:	-80.542229
HUC-8 Code:	5030101
Drainage Area (sq miles):	68.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	22.44
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Cross Creek @ Norfolk and Western Railway

Type:	Stream/River
County:	Brooke
Owner:	Wheeling & Lake Erie Railway Company
Intake Latitude:	40.30802
Intake Longitude:	-80.599193
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Cross Creek @ Palizzi

Type:	Stream/River
County:	Brooke
Owner:	Campbell Palizzi
Intake Latitude:	40.302427

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading	23.11

Intake Longitude:	-80.582753
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	NO
PWS Within 1 Mile:	NO

(cfs):	
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Fish Creek @ Gribben

Type:	Stream/River
County:	Marshall
Owner:	Revocable Living Trust of M. Peggy Gribben
Intake Latitude:	39.753271
Intake Longitude:	-80.597913
HUC-8 Code:	5030106
Drainage Area (sq miles):	141.61
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	23.94
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Fish Creek @ Guzek

Type:	Stream/River
County:	Marshall
Owner:	Walter A. Guzek
Intake Latitude:	39.753021
Intake Longitude:	-80.613941
HUC-8 Code:	5030106
Drainage Area (sq miles):	144.57
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	24.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Little Wheeling Creek @ Edge Withdrawal Site

Type:	Stream/River

Gauged Stream:	NO

County:	Ohio
Owner:	Alice Mae Edge
Intake Latitude:	40.098
Intake Longitude:	-80.5558
HUC-8 Code:	5030106
Drainage Area (sq miles):	4.26
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Little Wheeling Creek @ Main Street Bank

Type:	Stream/River
County:	Ohio
Owner:	Main Street Bank
Intake Latitude:	40.064076
Intake Longitude:	-80.614406
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	23
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Little Wheeling Creek @ Rt. 40 Staging Area

Type:	Stream/River
County:	Ohio
Owner:	JDS Investments, LLC
Intake Latitude:	40.078324
Intake Longitude:	-80.591145
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	64.8
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Gribben

Type:	Stream/River
County:	Ohio

Gauged Stream:	NO
Ref Gauge ID:	3112000

Owner:	Lawrence Kevin Gribber
Intake Latitude:	40.036777
Intake Longitude:	-80.598008
HUC-8 Code:	5030106
Drainage Area (sq miles):	30.81
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	6.26
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Supler

Type:	Stream/River
County:	Ohio
Owner:	Gregory and Peggy Supler
Intake Latitude:	40.04409
Intake Longitude:	-80.55348
HUC-8 Code:	5030106
Drainage Area (sq miles):	20.54
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	62.57
Minimum Passby (cfs):	4.17
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Ohio River @ Extraction B Panhandle

Type:	Stream/River
County:	Brooke
Owner:	SWN Production Company, LLC
Intake Latitude:	40.233469
Intake Longitude:	-80.654359
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4375

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Proctor Peacemaker

Type:	Stream/River
County:	Wetzel
Owner:	SWN Production Company, LLC
Intake Latitude:	39.714299
Intake Longitude:	-80.825862
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	6000

Comments:

Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Paw Paw Creek @ Horizon Ventures

Type:	Stream/River
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Intake Latitude:	39.552426
Intake Longitude:	-80.166833
HUC-8 Code:	5020003
Drainage Area (sq miles):	28.34
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	26.96
Minimum Passby (cfs):	4.57
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Short Creek @ Cain

Type:	Stream/River
County:	Ohio
Owner:	Susan L. Cain
Intake Latitude:	40.155061
Intake Longitude:	-80.651431
HUC-8 Code:	5030106
Drainage Area (sq miles):	16.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	64.49
Minimum Passby (cfs):	7.68
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	3360

Comments:

- WV Fork Fish Creek @ Derby

Type:	Stream/River
County:	Wetzel
Owner:	Steven Derby
Intake Latitude:	39.709329
Intake Longitude:	-80.536079
HUC-8 Code:	5030106
Drainage Area (sq miles):	48.62
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	52.24
Minimum Passby (cfs):	8.21
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- WV Fork Fish Creek @ Francis

Type:	Stream/River
County:	Marshall
Owner:	Loretta J. Francis
Intake Latitude:	39.733295
Intake Longitude:	-80.579415
HUC-8 Code:	5030106
Drainage Area (sq miles):	86.51
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	63.69
Minimum Passby (cfs):	17.55
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.94 cfs (0.51 ft on upstream staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- WV Fork of Fish Creek @ Van Scyoc Withdrawal Site

Type:	Stream/River
County:	Wetzel
Owner:	Israel D Van Scyoc
Intake Latitude:	39.6908
Intake Longitude:	-80.4762
HUC-8 Code:	5030106
Drainage Area (sq miles):	21.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	5.45
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Wheeling Creek @ Iskcon

Type:	Stream/River
County:	Marshall
Owner:	Iskcon New Vrindaban, Inc.
Intake Latitude:	39.967973
Intake Longitude:	-80.599241
HUC-8 Code:	5030106
Drainage Area (sq miles):	189.6
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Wheeling Creek @ Schafer

Type:	Stream/River
County:	Marshall
Owner:	Betty Jane Schafer
Intake Latitude:	39.99257
Intake Longitude:	-80.634912
HUC-8 Code:	5030106
Drainage Area (sq miles):	203.38
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.7
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Wheeling Creek @ Sligar

Type:	Stream/River
County:	Marshall
Owner:	Terry Sligar
Intake Latitude:	40.013185
Intake Longitude:	-80.652863
HUC-8 Code:	5030106
Drainage Area (sq miles):	211.8
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	28.64
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 20.92 cfs (1.00 ft on upstream staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded. This site shall not be operated concurrently with the Wheeling Creek @ Schafer location or Wheeling Creek @ Iskcon site.

- Whiteday Creek @ Sorine Withdrawal Site

Type:	Stream/River
County:	Marion
Owner:	Andrew Sorine, Jr.
Intake Latitude:	39.472311
Intake Longitude:	-79.977123
HUC-8 Code:	5020003
Drainage Area (sq miles):	12.29
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	20.25
Minimum Passby (cfs):	2.29
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Adrian Public Service District

Type:	Purchased Water
County:	Upshur
Owner:	Adrian Public Service District
Intake Latitude:	38.9775
Intake Longitude:	-80.22083
HUC-8 Code:	5020001
Drainage Area (sq miles):	197.33
Regulated Stream:	YES
PWS Within 1 Mile:	YES City of Buckhannon Water Plant

Gauged Stream:	YES
Ref Gauge ID:	3054500
Ref Gauge Name:	TYGART VALLEY RIVER AT PHILIPPI, WV
Minimum Gauge Reading (cfs):	155.85
Minimum Passby (cfs):	75.51
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:

- American Petroleum Partners (Wheeling Creek @ Wilson)

Type:	Purchased Water
County:	Marshall
Owner:	American Petroleum Partners, LLC
Intake Latitude:	39.975882
Intake Longitude:	-80.62967
HUC-8 Code:	5030106

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	26.09
Endangered Species:	NO

Drainage Area (sq miles):	192.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- Covestro, LLC

Type:	Purchased Water
County:	Marshall
Owner:	Covestro, LLC
Intake Latitude:	39.7218
Intake Longitude:	-80.830231
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Elite Gasfield Services

Type:	Purchased Water
County:	Brooke
Owner:	Elite Gasfield Services
Intake Latitude:	40.32667
Intake Longitude:	-80.59861
HUC-8 Code:	5030101
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES City of Follansbee

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Grandview-Doolin PSD

Type:	Purchased Water
County:	Wetzel
Owner:	Grandview-Doolin Public Service District

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock &

Intake Latitude:	39.71361
Intake Longitude:	-80.82583
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

	Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Marshall County Public Service District 3

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #3
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Tap Location is: (39.906400, -80.586200)

- Marshall County Public Service District 4

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #4
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Ohio County PSD

Type:	Purchased Water
County:	Ohio
Owner:	Ohio county PSD
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ 4K Industrial Park

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Intake Latitude:	40.098805
Intake Longitude:	-80.711328
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ J&R Excavating

Type:	Purchased Water
County:	Marshall
Owner:	J&R Excavating
Intake Latitude:	39.998509
Intake Longitude:	-80.737336
HUC-8 Code:	5030106

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading	6468

Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

(cfs):	
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Oasis Transport Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Oasis Transport, LLC
Intake Latitude:	40.331551
Intake Longitude:	-80.601034
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Range Tap @ Corbin Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Range Resources Corp.
Intake Latitude:	40.229983
Intake Longitude:	-80.521067
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- The Village of Valley Grove

Type:	Purchased Water
County:	Ohio
Owner:	The Village of Valley Grove
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Valley Falls PSD

Type:	Purchased Water
County:	Marion
Owner:	Valley Falls PSD
Intake Latitude:	39.45889
Intake Longitude:	-80.15583
HUC-8 Code:	5020001
Drainage Area (sq miles):	1367.05
Regulated Stream:	YES Tygart Valley Dam
PWS Within 1 Mile:	YES City of Fairmont

Gauged Stream:	YES
Ref Gauge ID:	3057000
Ref Gauge Name:	TYGART VALLEY RIVER AT COLFAX, WV
Minimum Gauge Reading (cfs):	397.39
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #1 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.95205
Intake Longitude:	-80.56189
HUC-8 Code:	5030106
Drainage Area (sq miles):	156.06
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.63
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #2 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.949578
Intake Longitude:	-80.531256
HUC-8 Code:	5030106
Drainage Area (sq miles):	152.4
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.24
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Water Department

Type:	Purchased Water
County:	Ohio
Owner:	Wheeling Water Department
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Shoemaker Groundwater Wells @ HG Energy

Type:	Ground Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	40.0222
Intake Longitude:	-80.733888
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO

PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	800

Comments:
This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals.
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Secondary Sources

For each proposed secondary water source identified in your water management plan (i.e. groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow and quality-tested by the operator at the request of the drinking well owner prior to the operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.
- The use of recycled frac water is always encouraged.

- 4K Industrial Park, LLC

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Source Latitude:	40.100395
Source Longitude:	-80.71269
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Ballato Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Nick Ballato and Christopher Ballato
Source Latitude:	40.308611
Source Longitude:	-80.565028
Reference WMP:	1877

Comments:

- Barry Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Barry Greathouse
Source Latitude:	40.18831
Source Longitude:	-80.63714
Reference WMP:	1869

Comments:

- Columbia Gas Transmission (TCO Elson) FWI

Type:	Purchased Water
County:	Marshall
Owner:	Columbia Gas Transmission, LLC.
Source Latitude:	39.75398
Source Longitude:	-80.613604
Reference WMP:	547

Comments:

- Corbin Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Margaret Corbin
Source Latitude:	40.233122
Source Longitude:	-80.524025
Reference WMP:	1870

Comments:

- Durig A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	39.715905
Source Longitude:	-80.636785
Reference WMP:	1862

Comments:

- Durig B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig

Source Latitude:	38.8022
Source Longitude:	-80.638491
Reference WMP:	1863

Comments:

- Elite Gasfield Services, Midland Borough

Type:	Purchased Water
County:	Beaver, PA
Owner:	Elite Gasfield Services
Source Latitude:	40.644598
Source Longitude:	-80.469382
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Elmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Charles and Thomas Elmer
Source Latitude:	38.831351
Source Longitude:	-80.276326
Reference WMP:	1847

Comments:

- Equitrans Water Services, LLC Cook Impoundment

Type:	Purchased Water
County:	Greene, PA
Owner:	Equitrans Water Services, LLC
Source Latitude:	39.817197
Source Longitude:	-80.477956
Reference WMP:	

Comments:
PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PA DEP.

- Farmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Clarence Farmer
Source Latitude:	40.146183

Source Longitude:	-80.573857
Reference WMP:	1871

Comments:

- Ferrell Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Kevin Ferrell
Source Latitude:	40.04445
Source Longitude:	-80.53023
Reference WMP:	1874

Comments:

- Grant Town Water

Type:	Purchased Water
County:	Marion
Owner:	Town of Grant Town
Source Latitude:	39.559407
Source Longitude:	-80.172893
Reference WMP:	

Comments:
@ Horizon Ventures Withdrawal Location

- Heartwood Forestland Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ritchie
Owner:	Wanda Bartlett
Source Latitude:	39.123961
Source Longitude:	-81.098573
Reference WMP:	1878

Comments:

- Helen Miller Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Helen J. Miller
Source Latitude:	40.085722
Source Longitude:	-80.623333
Reference WMP:	1059

Comments:

- Hickman Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Mark Hickman et al
Source Latitude:	40.041361
Source Longitude:	-80.548944
Reference WMP:	1875

Comments:

- Hieronimus #1 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.811
Source Longitude:	-80.5212
Reference WMP:	1856

Comments:

- Hieronimus #2 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8149
Source Longitude:	-80.5233
Reference WMP:	1857

Comments:

- Hieronimus #3 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8162
Source Longitude:	-80.5266
Reference WMP:	1761

Comments:

- Hieronimus #4 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra

	Hieronimus
Source Latitude:	39.8198
Source Longitude:	-80.5295
Reference WMP:	1858

Comments:

- Hupp 1 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Hupp
Source Latitude:	40.175058
Source Longitude:	-80.567622
Reference WMP:	1873

Comments:

- Hupp 2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Wylie Hupp
Source Latitude:	40.175069
Source Longitude:	-80.578206
Reference WMP:	1058

Comments:

- Hydro Recovery, LP

Type:	Purchased Water
County:	Washington, PA
Owner:	Hydro Recovery, LP - Burgettstown
Source Latitude:	40.419251
Source Longitude:	-80.422684
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Kelley #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Margaret Sue Kelley
Source Latitude:	39.681388
Source Longitude:	-80.701113

Reference WMP:	1865

Comments:

- Kestner Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Gary Kestner
Source Latitude:	40.147904
Source Longitude:	-80.539568
Reference WMP:	1872

Comments:

- Linda Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Linda Greathouse
Source Latitude:	40.205416
Source Longitude:	-80.608805
Reference WMP:	1876

Comments:

- Lipps Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Ralph and Opal Lipps
Source Latitude:	38.8446
Source Longitude:	-80.3413
Reference WMP:	1850

Comments:

- McGlumphy Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Steven M. McGlumphy
Source Latitude:	40.152588
Source Longitude:	-80.587667
Reference WMP:	1060

Comments:

- Messenger Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Chesapeake Energy
Source Latitude:	393674857
Source Longitude:	-80.689887
Reference WMP:	1859

Comments:

- Pennsylvania American Water

Type:	Purchased Water
County:	
Owner:	Pennsylvania American Water
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Raw Water Pond @ Horizon Ventures

Type:	Purchased Water
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Source Latitude:	39.5535
Source Longitude:	-80.16742
Reference WMP:	

Comments:

- Recycled Frac Water

Type:	Recycled Frac Water
County:	
Owner:	
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Treated and recycled flowback/produced water sources may include, but are not limited to this well pad.

- Reliance Minerals A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia

Owner:	Reliance Minerals, Inc.
Source Latitude:	39.521316
Source Longitude:	-79.973907
Reference WMP:	1868

Comments:

- Reliance Minerals B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.524571
Source Longitude:	-79.974529
Reference WMP:	1867

Comments:

- Robinson Fork @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy II Appalachia, LLC.
Source Latitude:	39.979222
Source Longitude:	-80.487472
Reference WMP:	

Comments:

- Ross #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Mike Ross
Source Latitude:	38.9839
Source Longitude:	-80.2628
Reference WMP:	1851

Comments:

- Stern Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Marshall
Owner:	Alton and Mary Stern
Source Latitude:	39.733943
Source Longitude:	-80.64695
Reference WMP:	1826

Comments:

- WFN Impoundment A @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy, LLC
Source Latitude:	39.991417
Source Longitude:	-80.488694
Reference WMP:	

Comments:

- WFN Impoundment B @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy
Source Latitude:	39.991917
Source Longitude:	-80.4965
Reference WMP:	

Comments:

- Washington Pike PSD @ Brook Hills Park

Type:	Purchased Water
County:	Brooke
Owner:	Washington Pike PSD
Source Latitude:	40.26632
Source Longitude:	-80.543592
Reference WMP:	

Comments:

- Worthley Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Kimberly Worthley
Source Latitude:	40.216869
Source Longitude:	-80.548592
Reference WMP:	1061

Comments:

Water Management Plan

Action: Modified **Effective Date:** 4/22/2022
Operator: SWN Production Company, LLC
WMP ID: 1967
Plan Type: Well Pad
Facility Name: OCC A OHI Well Pad
County: Ohio
Lat: 40.079503
Long: -80.59804

APPROVED
By Dawn Newell at 10:38 am, 4/22/22

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supersedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

Api	Wellname
047-069-00137	OCC A OHI 10H
047-069-00239	OCC A OHI 5H
047-069-00241	OCC A OHI 205H
047-069-00245	OCC A OHI 8H
047-069-00261	OCC A OHI 6H
047-069-00269	OCC A OHI 405H
047-069-00340	OCC A OHI 1H
047-069-00341	OCC A OHI 201H
047-069-00342	OCC A OHI 401H
047-069-00343	OCC A OHI 601H

The following water consumption estimates (in gallons) have been reported for this plan.

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	28,823,760
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activities:	210,000
Total for Well Pad:	29,873,760

Primary Sources

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and enforceable as such.

For any source identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this Water Management Plan.

- Big Wheeling Creek @ Hogg

Type:	Stream/River
County:	Marshall
Owner:	Don Hogg
Intake Latitude:	39.984529
Intake Longitude:	-80.634106
HUC-8 Code:	5030106
Drainage Area (sq miles):	201.69

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.23
Minimum Passby (cfs):	27.28
Endangered Species:	NO

Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	5040

Comments:

- Big Wheeling Creek @ Wheeling Staging Area

Type:	Stream/River
County:	Ohio
Owner:	Fulton Storage, LLC
Intake Latitude:	40.077019
Intake Longitude:	-80.713866
HUC-8 Code:	5030106
Drainage Area (sq miles):	296.04
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	43.57
Minimum Passby (cfs):	40.03
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Booths Creek @ Reliance Minerals

Type:	Stream/River
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Intake Latitude:	39.530405
Intake Longitude:	-79.978079
HUC-8 Code:	5020003
Drainage Area (sq miles):	1.79
Regulated Stream:	NO
PWS Within 1 Mile:	YES Morgantown Utility Board

Gauged Stream:	NO
Ref Gauge ID:	3062500
Ref Gauge Name:	DECKERS CREEK AT MORGANTOWN, WV
Minimum Gauge Reading (cfs):	18.65
Minimum Passby (cfs):	.48
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Buffalo Creek @ Bethany VFD Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Bethany Pike Volunteer Fire Department
Intake Latitude:	40.253422
Intake Longitude:	-80.600319
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	67.66
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate	3100

PWS Within 1 Mile:	NO	(gpm):	

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Buffalo Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.19386
Intake Longitude:	-80.525796
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	54.63
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3200

Comments:

- Buffalo Creek @ Forney

Type:	Stream/River
County:	Brooke
Owner:	Forney & Sons Holding Company, LLC
Intake Latitude:	40.193453
Intake Longitude:	-80.52175
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Fuchs

Type:	Stream/River
County:	Brooke
Owner:	Beverly Fuchs
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate	5250

(gpm):	

Comments:

- Buffalo Creek @ Greathouse Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Linda Greathouse
Intake Latitude:	40.20895
Intake Longitude:	-80.60105
HUC-8 Code:	5030106
Drainage Area (sq miles):	138.56
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	60.42
Minimum Passby (cfs):	54.51
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3300

Comments:

- Buffalo Creek @ Labelle Farms

Type:	Stream/River
County:	Brooke
Owner:	Steve Paul
Intake Latitude:	40.204444
Intake Longitude:	-80.598645
HUC-8 Code:	5030106
Drainage Area (sq miles):	136.79
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	59.2
Minimum Passby (cfs):	53.8
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Buffalo Creek @ WVDOH

Type:	Stream/River
County:	Brooke
Owner:	West Virginia Division of Highways
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES

Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Maximum Pump Rate (gpm):	3360

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Buffalo Creek @ Worthley Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Kimberly C. Worthley
Intake Latitude:	40.210978
Intake Longitude:	-80.548779
HUC-8 Code:	5030106
Drainage Area (sq miles):	113.49
Regulated Stream:	NO
PWS Within 1 Mile:	YES Hammond PSD

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	44.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Zatta

Type:	Stream/River
County:	Brooke
Owner:	Edward Zatta
Intake Latitude:	40.253588
Intake Longitude:	-80.600254
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	66.37
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Cross Creek @ Bullock Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Isabelle Bullock
Intake Latitude:	40.30735
Intake Longitude:	-80.569317
HUC-8 Code:	5030101
Drainage Area (sq	74.66

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	19.32
Minimum Passby (cfs):	20.99
Endangered Species:	NO

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Cross Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.300536
Intake Longitude:	-80.542229
HUC-8 Code:	5030101
Drainage Area (sq miles):	68.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	22.44
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Cross Creek @ Norfolk and Western Railway

Type:	Stream/River
County:	Brooke
Owner:	Wheeling & Lake Erie Railway Company
Intake Latitude:	40.30802
Intake Longitude:	-80.599193
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Cross Creek @ Palizzi

Type:	Stream/River
County:	Brooke
Owner:	Campbell Palizzi
Intake Latitude:	40.302427

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading	23.11

Intake Longitude:	-80.582753
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	NO
PWS Within 1 Mile:	NO

(cfs):	
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Fish Creek @ Gribben

Type:	Stream/River
County:	Marshall
Owner:	Revocable Living Trust of M. Peggy Gribben
Intake Latitude:	39.753271
Intake Longitude:	-80.597913
HUC-8 Code:	5030106
Drainage Area (sq miles):	141.61
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	23.94
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Fish Creek @ Guzek

Type:	Stream/River
County:	Marshall
Owner:	Walter A. Guzek
Intake Latitude:	39.753021
Intake Longitude:	-80.613941
HUC-8 Code:	5030106
Drainage Area (sq miles):	144.57
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	24.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Little Wheeling Creek @ Edge Withdrawal Site

Type:	Stream/River

Gauged Stream:	NO

County:	Ohio
Owner:	Alice Mae Edge
Intake Latitude:	40.098
Intake Longitude:	-80.5558
HUC-8 Code:	5030106
Drainage Area (sq miles):	4.26
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Little Wheeling Creek @ Main Street Bank

Type:	Stream/River
County:	Ohio
Owner:	Main Street Bank
Intake Latitude:	40.064076
Intake Longitude:	-80.614406
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	23
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Little Wheeling Creek @ Rt. 40 Staging Area

Type:	Stream/River
County:	Ohio
Owner:	JDS Investments, LLC
Intake Latitude:	40.078324
Intake Longitude:	-80.591145
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	64.8
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Gribben

Type:	Stream/River
County:	Ohio

Gauged Stream:	NO
Ref Gauge ID:	3112000

Owner:	Lawrence Kevin Gribber
Intake Latitude:	40.036777
Intake Longitude:	-80.598008
HUC-8 Code:	5030106
Drainage Area (sq miles):	30.81
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	6.26
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Supler

Type:	Stream/River
County:	Ohio
Owner:	Gregory and Peggy Supler
Intake Latitude:	40.04409
Intake Longitude:	-80.55348
HUC-8 Code:	5030106
Drainage Area (sq miles):	20.54
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	62.57
Minimum Passby (cfs):	4.17
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Ohio River @ Extraction B Panhandle

Type:	Stream/River
County:	Brooke
Owner:	SWN Production Company, LLC
Intake Latitude:	40.233469
Intake Longitude:	-80.654359
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4375

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Proctor Peacemaker

Type:	Stream/River
County:	Wetzel
Owner:	SWN Production Company, LLC
Intake Latitude:	39.714299
Intake Longitude:	-80.825862
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	6000

Comments:

Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Paw Paw Creek @ Horizon Ventures

Type:	Stream/River
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Intake Latitude:	39.552426
Intake Longitude:	-80.166833
HUC-8 Code:	5020003
Drainage Area (sq miles):	28.34
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	26.96
Minimum Passby (cfs):	4.57
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Short Creek @ Cain

Type:	Stream/River
County:	Ohio
Owner:	Susan L. Cain
Intake Latitude:	40.155061
Intake Longitude:	-80.651431
HUC-8 Code:	5030106
Drainage Area (sq miles):	16.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	64.49
Minimum Passby (cfs):	7.68
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	3360

Comments:

- WV Fork Fish Creek @ Derby

Type:	Stream/River
County:	Wetzel
Owner:	Steven Derby
Intake Latitude:	39.709329
Intake Longitude:	-80.536079
HUC-8 Code:	5030106
Drainage Area (sq miles):	48.62
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	52.24
Minimum Passby (cfs):	8.21
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- WV Fork Fish Creek @ Francis

Type:	Stream/River
County:	Marshall
Owner:	Loretta J. Francis
Intake Latitude:	39.733295
Intake Longitude:	-80.579415
HUC-8 Code:	5030106
Drainage Area (sq miles):	86.51
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	63.69
Minimum Passby (cfs):	17.55
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.94 cfs (0.51 ft on upstream staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- WV Fork of Fish Creek @ Van Scyoc Withdrawal Site

Type:	Stream/River
County:	Wetzel
Owner:	Israel D Van Scyoc
Intake Latitude:	39.6908
Intake Longitude:	-80.4762
HUC-8 Code:	5030106
Drainage Area (sq miles):	21.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	5.45
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Wheeling Creek @ Iskcon

Type:	Stream/River
County:	Marshall
Owner:	Iskcon New Vrindaban, Inc.
Intake Latitude:	39.967973
Intake Longitude:	-80.599241
HUC-8 Code:	5030106
Drainage Area (sq miles):	189.6
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Wheeling Creek @ Schafer

Type:	Stream/River
County:	Marshall
Owner:	Betty Jane Schafer
Intake Latitude:	39.99257
Intake Longitude:	-80.634912
HUC-8 Code:	5030106
Drainage Area (sq miles):	203.38
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.7
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Wheeling Creek @ Sligar

Type:	Stream/River
County:	Marshall
Owner:	Terry Sligar
Intake Latitude:	40.013185
Intake Longitude:	-80.652863
HUC-8 Code:	5030106
Drainage Area (sq miles):	211.8
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	28.64
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 20.92 cfs (1.00 ft on upstream staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded. This site shall not be operated concurrently with the Wheeling Creek @ Schafer location or Wheeling Creek @ Iskcon site.

- Whiteday Creek @ Sorine Withdrawal Site

Type:	Stream/River
County:	Marion
Owner:	Andrew Sorine, Jr.
Intake Latitude:	39.472311
Intake Longitude:	-79.977123
HUC-8 Code:	5020003
Drainage Area (sq miles):	12.29
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	20.25
Minimum Passby (cfs):	2.29
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Adrian Public Service District

Type:	Purchased Water
County:	Upshur
Owner:	Adrian Public Service District
Intake Latitude:	38.9775
Intake Longitude:	-80.22083
HUC-8 Code:	5020001
Drainage Area (sq miles):	197.33
Regulated Stream:	YES
PWS Within 1 Mile:	YES City of Buckhannon Water Plant

Gauged Stream:	YES
Ref Gauge ID:	3054500
Ref Gauge Name:	TYGART VALLEY RIVER AT PHILIPPI, WV
Minimum Gauge Reading (cfs):	155.85
Minimum Passby (cfs):	75.51
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:

- American Petroleum Partners (Wheeling Creek @ Wilson)

Type:	Purchased Water
County:	Marshall
Owner:	American Petroleum Partners, LLC
Intake Latitude:	39.975882
Intake Longitude:	-80.62967
HUC-8 Code:	5030106

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	26.09
Endangered Species:	NO

Drainage Area (sq miles):	192.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- Covestro, LLC

Type:	Purchased Water
County:	Marshall
Owner:	Covestro, LLC
Intake Latitude:	39.7218
Intake Longitude:	-80.830231
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Elite Gasfield Services

Type:	Purchased Water
County:	Brooke
Owner:	Elite Gasfield Services
Intake Latitude:	40.32667
Intake Longitude:	-80.59861
HUC-8 Code:	5030101
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES City of Follansbee

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Grandview-Doolin PSD

Type:	Purchased Water
County:	Wetzel
Owner:	Grandview-Doolin Public Service District

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock &

Intake Latitude:	39.71361
Intake Longitude:	-80.82583
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

	Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Marshall County Public Service District 3

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #3
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Tap Location is: (39.906400, -80.586200)

- Marshall County Public Service District 4

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #4
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Ohio County PSD

Type:	Purchased Water
County:	Ohio
Owner:	Ohio county PSD
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ 4K Industrial Park

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Intake Latitude:	40.098805
Intake Longitude:	-80.711328
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ J&R Excavating

Type:	Purchased Water
County:	Marshall
Owner:	J&R Excavating
Intake Latitude:	39.998509
Intake Longitude:	-80.737336
HUC-8 Code:	5030106

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading	6468

Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

(cfs):	
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Oasis Transport Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Oasis Transport, LLC
Intake Latitude:	40.331551
Intake Longitude:	-80.601034
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Range Tap @ Corbin Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Range Resources Corp.
Intake Latitude:	40.229983
Intake Longitude:	-80.521067
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- The Village of Valley Grove

Type:	Purchased Water
County:	Ohio
Owner:	The Village of Valley Grove
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Valley Falls PSD

Type:	Purchased Water
County:	Marion
Owner:	Valley Falls PSD
Intake Latitude:	39.45889
Intake Longitude:	-80.15583
HUC-8 Code:	5020001
Drainage Area (sq miles):	1367.05
Regulated Stream:	YES Tygart Valley Dam
PWS Within 1 Mile:	YES City of Fairmont

Gauged Stream:	YES
Ref Gauge ID:	3057000
Ref Gauge Name:	TYGART VALLEY RIVER AT COLFAX, WV
Minimum Gauge Reading (cfs):	397.39
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #1 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.95205
Intake Longitude:	-80.56189
HUC-8 Code:	5030106
Drainage Area (sq miles):	156.06
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.63
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #2 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.949578
Intake Longitude:	-80.531256
HUC-8 Code:	5030106
Drainage Area (sq miles):	152.4
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.24
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Water Department

Type:	Purchased Water
County:	Ohio
Owner:	Wheeling Water Department
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Shoemaker Groundwater Wells @ HG Energy

Type:	Ground Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	40.0222
Intake Longitude:	-80.733888
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO

PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	800

Comments:
This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals.
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Secondary Sources

For each proposed secondary water source identified in your water management plan (i.e. groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow and quality-tested by the operator at the request of the drinking well owner prior to the operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.
- The use of recycled frac water is always encouraged.

- 4K Industrial Park, LLC

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Source Latitude:	40.100395
Source Longitude:	-80.71269
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Ballato Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Nick Ballato and Christopher Ballato
Source Latitude:	40.308611
Source Longitude:	-80.565028
Reference WMP:	1877

Comments:

- Barry Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Barry Greathouse
Source Latitude:	40.18831
Source Longitude:	-80.63714
Reference WMP:	1869

Comments:

- Columbia Gas Transmission (TCO Elson) FWI

Type:	Purchased Water
County:	Marshall
Owner:	Columbia Gas Transmission, LLC.
Source Latitude:	39.75398
Source Longitude:	-80.613604
Reference WMP:	547

Comments:

- Corbin Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Margaret Corbin
Source Latitude:	40.233122
Source Longitude:	-80.524025
Reference WMP:	1870

Comments:

- Durig A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	39.715905
Source Longitude:	-80.636785
Reference WMP:	1862

Comments:

- Durig B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig

Source Latitude:	38.8022
Source Longitude:	-80.638491
Reference WMP:	1863

Comments:

- Elite Gasfield Services, Midland Borough

Type:	Purchased Water
County:	Beaver, PA
Owner:	Elite Gasfield Services
Source Latitude:	40.644598
Source Longitude:	-80.469382
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Elmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Charles and Thomas Elmer
Source Latitude:	38.831351
Source Longitude:	-80.276326
Reference WMP:	1847

Comments:

- Equitrans Water Services, LLC Cook Impoundment

Type:	Purchased Water
County:	Greene, PA
Owner:	Equitrans Water Services, LLC
Source Latitude:	39.817197
Source Longitude:	-80.477956
Reference WMP:	

Comments:
PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PA DEP.

- Farmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Clarence Farmer
Source Latitude:	40.146183

Source Longitude:	-80.573857
Reference WMP:	1871

Comments:

- Ferrell Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Kevin Ferrell
Source Latitude:	40.04445
Source Longitude:	-80.53023
Reference WMP:	1874

Comments:

- Grant Town Water

Type:	Purchased Water
County:	Marion
Owner:	Town of Grant Town
Source Latitude:	39.559407
Source Longitude:	-80.172893
Reference WMP:	

Comments:
@ Horizon Ventures Withdrawal Location

- Heartwood Forestland Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ritchie
Owner:	Wanda Bartlett
Source Latitude:	39.123961
Source Longitude:	-81.098573
Reference WMP:	1878

Comments:

- Helen Miller Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Helen J. Miller
Source Latitude:	40.085722
Source Longitude:	-80.623333
Reference WMP:	1059

Comments:

- Hickman Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Mark Hickman et al
Source Latitude:	40.041361
Source Longitude:	-80.548944
Reference WMP:	1875

Comments:

- Hieronimus #1 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.811
Source Longitude:	-80.5212
Reference WMP:	1856

Comments:

- Hieronimus #2 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8149
Source Longitude:	-80.5233
Reference WMP:	1857

Comments:

- Hieronimus #3 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8162
Source Longitude:	-80.5266
Reference WMP:	1761

Comments:

- Hieronimus #4 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra

	Hieronimus
Source Latitude:	39.8198
Source Longitude:	-80.5295
Reference WMP:	1858

Comments:

- Hupp 1 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Hupp
Source Latitude:	40.175058
Source Longitude:	-80.567622
Reference WMP:	1873

Comments:

- Hupp 2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Wylie Hupp
Source Latitude:	40.175069
Source Longitude:	-80.578206
Reference WMP:	1058

Comments:

- Hydro Recovery, LP

Type:	Purchased Water
County:	Washington, PA
Owner:	Hydro Recovery, LP - Burgettstown
Source Latitude:	40.419251
Source Longitude:	-80.422684
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Kelley #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Margaret Sue Kelley
Source Latitude:	39.681388
Source Longitude:	-80.701113

Reference WMP:	1865

Comments:

- Kestner Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Gary Kestner
Source Latitude:	40.147904
Source Longitude:	-80.539568
Reference WMP:	1872

Comments:

- Linda Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Linda Greathouse
Source Latitude:	40.205416
Source Longitude:	-80.608805
Reference WMP:	1876

Comments:

- Lipps Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Ralph and Opal Lipps
Source Latitude:	38.8446
Source Longitude:	-80.3413
Reference WMP:	1850

Comments:

- McGlumphy Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Steven M. McGlumphy
Source Latitude:	40.152588
Source Longitude:	-80.587667
Reference WMP:	1060

Comments:

- Messenger Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Chesapeake Energy
Source Latitude:	393674857
Source Longitude:	-80.689887
Reference WMP:	1859

Comments:

- Pennsylvania American Water

Type:	Purchased Water
County:	
Owner:	Pennsylvania American Water
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Raw Water Pond @ Horizon Ventures

Type:	Purchased Water
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Source Latitude:	39.5535
Source Longitude:	-80.16742
Reference WMP:	

Comments:

- Recycled Frac Water

Type:	Recycled Frac Water
County:	
Owner:	
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Treated and recycled flowback/produced water sources may include, but are not limited to this well pad.

- Reliance Minerals A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia

Owner:	Reliance Minerals, Inc.
Source Latitude:	39.521316
Source Longitude:	-79.973907
Reference WMP:	1868

Comments:

- Reliance Minerals B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.524571
Source Longitude:	-79.974529
Reference WMP:	1867

Comments:

- Robinson Fork @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy II Appalachia, LLC.
Source Latitude:	39.979222
Source Longitude:	-80.487472
Reference WMP:	

Comments:

- Ross #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Mike Ross
Source Latitude:	38.9839
Source Longitude:	-80.2628
Reference WMP:	1851

Comments:

- Stern Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Marshall
Owner:	Alton and Mary Stern
Source Latitude:	39.733943
Source Longitude:	-80.64695
Reference WMP:	1826

Comments:

- WFN Impoundment A @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy, LLC
Source Latitude:	39.991417
Source Longitude:	-80.488694
Reference WMP:	

Comments:

- WFN Impoundment B @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy
Source Latitude:	39.991917
Source Longitude:	-80.4965
Reference WMP:	

Comments:

- Washington Pike PSD @ Brook Hills Park

Type:	Purchased Water
County:	Brooke
Owner:	Washington Pike PSD
Source Latitude:	40.26632
Source Longitude:	-80.543592
Reference WMP:	

Comments:

- Worthley Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Kimberly Worthley
Source Latitude:	40.216869
Source Longitude:	-80.548592
Reference WMP:	1061

Comments:

Water Management Plan

Action: Modified **Effective Date:** 4/22/2022
Operator: SWN Production Company, LLC
WMP ID: 1967
Plan Type: Well Pad
Facility Name: OCC A OHI Well Pad
County: Ohio
Lat: 40.079503
Long: -80.59804

APPROVED
By Dawn Newell at 10:38 am, 4/22/22

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supersedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

Api	Wellname
047-069-00137	OCC A OHI 10H
047-069-00239	OCC A OHI 5H
047-069-00241	OCC A OHI 205H
047-069-00245	OCC A OHI 8H
047-069-00261	OCC A OHI 6H
047-069-00269	OCC A OHI 405H
047-069-00340	OCC A OHI 1H
047-069-00341	OCC A OHI 201H
047-069-00342	OCC A OHI 401H
047-069-00343	OCC A OHI 601H

The following water consumption estimates (in gallons) have been reported for this plan.

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	28,823,760
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activities:	210,000
Total for Well Pad:	29,873,760

Primary Sources

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and enforceable as such.

For any source identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this Water Management Plan.

- Big Wheeling Creek @ Hogg

Type:	Stream/River
County:	Marshall
Owner:	Don Hogg
Intake Latitude:	39.984529
Intake Longitude:	-80.634106
HUC-8 Code:	5030106
Drainage Area (sq miles):	201.69

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.23
Minimum Passby (cfs):	27.28
Endangered Species:	NO

Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	5040

Comments:

- Big Wheeling Creek @ Wheeling Staging Area

Type:	Stream/River
County:	Ohio
Owner:	Fulton Storage, LLC
Intake Latitude:	40.077019
Intake Longitude:	-80.713866
HUC-8 Code:	5030106
Drainage Area (sq miles):	296.04
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	43.57
Minimum Passby (cfs):	40.03
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Booths Creek @ Reliance Minerals

Type:	Stream/River
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Intake Latitude:	39.530405
Intake Longitude:	-79.978079
HUC-8 Code:	5020003
Drainage Area (sq miles):	1.79
Regulated Stream:	NO
PWS Within 1 Mile:	YES Morgantown Utility Board

Gauged Stream:	NO
Ref Gauge ID:	3062500
Ref Gauge Name:	DECKERS CREEK AT MORGANTOWN, WV
Minimum Gauge Reading (cfs):	18.65
Minimum Passby (cfs):	.48
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Buffalo Creek @ Bethany VFD Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Bethany Pike Volunteer Fire Department
Intake Latitude:	40.253422
Intake Longitude:	-80.600319
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	67.66
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate	3100

PWS Within 1 Mile:	NO	(gpm):	

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Buffalo Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.19386
Intake Longitude:	-80.525796
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	54.63
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3200

Comments:

- Buffalo Creek @ Forney

Type:	Stream/River
County:	Brooke
Owner:	Forney & Sons Holding Company, LLC
Intake Latitude:	40.193453
Intake Longitude:	-80.52175
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Fuchs

Type:	Stream/River
County:	Brooke
Owner:	Beverly Fuchs
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate	5250

(gpm):	

Comments:

- Buffalo Creek @ Greathouse Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Linda Greathouse
Intake Latitude:	40.20895
Intake Longitude:	-80.60105
HUC-8 Code:	5030106
Drainage Area (sq miles):	138.56
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	60.42
Minimum Passby (cfs):	54.51
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3300

Comments:

- Buffalo Creek @ Labelle Farms

Type:	Stream/River
County:	Brooke
Owner:	Steve Paul
Intake Latitude:	40.204444
Intake Longitude:	-80.598645
HUC-8 Code:	5030106
Drainage Area (sq miles):	136.79
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	59.2
Minimum Passby (cfs):	53.8
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Buffalo Creek @ WVDOH

Type:	Stream/River
County:	Brooke
Owner:	West Virginia Division of Highways
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES

Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Maximum Pump Rate (gpm):	3360

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Buffalo Creek @ Worthley Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Kimberly C. Worthley
Intake Latitude:	40.210978
Intake Longitude:	-80.548779
HUC-8 Code:	5030106
Drainage Area (sq miles):	113.49
Regulated Stream:	NO
PWS Within 1 Mile:	YES Hammond PSD

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	44.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Zatta

Type:	Stream/River
County:	Brooke
Owner:	Edward Zatta
Intake Latitude:	40.253588
Intake Longitude:	-80.600254
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	66.37
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Cross Creek @ Bullock Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Isabelle Bullock
Intake Latitude:	40.30735
Intake Longitude:	-80.569317
HUC-8 Code:	5030101
Drainage Area (sq	74.66

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	19.32
Minimum Passby (cfs):	20.99
Endangered Species:	NO

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Cross Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.300536
Intake Longitude:	-80.542229
HUC-8 Code:	5030101
Drainage Area (sq miles):	68.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	22.44
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Cross Creek @ Norfolk and Western Railway

Type:	Stream/River
County:	Brooke
Owner:	Wheeling & Lake Erie Railway Company
Intake Latitude:	40.30802
Intake Longitude:	-80.599193
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Cross Creek @ Palizzi

Type:	Stream/River
County:	Brooke
Owner:	Campbell Palizzi
Intake Latitude:	40.302427

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading	23.11

Intake Longitude:	-80.582753
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	NO
PWS Within 1 Mile:	NO

(cfs):	
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Fish Creek @ Gribben

Type:	Stream/River
County:	Marshall
Owner:	Revocable Living Trust of M. Peggy Gribben
Intake Latitude:	39.753271
Intake Longitude:	-80.597913
HUC-8 Code:	5030106
Drainage Area (sq miles):	141.61
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	23.94
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Fish Creek @ Guzek

Type:	Stream/River
County:	Marshall
Owner:	Walter A. Guzek
Intake Latitude:	39.753021
Intake Longitude:	-80.613941
HUC-8 Code:	5030106
Drainage Area (sq miles):	144.57
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	24.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Little Wheeling Creek @ Edge Withdrawal Site

Type:	Stream/River

Gauged Stream:	NO

County:	Ohio
Owner:	Alice Mae Edge
Intake Latitude:	40.098
Intake Longitude:	-80.5558
HUC-8 Code:	5030106
Drainage Area (sq miles):	4.26
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Little Wheeling Creek @ Main Street Bank

Type:	Stream/River
County:	Ohio
Owner:	Main Street Bank
Intake Latitude:	40.064076
Intake Longitude:	-80.614406
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	23
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Little Wheeling Creek @ Rt. 40 Staging Area

Type:	Stream/River
County:	Ohio
Owner:	JDS Investments, LLC
Intake Latitude:	40.078324
Intake Longitude:	-80.591145
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	64.8
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Gribben

Type:	Stream/River
County:	Ohio

Gauged Stream:	NO
Ref Gauge ID:	3112000

Owner:	Lawrence Kevin Gribber
Intake Latitude:	40.036777
Intake Longitude:	-80.598008
HUC-8 Code:	5030106
Drainage Area (sq miles):	30.81
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	6.26
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Supler

Type:	Stream/River
County:	Ohio
Owner:	Gregory and Peggy Supler
Intake Latitude:	40.04409
Intake Longitude:	-80.55348
HUC-8 Code:	5030106
Drainage Area (sq miles):	20.54
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	62.57
Minimum Passby (cfs):	4.17
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Ohio River @ Extraction B Panhandle

Type:	Stream/River
County:	Brooke
Owner:	SWN Production Company, LLC
Intake Latitude:	40.233469
Intake Longitude:	-80.654359
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4375

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Proctor Peacemaker

Type:	Stream/River
County:	Wetzel
Owner:	SWN Production Company, LLC
Intake Latitude:	39.714299
Intake Longitude:	-80.825862
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	6000

Comments:

Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Paw Paw Creek @ Horizon Ventures

Type:	Stream/River
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Intake Latitude:	39.552426
Intake Longitude:	-80.166833
HUC-8 Code:	5020003
Drainage Area (sq miles):	28.34
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	26.96
Minimum Passby (cfs):	4.57
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Short Creek @ Cain

Type:	Stream/River
County:	Ohio
Owner:	Susan L. Cain
Intake Latitude:	40.155061
Intake Longitude:	-80.651431
HUC-8 Code:	5030106
Drainage Area (sq miles):	16.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	64.49
Minimum Passby (cfs):	7.68
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	3360

Comments:

- WV Fork Fish Creek @ Derby

Type:	Stream/River
County:	Wetzel
Owner:	Steven Derby
Intake Latitude:	39.709329
Intake Longitude:	-80.536079
HUC-8 Code:	5030106
Drainage Area (sq miles):	48.62
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	52.24
Minimum Passby (cfs):	8.21
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- WV Fork Fish Creek @ Francis

Type:	Stream/River
County:	Marshall
Owner:	Loretta J. Francis
Intake Latitude:	39.733295
Intake Longitude:	-80.579415
HUC-8 Code:	5030106
Drainage Area (sq miles):	86.51
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	63.69
Minimum Passby (cfs):	17.55
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.94 cfs (0.51 ft on upstream staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- WV Fork of Fish Creek @ Van Scyoc Withdrawal Site

Type:	Stream/River
County:	Wetzel
Owner:	Israel D Van Scyoc
Intake Latitude:	39.6908
Intake Longitude:	-80.4762
HUC-8 Code:	5030106
Drainage Area (sq miles):	21.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	5.45
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Wheeling Creek @ Iskcon

Type:	Stream/River
County:	Marshall
Owner:	Iskcon New Vrindaban, Inc.
Intake Latitude:	39.967973
Intake Longitude:	-80.599241
HUC-8 Code:	5030106
Drainage Area (sq miles):	189.6
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Wheeling Creek @ Schafer

Type:	Stream/River
County:	Marshall
Owner:	Betty Jane Schafer
Intake Latitude:	39.99257
Intake Longitude:	-80.634912
HUC-8 Code:	5030106
Drainage Area (sq miles):	203.38
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.7
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Wheeling Creek @ Sligar

Type:	Stream/River
County:	Marshall
Owner:	Terry Sligar
Intake Latitude:	40.013185
Intake Longitude:	-80.652863
HUC-8 Code:	5030106
Drainage Area (sq miles):	211.8
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	28.64
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 20.92 cfs (1.00 ft on upstream staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded. This site shall not be operated concurrently with the Wheeling Creek @ Schafer location or Wheeling Creek @ Iskcon site.

- Whiteday Creek @ Sorine Withdrawal Site

Type:	Stream/River
County:	Marion
Owner:	Andrew Sorine, Jr.
Intake Latitude:	39.472311
Intake Longitude:	-79.977123
HUC-8 Code:	5020003
Drainage Area (sq miles):	12.29
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	20.25
Minimum Passby (cfs):	2.29
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Adrian Public Service District

Type:	Purchased Water
County:	Upshur
Owner:	Adrian Public Service District
Intake Latitude:	38.9775
Intake Longitude:	-80.22083
HUC-8 Code:	5020001
Drainage Area (sq miles):	197.33
Regulated Stream:	YES
PWS Within 1 Mile:	YES City of Buckhannon Water Plant

Gauged Stream:	YES
Ref Gauge ID:	3054500
Ref Gauge Name:	TYGART VALLEY RIVER AT PHILIPPI, WV
Minimum Gauge Reading (cfs):	155.85
Minimum Passby (cfs):	75.51
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:

- American Petroleum Partners (Wheeling Creek @ Wilson)

Type:	Purchased Water
County:	Marshall
Owner:	American Petroleum Partners, LLC
Intake Latitude:	39.975882
Intake Longitude:	-80.62967
HUC-8 Code:	5030106

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	26.09
Endangered Species:	NO

Drainage Area (sq miles):	192.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- Covestro, LLC

Type:	Purchased Water
County:	Marshall
Owner:	Covestro, LLC
Intake Latitude:	39.7218
Intake Longitude:	-80.830231
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Elite Gasfield Services

Type:	Purchased Water
County:	Brooke
Owner:	Elite Gasfield Services
Intake Latitude:	40.32667
Intake Longitude:	-80.59861
HUC-8 Code:	5030101
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES City of Follansbee

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Grandview-Doolin PSD

Type:	Purchased Water
County:	Wetzel
Owner:	Grandview-Doolin Public Service District

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock &

Intake Latitude:	39.71361
Intake Longitude:	-80.82583
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

	Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Marshall County Public Service District 3

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #3
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Tap Location is: (39.906400, -80.586200)

- Marshall County Public Service District 4

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #4
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Ohio County PSD

Type:	Purchased Water
County:	Ohio
Owner:	Ohio county PSD
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ 4K Industrial Park

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Intake Latitude:	40.098805
Intake Longitude:	-80.711328
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ J&R Excavating

Type:	Purchased Water
County:	Marshall
Owner:	J&R Excavating
Intake Latitude:	39.998509
Intake Longitude:	-80.737336
HUC-8 Code:	5030106

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading	6468

Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

(cfs):	
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Oasis Transport Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Oasis Transport, LLC
Intake Latitude:	40.331551
Intake Longitude:	-80.601034
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Range Tap @ Corbin Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Range Resources Corp.
Intake Latitude:	40.229983
Intake Longitude:	-80.521067
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- The Village of Valley Grove

Type:	Purchased Water
County:	Ohio
Owner:	The Village of Valley Grove
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Valley Falls PSD

Type:	Purchased Water
County:	Marion
Owner:	Valley Falls PSD
Intake Latitude:	39.45889
Intake Longitude:	-80.15583
HUC-8 Code:	5020001
Drainage Area (sq miles):	1367.05
Regulated Stream:	YES Tygart Valley Dam
PWS Within 1 Mile:	YES City of Fairmont

Gauged Stream:	YES
Ref Gauge ID:	3057000
Ref Gauge Name:	TYGART VALLEY RIVER AT COLFAX, WV
Minimum Gauge Reading (cfs):	397.39
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #1 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.95205
Intake Longitude:	-80.56189
HUC-8 Code:	5030106
Drainage Area (sq miles):	156.06
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.63
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #2 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.949578
Intake Longitude:	-80.531256
HUC-8 Code:	5030106
Drainage Area (sq miles):	152.4
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.24
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Water Department

Type:	Purchased Water
County:	Ohio
Owner:	Wheeling Water Department
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Shoemaker Groundwater Wells @ HG Energy

Type:	Ground Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	40.0222
Intake Longitude:	-80.733888
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO

PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	800

Comments:
This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals.
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Secondary Sources

For each proposed secondary water source identified in your water management plan (i.e. groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow and quality-tested by the operator at the request of the drinking well owner prior to the operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.
- The use of recycled frac water is always encouraged.

- 4K Industrial Park, LLC

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Source Latitude:	40.100395
Source Longitude:	-80.71269
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Ballato Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Nick Ballato and Christopher Ballato
Source Latitude:	40.308611
Source Longitude:	-80.565028
Reference WMP:	1877

Comments:

- Barry Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Barry Greathouse
Source Latitude:	40.18831
Source Longitude:	-80.63714
Reference WMP:	1869

Comments:

- Columbia Gas Transmission (TCO Elson) FWI

Type:	Purchased Water
County:	Marshall
Owner:	Columbia Gas Transmission, LLC.
Source Latitude:	39.75398
Source Longitude:	-80.613604
Reference WMP:	547

Comments:

- Corbin Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Margaret Corbin
Source Latitude:	40.233122
Source Longitude:	-80.524025
Reference WMP:	1870

Comments:

- Durig A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	39.715905
Source Longitude:	-80.636785
Reference WMP:	1862

Comments:

- Durig B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig

Source Latitude:	38.8022
Source Longitude:	-80.638491
Reference WMP:	1863

Comments:

- Elite Gasfield Services, Midland Borough

Type:	Purchased Water
County:	Beaver, PA
Owner:	Elite Gasfield Services
Source Latitude:	40.644598
Source Longitude:	-80.469382
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Elmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Charles and Thomas Elmer
Source Latitude:	38.831351
Source Longitude:	-80.276326
Reference WMP:	1847

Comments:

- Equitrans Water Services, LLC Cook Impoundment

Type:	Purchased Water
County:	Greene, PA
Owner:	Equitrans Water Services, LLC
Source Latitude:	39.817197
Source Longitude:	-80.477956
Reference WMP:	

Comments:
PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PA DEP.

- Farmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Clarence Farmer
Source Latitude:	40.146183

Source Longitude:	-80.573857
Reference WMP:	1871

Comments:

- Ferrell Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Kevin Ferrell
Source Latitude:	40.04445
Source Longitude:	-80.53023
Reference WMP:	1874

Comments:

- Grant Town Water

Type:	Purchased Water
County:	Marion
Owner:	Town of Grant Town
Source Latitude:	39.559407
Source Longitude:	-80.172893
Reference WMP:	

Comments:
@ Horizon Ventures Withdrawal Location

- Heartwood Forestland Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ritchie
Owner:	Wanda Bartlett
Source Latitude:	39.123961
Source Longitude:	-81.098573
Reference WMP:	1878

Comments:

- Helen Miller Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Helen J. Miller
Source Latitude:	40.085722
Source Longitude:	-80.623333
Reference WMP:	1059

Comments:

- Hickman Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Mark Hickman et al
Source Latitude:	40.041361
Source Longitude:	-80.548944
Reference WMP:	1875

Comments:

- Hieronimus #1 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.811
Source Longitude:	-80.5212
Reference WMP:	1856

Comments:

- Hieronimus #2 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8149
Source Longitude:	-80.5233
Reference WMP:	1857

Comments:

- Hieronimus #3 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8162
Source Longitude:	-80.5266
Reference WMP:	1761

Comments:

- Hieronimus #4 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra

	Hieronimus
Source Latitude:	39.8198
Source Longitude:	-80.5295
Reference WMP:	1858

Comments:

- Hupp 1 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Hupp
Source Latitude:	40.175058
Source Longitude:	-80.567622
Reference WMP:	1873

Comments:

- Hupp 2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Wylie Hupp
Source Latitude:	40.175069
Source Longitude:	-80.578206
Reference WMP:	1058

Comments:

- Hydro Recovery, LP

Type:	Purchased Water
County:	Washington, PA
Owner:	Hydro Recovery, LP - Burgettstown
Source Latitude:	40.419251
Source Longitude:	-80.422684
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Kelley #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Margaret Sue Kelley
Source Latitude:	39.681388
Source Longitude:	-80.701113

Reference WMP:	1865

Comments:

- Kestner Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Gary Kestner
Source Latitude:	40.147904
Source Longitude:	-80.539568
Reference WMP:	1872

Comments:

- Linda Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Linda Greathouse
Source Latitude:	40.205416
Source Longitude:	-80.608805
Reference WMP:	1876

Comments:

- Lipps Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Ralph and Opal Lipps
Source Latitude:	38.8446
Source Longitude:	-80.3413
Reference WMP:	1850

Comments:

- McGlumphy Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Steven M. McGlumphy
Source Latitude:	40.152588
Source Longitude:	-80.587667
Reference WMP:	1060

Comments:

- Messenger Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Chesapeake Energy
Source Latitude:	393674857
Source Longitude:	-80.689887
Reference WMP:	1859

Comments:

- Pennsylvania American Water

Type:	Purchased Water
County:	
Owner:	Pennsylvania American Water
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Raw Water Pond @ Horizon Ventures

Type:	Purchased Water
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Source Latitude:	39.5535
Source Longitude:	-80.16742
Reference WMP:	

Comments:

- Recycled Frac Water

Type:	Recycled Frac Water
County:	
Owner:	
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Treated and recycled flowback/produced water sources may include, but are not limited to this well pad.

- Reliance Minerals A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia

Owner:	Reliance Minerals, Inc.
Source Latitude:	39.521316
Source Longitude:	-79.973907
Reference WMP:	1868

Comments:

- Reliance Minerals B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.524571
Source Longitude:	-79.974529
Reference WMP:	1867

Comments:

- Robinson Fork @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy II Appalachia, LLC.
Source Latitude:	39.979222
Source Longitude:	-80.487472
Reference WMP:	

Comments:

- Ross #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Mike Ross
Source Latitude:	38.9839
Source Longitude:	-80.2628
Reference WMP:	1851

Comments:

- Stern Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Marshall
Owner:	Alton and Mary Stern
Source Latitude:	39.733943
Source Longitude:	-80.64695
Reference WMP:	1826

Comments:

- WFN Impoundment A @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy, LLC
Source Latitude:	39.991417
Source Longitude:	-80.488694
Reference WMP:	

Comments:

- WFN Impoundment B @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy
Source Latitude:	39.991917
Source Longitude:	-80.4965
Reference WMP:	

Comments:

- Washington Pike PSD @ Brook Hills Park

Type:	Purchased Water
County:	Brooke
Owner:	Washington Pike PSD
Source Latitude:	40.26632
Source Longitude:	-80.543592
Reference WMP:	

Comments:

- Worthley Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Kimberly Worthley
Source Latitude:	40.216869
Source Longitude:	-80.548592
Reference WMP:	1061

Comments:

Water Management Plan

Action: Modified **Effective Date:** 4/22/2022
Operator: SWN Production Company, LLC
WMP ID: 1967
Plan Type: Well Pad
Facility Name: OCC A OHI Well Pad
County: Ohio
Lat: 40.079503
Long: -80.59804

APPROVED
By Dawn Newell at 10:38 am, 4/22/22

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supersedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

Api	Wellname
047-069-00137	OCC A OHI 10H
047-069-00239	OCC A OHI 5H
047-069-00241	OCC A OHI 205H
047-069-00245	OCC A OHI 8H
047-069-00261	OCC A OHI 6H
047-069-00269	OCC A OHI 405H
047-069-00340	OCC A OHI 1H
047-069-00341	OCC A OHI 201H
047-069-00342	OCC A OHI 401H
047-069-00343	OCC A OHI 601H

The following water consumption estimates (in gallons) have been reported for this plan.

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	28,823,760
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activities:	210,000
Total for Well Pad:	29,873,760

Primary Sources

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and enforceable as such.

For any source identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this Water Management Plan.

- Big Wheeling Creek @ Hogg

Type:	Stream/River
County:	Marshall
Owner:	Don Hogg
Intake Latitude:	39.984529
Intake Longitude:	-80.634106
HUC-8 Code:	5030106
Drainage Area (sq miles):	201.69

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.23
Minimum Passby (cfs):	27.28
Endangered Species:	NO

Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	5040

Comments:

- Big Wheeling Creek @ Wheeling Staging Area

Type:	Stream/River
County:	Ohio
Owner:	Fulton Storage, LLC
Intake Latitude:	40.077019
Intake Longitude:	-80.713866
HUC-8 Code:	5030106
Drainage Area (sq miles):	296.04
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	43.57
Minimum Passby (cfs):	40.03
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Booths Creek @ Reliance Minerals

Type:	Stream/River
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Intake Latitude:	39.530405
Intake Longitude:	-79.978079
HUC-8 Code:	5020003
Drainage Area (sq miles):	1.79
Regulated Stream:	NO
PWS Within 1 Mile:	YES Morgantown Utility Board

Gauged Stream:	NO
Ref Gauge ID:	3062500
Ref Gauge Name:	DECKERS CREEK AT MORGANTOWN, WV
Minimum Gauge Reading (cfs):	18.65
Minimum Passby (cfs):	.48
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Buffalo Creek @ Bethany VFD Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Bethany Pike Volunteer Fire Department
Intake Latitude:	40.253422
Intake Longitude:	-80.600319
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	67.66
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate	3100

PWS Within 1 Mile:	NO	(gpm):	

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Buffalo Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.19386
Intake Longitude:	-80.525796
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	54.63
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3200

Comments:

- Buffalo Creek @ Forney

Type:	Stream/River
County:	Brooke
Owner:	Forney & Sons Holding Company, LLC
Intake Latitude:	40.193453
Intake Longitude:	-80.52175
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Fuchs

Type:	Stream/River
County:	Brooke
Owner:	Beverly Fuchs
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate	5250

(gpm):	

Comments:

- Buffalo Creek @ Greathouse Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Linda Greathouse
Intake Latitude:	40.20895
Intake Longitude:	-80.60105
HUC-8 Code:	5030106
Drainage Area (sq miles):	138.56
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	60.42
Minimum Passby (cfs):	54.51
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3300

Comments:

- Buffalo Creek @ Labelle Farms

Type:	Stream/River
County:	Brooke
Owner:	Steve Paul
Intake Latitude:	40.204444
Intake Longitude:	-80.598645
HUC-8 Code:	5030106
Drainage Area (sq miles):	136.79
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	59.2
Minimum Passby (cfs):	53.8
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Buffalo Creek @ WVDOH

Type:	Stream/River
County:	Brooke
Owner:	West Virginia Division of Highways
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES

Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Maximum Pump Rate (gpm):	3360

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Buffalo Creek @ Worthley Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Kimberly C. Worthley
Intake Latitude:	40.210978
Intake Longitude:	-80.548779
HUC-8 Code:	5030106
Drainage Area (sq miles):	113.49
Regulated Stream:	NO
PWS Within 1 Mile:	YES Hammond PSD

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	44.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Zatta

Type:	Stream/River
County:	Brooke
Owner:	Edward Zatta
Intake Latitude:	40.253588
Intake Longitude:	-80.600254
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	66.37
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Cross Creek @ Bullock Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Isabelle Bullock
Intake Latitude:	40.30735
Intake Longitude:	-80.569317
HUC-8 Code:	5030101
Drainage Area (sq	74.66

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	19.32
Minimum Passby (cfs):	20.99
Endangered Species:	NO

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Cross Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.300536
Intake Longitude:	-80.542229
HUC-8 Code:	5030101
Drainage Area (sq miles):	68.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	22.44
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Cross Creek @ Norfolk and Western Railway

Type:	Stream/River
County:	Brooke
Owner:	Wheeling & Lake Erie Railway Company
Intake Latitude:	40.30802
Intake Longitude:	-80.599193
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Cross Creek @ Palizzi

Type:	Stream/River
County:	Brooke
Owner:	Campbell Palizzi
Intake Latitude:	40.302427

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading	23.11

Intake Longitude:	-80.582753
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	NO
PWS Within 1 Mile:	NO

(cfs):	
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Fish Creek @ Gribben

Type:	Stream/River
County:	Marshall
Owner:	Revocable Living Trust of M. Peggy Gribben
Intake Latitude:	39.753271
Intake Longitude:	-80.597913
HUC-8 Code:	5030106
Drainage Area (sq miles):	141.61
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	23.94
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Fish Creek @ Guzek

Type:	Stream/River
County:	Marshall
Owner:	Walter A. Guzek
Intake Latitude:	39.753021
Intake Longitude:	-80.613941
HUC-8 Code:	5030106
Drainage Area (sq miles):	144.57
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	24.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Little Wheeling Creek @ Edge Withdrawal Site

Type:	Stream/River

Gauged Stream:	NO

County:	Ohio
Owner:	Alice Mae Edge
Intake Latitude:	40.098
Intake Longitude:	-80.5558
HUC-8 Code:	5030106
Drainage Area (sq miles):	4.26
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Little Wheeling Creek @ Main Street Bank

Type:	Stream/River
County:	Ohio
Owner:	Main Street Bank
Intake Latitude:	40.064076
Intake Longitude:	-80.614406
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	23
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Little Wheeling Creek @ Rt. 40 Staging Area

Type:	Stream/River
County:	Ohio
Owner:	JDS Investments, LLC
Intake Latitude:	40.078324
Intake Longitude:	-80.591145
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	64.8
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Gribben

Type:	Stream/River
County:	Ohio

Gauged Stream:	NO
Ref Gauge ID:	3112000

Owner:	Lawrence Kevin Gribber
Intake Latitude:	40.036777
Intake Longitude:	-80.598008
HUC-8 Code:	5030106
Drainage Area (sq miles):	30.81
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	6.26
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Supler

Type:	Stream/River
County:	Ohio
Owner:	Gregory and Peggy Supler
Intake Latitude:	40.04409
Intake Longitude:	-80.55348
HUC-8 Code:	5030106
Drainage Area (sq miles):	20.54
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	62.57
Minimum Passby (cfs):	4.17
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Ohio River @ Extraction B Panhandle

Type:	Stream/River
County:	Brooke
Owner:	SWN Production Company, LLC
Intake Latitude:	40.233469
Intake Longitude:	-80.654359
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4375

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Proctor Peacemaker

Type:	Stream/River
County:	Wetzel
Owner:	SWN Production Company, LLC
Intake Latitude:	39.714299
Intake Longitude:	-80.825862
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	6000

Comments:

Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Paw Paw Creek @ Horizon Ventures

Type:	Stream/River
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Intake Latitude:	39.552426
Intake Longitude:	-80.166833
HUC-8 Code:	5020003
Drainage Area (sq miles):	28.34
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	26.96
Minimum Passby (cfs):	4.57
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Short Creek @ Cain

Type:	Stream/River
County:	Ohio
Owner:	Susan L. Cain
Intake Latitude:	40.155061
Intake Longitude:	-80.651431
HUC-8 Code:	5030106
Drainage Area (sq miles):	16.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	64.49
Minimum Passby (cfs):	7.68
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	3360

Comments:

- WV Fork Fish Creek @ Derby

Type:	Stream/River
County:	Wetzel
Owner:	Steven Derby
Intake Latitude:	39.709329
Intake Longitude:	-80.536079
HUC-8 Code:	5030106
Drainage Area (sq miles):	48.62
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	52.24
Minimum Passby (cfs):	8.21
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- WV Fork Fish Creek @ Francis

Type:	Stream/River
County:	Marshall
Owner:	Loretta J. Francis
Intake Latitude:	39.733295
Intake Longitude:	-80.579415
HUC-8 Code:	5030106
Drainage Area (sq miles):	86.51
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	63.69
Minimum Passby (cfs):	17.55
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.94 cfs (0.51 ft on upstream staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- WV Fork of Fish Creek @ Van Scyoc Withdrawal Site

Type:	Stream/River
County:	Wetzel
Owner:	Israel D Van Scyoc
Intake Latitude:	39.6908
Intake Longitude:	-80.4762
HUC-8 Code:	5030106
Drainage Area (sq miles):	21.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	5.45
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Wheeling Creek @ Iskcon

Type:	Stream/River
County:	Marshall
Owner:	Iskcon New Vrindaban, Inc.
Intake Latitude:	39.967973
Intake Longitude:	-80.599241
HUC-8 Code:	5030106
Drainage Area (sq miles):	189.6
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Wheeling Creek @ Schafer

Type:	Stream/River
County:	Marshall
Owner:	Betty Jane Schafer
Intake Latitude:	39.99257
Intake Longitude:	-80.634912
HUC-8 Code:	5030106
Drainage Area (sq miles):	203.38
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.7
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Wheeling Creek @ Sligar

Type:	Stream/River
County:	Marshall
Owner:	Terry Sligar
Intake Latitude:	40.013185
Intake Longitude:	-80.652863
HUC-8 Code:	5030106
Drainage Area (sq miles):	211.8
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	28.64
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 20.92 cfs (1.00 ft on upstream staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded. This site shall not be operated concurrently with the Wheeling Creek @ Schafer location or Wheeling Creek @ Iskcon site.

- Whiteday Creek @ Sorine Withdrawal Site

Type:	Stream/River
County:	Marion
Owner:	Andrew Sorine, Jr.
Intake Latitude:	39.472311
Intake Longitude:	-79.977123
HUC-8 Code:	5020003
Drainage Area (sq miles):	12.29
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	20.25
Minimum Passby (cfs):	2.29
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Adrian Public Service District

Type:	Purchased Water
County:	Upshur
Owner:	Adrian Public Service District
Intake Latitude:	38.9775
Intake Longitude:	-80.22083
HUC-8 Code:	5020001
Drainage Area (sq miles):	197.33
Regulated Stream:	YES
PWS Within 1 Mile:	YES City of Buckhannon Water Plant

Gauged Stream:	YES
Ref Gauge ID:	3054500
Ref Gauge Name:	TYGART VALLEY RIVER AT PHILIPPI, WV
Minimum Gauge Reading (cfs):	155.85
Minimum Passby (cfs):	75.51
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:

- American Petroleum Partners (Wheeling Creek @ Wilson)

Type:	Purchased Water
County:	Marshall
Owner:	American Petroleum Partners, LLC
Intake Latitude:	39.975882
Intake Longitude:	-80.62967
HUC-8 Code:	5030106

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	26.09
Endangered Species:	NO

Drainage Area (sq miles):	192.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- Covestro, LLC

Type:	Purchased Water
County:	Marshall
Owner:	Covestro, LLC
Intake Latitude:	39.7218
Intake Longitude:	-80.830231
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Elite Gasfield Services

Type:	Purchased Water
County:	Brooke
Owner:	Elite Gasfield Services
Intake Latitude:	40.32667
Intake Longitude:	-80.59861
HUC-8 Code:	5030101
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES City of Follansbee

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Grandview-Doolin PSD

Type:	Purchased Water
County:	Wetzel
Owner:	Grandview-Doolin Public Service District

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock &

Intake Latitude:	39.71361
Intake Longitude:	-80.82583
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

	Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Marshall County Public Service District 3

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #3
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Tap Location is: (39.906400, -80.586200)

- Marshall County Public Service District 4

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #4
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Ohio County PSD

Type:	Purchased Water
County:	Ohio
Owner:	Ohio county PSD
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ 4K Industrial Park

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Intake Latitude:	40.098805
Intake Longitude:	-80.711328
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ J&R Excavating

Type:	Purchased Water
County:	Marshall
Owner:	J&R Excavating
Intake Latitude:	39.998509
Intake Longitude:	-80.737336
HUC-8 Code:	5030106

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading	6468

Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

(cfs):	
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Oasis Transport Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Oasis Transport, LLC
Intake Latitude:	40.331551
Intake Longitude:	-80.601034
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Range Tap @ Corbin Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Range Resources Corp.
Intake Latitude:	40.229983
Intake Longitude:	-80.521067
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- The Village of Valley Grove

Type:	Purchased Water
County:	Ohio
Owner:	The Village of Valley Grove
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Valley Falls PSD

Type:	Purchased Water
County:	Marion
Owner:	Valley Falls PSD
Intake Latitude:	39.45889
Intake Longitude:	-80.15583
HUC-8 Code:	5020001
Drainage Area (sq miles):	1367.05
Regulated Stream:	YES Tygart Valley Dam
PWS Within 1 Mile:	YES City of Fairmont

Gauged Stream:	YES
Ref Gauge ID:	3057000
Ref Gauge Name:	TYGART VALLEY RIVER AT COLFAX, WV
Minimum Gauge Reading (cfs):	397.39
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #1 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.95205
Intake Longitude:	-80.56189
HUC-8 Code:	5030106
Drainage Area (sq miles):	156.06
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.63
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #2 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.949578
Intake Longitude:	-80.531256
HUC-8 Code:	5030106
Drainage Area (sq miles):	152.4
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.24
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Water Department

Type:	Purchased Water
County:	Ohio
Owner:	Wheeling Water Department
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Shoemaker Groundwater Wells @ HG Energy

Type:	Ground Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	40.0222
Intake Longitude:	-80.733888
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO

PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	800

Comments:
This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals.
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Secondary Sources

For each proposed secondary water source identified in your water management plan (i.e. groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow and quality-tested by the operator at the request of the drinking well owner prior to the operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.
- The use of recycled frac water is always encouraged.

- 4K Industrial Park, LLC

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Source Latitude:	40.100395
Source Longitude:	-80.71269
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Ballato Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Nick Ballato and Christopher Ballato
Source Latitude:	40.308611
Source Longitude:	-80.565028
Reference WMP:	1877

Comments:

- Barry Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Barry Greathouse
Source Latitude:	40.18831
Source Longitude:	-80.63714
Reference WMP:	1869

Comments:

- Columbia Gas Transmission (TCO Elson) FWI

Type:	Purchased Water
County:	Marshall
Owner:	Columbia Gas Transmission, LLC.
Source Latitude:	39.75398
Source Longitude:	-80.613604
Reference WMP:	547

Comments:

- Corbin Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Margaret Corbin
Source Latitude:	40.233122
Source Longitude:	-80.524025
Reference WMP:	1870

Comments:

- Durig A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	39.715905
Source Longitude:	-80.636785
Reference WMP:	1862

Comments:

- Durig B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig

Source Latitude:	38.8022
Source Longitude:	-80.638491
Reference WMP:	1863

Comments:

- Elite Gasfield Services, Midland Borough

Type:	Purchased Water
County:	Beaver, PA
Owner:	Elite Gasfield Services
Source Latitude:	40.644598
Source Longitude:	-80.469382
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Elmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Charles and Thomas Elmer
Source Latitude:	38.831351
Source Longitude:	-80.276326
Reference WMP:	1847

Comments:

- Equitrans Water Services, LLC Cook Impoundment

Type:	Purchased Water
County:	Greene, PA
Owner:	Equitrans Water Services, LLC
Source Latitude:	39.817197
Source Longitude:	-80.477956
Reference WMP:	

Comments:
PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PA DEP.

- Farmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Clarence Farmer
Source Latitude:	40.146183

Source Longitude:	-80.573857
Reference WMP:	1871

Comments:

- Ferrell Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Kevin Ferrell
Source Latitude:	40.04445
Source Longitude:	-80.53023
Reference WMP:	1874

Comments:

- Grant Town Water

Type:	Purchased Water
County:	Marion
Owner:	Town of Grant Town
Source Latitude:	39.559407
Source Longitude:	-80.172893
Reference WMP:	

Comments:
@ Horizon Ventures Withdrawal Location

- Heartwood Forestland Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ritchie
Owner:	Wanda Bartlett
Source Latitude:	39.123961
Source Longitude:	-81.098573
Reference WMP:	1878

Comments:

- Helen Miller Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Helen J. Miller
Source Latitude:	40.085722
Source Longitude:	-80.623333
Reference WMP:	1059

Comments:

- Hickman Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Mark Hickman et al
Source Latitude:	40.041361
Source Longitude:	-80.548944
Reference WMP:	1875

Comments:

- Hieronimus #1 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.811
Source Longitude:	-80.5212
Reference WMP:	1856

Comments:

- Hieronimus #2 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8149
Source Longitude:	-80.5233
Reference WMP:	1857

Comments:

- Hieronimus #3 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8162
Source Longitude:	-80.5266
Reference WMP:	1761

Comments:

- Hieronimus #4 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra

	Hieronimus
Source Latitude:	39.8198
Source Longitude:	-80.5295
Reference WMP:	1858

Comments:

- Hupp 1 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Hupp
Source Latitude:	40.175058
Source Longitude:	-80.567622
Reference WMP:	1873

Comments:

- Hupp 2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Wylie Hupp
Source Latitude:	40.175069
Source Longitude:	-80.578206
Reference WMP:	1058

Comments:

- Hydro Recovery, LP

Type:	Purchased Water
County:	Washington, PA
Owner:	Hydro Recovery, LP - Burgettstown
Source Latitude:	40.419251
Source Longitude:	-80.422684
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Kelley #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Margaret Sue Kelley
Source Latitude:	39.681388
Source Longitude:	-80.701113

Reference WMP:	1865

Comments:

- Kestner Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Gary Kestner
Source Latitude:	40.147904
Source Longitude:	-80.539568
Reference WMP:	1872

Comments:

- Linda Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Linda Greathouse
Source Latitude:	40.205416
Source Longitude:	-80.608805
Reference WMP:	1876

Comments:

- Lipps Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Ralph and Opal Lipps
Source Latitude:	38.8446
Source Longitude:	-80.3413
Reference WMP:	1850

Comments:

- McGlumphy Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Steven M. McGlumphy
Source Latitude:	40.152588
Source Longitude:	-80.587667
Reference WMP:	1060

Comments:

- Messenger Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Chesapeake Energy
Source Latitude:	393674857
Source Longitude:	-80.689887
Reference WMP:	1859

Comments:

- Pennsylvania American Water

Type:	Purchased Water
County:	
Owner:	Pennsylvania American Water
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Raw Water Pond @ Horizon Ventures

Type:	Purchased Water
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Source Latitude:	39.5535
Source Longitude:	-80.16742
Reference WMP:	

Comments:

- Recycled Frac Water

Type:	Recycled Frac Water
County:	
Owner:	
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Treated and recycled flowback/produced water sources may include, but are not limited to this well pad.

- Reliance Minerals A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia

Owner:	Reliance Minerals, Inc.
Source Latitude:	39.521316
Source Longitude:	-79.973907
Reference WMP:	1868

Comments:

- Reliance Minerals B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.524571
Source Longitude:	-79.974529
Reference WMP:	1867

Comments:

- Robinson Fork @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy II Appalachia, LLC.
Source Latitude:	39.979222
Source Longitude:	-80.487472
Reference WMP:	

Comments:

- Ross #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Mike Ross
Source Latitude:	38.9839
Source Longitude:	-80.2628
Reference WMP:	1851

Comments:

- Stern Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Marshall
Owner:	Alton and Mary Stern
Source Latitude:	39.733943
Source Longitude:	-80.64695
Reference WMP:	1826

Comments:

- WFN Impoundment A @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy, LLC
Source Latitude:	39.991417
Source Longitude:	-80.488694
Reference WMP:	

Comments:

- WFN Impoundment B @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy
Source Latitude:	39.991917
Source Longitude:	-80.4965
Reference WMP:	

Comments:

- Washington Pike PSD @ Brook Hills Park

Type:	Purchased Water
County:	Brooke
Owner:	Washington Pike PSD
Source Latitude:	40.26632
Source Longitude:	-80.543592
Reference WMP:	

Comments:

- Worthley Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Kimberly Worthley
Source Latitude:	40.216869
Source Longitude:	-80.548592
Reference WMP:	1061

Comments:

Water Management Plan

Action: Modified **Effective Date:** 3/18/2022
Operator: SWN Production Company, LLC
WMP ID: 1992
Plan Type: Well Pad
Facility Name: David Reinbeau MSH Well Pad
County: Marshall
Lat: 39.992859
Long: -80.66133

APPROVED
By Dawn Newell at 10:28 am, 3/18/22

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supersedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

Api	Wellname
047-051-01623	David Reinbeau MSH 10H
047-051-01630	David Reinbeau MSH 5H
047-051-02438	David Reinbeau MSH 1H
047-051-02439	David Reinbeau MSH 3H
047-051-02440	David Reinbeau MSH 201H

The following water consumption estimates (in gallons) have been reported for this plan.

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	13,759,200
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activities:	210,000
Total for Well Pad:	14,809,200

Primary Sources

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and

- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and enforceable as such.

For any source identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this Water Management Plan.

- Big Wheeling Creek @ Wheeling Staging Area

Type:	Stream/River
County:	Ohio
Owner:	Fulton Storage, LLC
Intake Latitude:	40.077019
Intake Longitude:	-80.713866
HUC-8 Code:	5030106
Drainage Area (sq miles):	296.04
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	43.57
Minimum Passby (cfs):	40.03
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Booths Creek @ Reliance Minerals

Type:	Stream/River
County:	Monongalia

Gauged Stream:	NO
Ref Gauge ID:	3062500

Owner:	Reliance Minerals, Inc.
Intake Latitude:	39.530405
Intake Longitude:	-79.978079
HUC-8 Code:	5020003
Drainage Area (sq miles):	1.79
Regulated Stream:	NO
PWS Within 1 Mile:	YES Morgantown Utility Board

Ref Gauge Name:	DECKERS CREEK AT MORGANTOWN, WV
Minimum Gauge Reading (cfs):	18.65
Minimum Passby (cfs):	.48
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Buffalo Creek @ Bethany VFD Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Bethany Pike Volunteer Fire Department
Intake Latitude:	40.253422
Intake Longitude:	-80.600319
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	67.66
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Buffalo Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.19386
Intake Longitude:	-80.525796
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	54.63
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3200

Comments:

- Buffalo Creek @ Forney

Type:	Stream/River
County:	Brooke
Owner:	Forney & Sons

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR

	Holding Company, LLC
Intake Latitude:	40.193453
Intake Longitude:	-80.52175
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

	DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Fuchs

Type:	Stream/River
County:	Brooke
Owner:	Beverly Fuchs
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:

- Buffalo Creek @ Greathouse Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Linda Greathouse
Intake Latitude:	40.20895
Intake Longitude:	-80.60105
HUC-8 Code:	5030106
Drainage Area (sq miles):	138.56
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	60.42
Minimum Passby (cfs):	54.51
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3300

Comments:

- Buffalo Creek @ Labelle Farms

Type:	Stream/River
County:	Brooke
Owner:	Steve Paul
Intake Latitude:	40.204444

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH

Intake Longitude:	-80.598645
HUC-8 Code:	5030106
Drainage Area (sq miles):	136.79
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Minimum Gauge Reading (cfs):	59.2
Minimum Passby (cfs):	53.8
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Buffalo Creek @ WVDOH

Type:	Stream/River
County:	Brooke
Owner:	West Virginia Division of Highways
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Buffalo Creek @ Worthley Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Kimberly C. Worthley
Intake Latitude:	40.210978
Intake Longitude:	-80.548779
HUC-8 Code:	5030106
Drainage Area (sq miles):	113.49
Regulated Stream:	NO
PWS Within 1 Mile:	YES Hammond PSD

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	44.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Zatta

Type:	Stream/River

Gauged Stream:	NO

County:	Brooke
Owner:	Edward Zatta
Intake Latitude:	40.253588
Intake Longitude:	-80.600254
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	66.37
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Cross Creek @ Bullock Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Isabelle Bullock
Intake Latitude:	40.30735
Intake Longitude:	-80.569317
HUC-8 Code:	5030101
Drainage Area (sq miles):	74.66
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	19.32
Minimum Passby (cfs):	20.99
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Cross Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.300536
Intake Longitude:	-80.542229
HUC-8 Code:	5030101
Drainage Area (sq miles):	68.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	22.44
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Cross Creek @ Norfolk and Western Railway

Type:	Stream/River
County:	Brooke
Owner:	Wheeling & Lake Erie Railway Company
Intake Latitude:	40.30802
Intake Longitude:	-80.599193
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Cross Creek @ Palizzi

Type:	Stream/River
County:	Brooke
Owner:	Campbell Palizzi
Intake Latitude:	40.302427
Intake Longitude:	-80.582753
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	23.11
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Fish Creek @ Gribben

Type:	Stream/River
County:	Marshall
Owner:	Revocable Living Trust of M. Peggy Gribben
Intake Latitude:	39.753271
Intake Longitude:	-80.597913
HUC-8 Code:	5030106
Drainage Area (sq miles):	141.61
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	23.94
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Fish Creek @ Guzek

Type:	Stream/River
County:	Marshall
Owner:	Walter A. Guzek
Intake Latitude:	39.753021
Intake Longitude:	-80.613941
HUC-8 Code:	5030106
Drainage Area (sq miles):	144.57
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	24.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Little Wheeling Creek @ Edge Withdrawal Site

Type:	Stream/River
County:	Ohio
Owner:	Alice Mae Edge
Intake Latitude:	40.098
Intake Longitude:	-80.5558
HUC-8 Code:	5030106
Drainage Area (sq miles):	4.26
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Little Wheeling Creek @ Main Street Bank

Type:	Stream/River
County:	Ohio
Owner:	Main Street Bank
Intake Latitude:	40.064076
Intake Longitude:	-80.614406
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94

Gauged Stream:	NO
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	23
Minimum Passby (cfs):	2.83
Endangered Species:	NO

Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Little Wheeling Creek @ Rt. 40 Staging Area

Type:	Stream/River
County:	Ohio
Owner:	JDS Investments, LLC
Intake Latitude:	40.078324
Intake Longitude:	-80.591145
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	64.8
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Gribben

Type:	Stream/River
County:	Ohio
Owner:	Lawrence Kevin Gribber
Intake Latitude:	40.036777
Intake Longitude:	-80.598008
HUC-8 Code:	5030106
Drainage Area (sq miles):	30.81
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	6.26
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Supler

Type:	Stream/River
County:	Ohio
Owner:	Gregory and Peggy Supler
Intake Latitude:	40.04409
Intake Longitude:	-80.55348
HUC-8 Code:	5030106
Drainage Area (sq miles):	20.54

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	62.57
Minimum Passby (cfs):	4.17
Endangered Species:	NO
Mussel Stream:	YES

Regulated Stream:	NO
PWS Within 1 Mile:	NO

Maximum Pump Rate (gpm):	2500

Comments:

- Ohio River @ Extraction B Panhandle

Type:	Stream/River
County:	Brooke
Owner:	SWN Production Company, LLC
Intake Latitude:	40.233469
Intake Longitude:	-80.654359
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4375

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Proctor Peacemaker

Type:	Stream/River
County:	Wetzel
Owner:	SWN Production Company, LLC
Intake Latitude:	39.714299
Intake Longitude:	-80.825862
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	6000

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Paw Paw Creek @ Horizon Ventures

Type:	Stream/River
County:	Marion
Owner:	Horizon Ventures of WV, Inc

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV

Intake Latitude:	39.552426
Intake Longitude:	-80.166833
HUC-8 Code:	5020003
Drainage Area (sq miles):	28.34
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Minimum Gauge Reading (cfs):	26.96
Minimum Passby (cfs):	4.57
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Short Creek @ Cain

Type:	Stream/River
County:	Ohio
Owner:	Susan L. Cain
Intake Latitude:	40.155061
Intake Longitude:	-80.651431
HUC-8 Code:	5030106
Drainage Area (sq miles):	16.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	64.49
Minimum Passby (cfs):	7.68
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	3360

Comments:

- WV Fork Fish Creek @ Derby

Type:	Stream/River
County:	Wetzel
Owner:	Steven Derby
Intake Latitude:	39.709329
Intake Longitude:	-80.536079
HUC-8 Code:	5030106
Drainage Area (sq miles):	48.62
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	52.24
Minimum Passby (cfs):	8.21
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- WV Fork Fish Creek @ Francis

Type:	Stream/River
County:	Marshall
Owner:	Loretta J. Francis
Intake Latitude:	39.733295
Intake Longitude:	-80.579415

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading	63.69

HUC-8 Code:	5030106
Drainage Area (sq miles):	86.51
Regulated Stream:	NO
PWS Within 1 Mile:	NO

(cfs):	
Minimum Passby (cfs):	17.55
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:

- WV Fork of Fish Creek @ Van Scyoc Withdrawal Site

Type:	Stream/River
County:	Wetzel
Owner:	Israel D Van Scyoc
Intake Latitude:	39.6908
Intake Longitude:	-80.4762
HUC-8 Code:	5030106
Drainage Area (sq miles):	21.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	5.45
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Wheeling Creek @ Iskcon

Type:	Stream/River
County:	Marshall
Owner:	Iskcon New Vrindaban, Inc.
Intake Latitude:	39.967973
Intake Longitude:	-80.599241
HUC-8 Code:	5030106
Drainage Area (sq miles):	189.6
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Wheeling Creek @ Schafer

Type:	Stream/River
County:	Marshall
Owner:	Betty Jane Schafer
Intake Latitude:	39.99257
Intake Longitude:	-80.634912
HUC-8 Code:	5030106
Drainage Area (sq	203.38

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.7
Minimum Passby (cfs):	27.5

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Wheeling Creek @ Sligar

Type:	Stream/River
County:	Marshall
Owner:	Terry Sligar
Intake Latitude:	40.013185
Intake Longitude:	-80.652863
HUC-8 Code:	5030106
Drainage Area (sq miles):	211.8
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	28.64
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or Wheeling Creek @ Iskcon site.

- Whiteday Creek @ Sorine Withdrawal Site

Type:	Stream/River
County:	Marion
Owner:	Andrew Sorine, Jr.
Intake Latitude:	39.472311
Intake Longitude:	-79.977123
HUC-8 Code:	5020003
Drainage Area (sq miles):	12.29
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	20.25
Minimum Passby (cfs):	2.29
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Adrian Public Service District

Type:	Purchased Water
County:	Upshur
Owner:	Adrian Public Service District
Intake Latitude:	38.9775

Gauged Stream:	YES
Ref Gauge ID:	3054500
Ref Gauge Name:	TYGART VALLEY RIVER AT PHILIPPI, WV
Minimum Gauge Reading	155.85

Intake Longitude:	-80.22083
HUC-8 Code:	5020001
Drainage Area (sq miles):	197.33
Regulated Stream:	YES
PWS Within 1 Mile:	YES City of Buckhannon Water Plant

(cfs):	
Minimum Passby (cfs):	75.51
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:

- American Petroleum Partners (Wheeling Creek @ Wilson)

Type:	Purchased Water
County:	Marshall
Owner:	American Petroleum Partners, LLC
Intake Latitude:	39.975882
Intake Longitude:	-80.62967
HUC-8 Code:	5030106
Drainage Area (sq miles):	192.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	26.09
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- Covestro, LLC

Type:	Purchased Water
County:	Marshall
Owner:	Covestro, LLC
Intake Latitude:	39.7218
Intake Longitude:	-80.830231
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Elite Gasfield Services

Type:	Purchased Water
County:	Brooke

Gauged Stream:	YES
Ref Gauge ID:	9999999

Owner:	Elite Gasfield Services
Intake Latitude:	40.32667
Intake Longitude:	-80.59861
HUC-8 Code:	5030101
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES City of Follansbee

Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Grandview-Doolin PSD

Type:	Purchased Water
County:	Wetzel
Owner:	Grandview-Doolin Public Service District
Intake Latitude:	39.71361
Intake Longitude:	-80.82583
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Marshall County Public Service District 3

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #3
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

	Department

Comments:
Tap Location is: (39.906400, -80.586200)

- Marshall County Public Service District 4

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #4
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Ohio County PSD

Type:	Purchased Water
County:	Ohio
Owner:	Ohio county PSD
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ 4K Industrial Park

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Intake Latitude:	40.098805
Intake Longitude:	-80.711328

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam

HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ J&R Excavating

Type:	Purchased Water
County:	Marshall
Owner:	J&R Excavating
Intake Latitude:	39.998509
Intake Longitude:	-80.737336
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Oasis Transport Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Oasis Transport, LLC
Intake Latitude:	40.331551
Intake Longitude:	-80.601034
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Range Tap @ Corbin Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Range Resources Corp.
Intake Latitude:	40.229983
Intake Longitude:	-80.521067
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- The Village of Valley Grove

Type:	Purchased Water
County:	Ohio
Owner:	The Village of Valley Grove
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Valley Falls PSD

Type:	Purchased Water
County:	Marion
Owner:	Valley Falls PSD
Intake Latitude:	39.45889
Intake Longitude:	-80.15583
HUC-8 Code:	5020001
Drainage Area (sq miles):	1367.05

Gauged Stream:	YES
Ref Gauge ID:	3057000
Ref Gauge Name:	TYGART VALLEY RIVER AT COLFAX, WV
Minimum Gauge Reading (cfs):	397.39
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES

Regulated Stream:	YES Tygart Valley Dam
PWS Within 1 Mile:	YES City of Fairmont

Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek # 2 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.949577
Intake Longitude:	-80.531255
HUC-8 Code:	5030106
Drainage Area (sq miles):	152.4
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.24
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #1 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.95205
Intake Longitude:	-80.56189
HUC-8 Code:	5030106
Drainage Area (sq miles):	156.06
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.63
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Water Department

Type:	Purchased Water
County:	Ohio
Owner:	Wheeling Water Department
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate	

PWS Within 1 Mile:	YES Wheeling Water Department

(gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Shoemaker Groundwater Wells @ HG Energy

Type:	Ground Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	40.0222
Intake Longitude:	-80.733888
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	800

Comments:
This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals.
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Secondary Sources

For each proposed secondary water source identified in your water management plan (i.e. groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow and quality-tested by the operator at the request of the drinking well owner prior to the operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.
- The use of recycled frac water is always encouraged.

- 4K Industrial Park, LLC

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Source Latitude:	40.100395

Source Longitude:	-80.71269
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Ballato Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Nick Ballato and Christopher Ballato
Source Latitude:	40.308611
Source Longitude:	-80.565028
Reference WMP:	1877

Comments:

- Barry Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Barry Greathouse
Source Latitude:	40.18831
Source Longitude:	-80.63714
Reference WMP:	1869

Comments:

- Columbia Gas Transmission (TCO Elson) FWI

Type:	Purchased Water
County:	Marshall
Owner:	Columbia Gas Transmission, LLC.
Source Latitude:	39.75398
Source Longitude:	-80.613604
Reference WMP:	547

Comments:

- Corbin Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Margaret Corbin
Source Latitude:	40.233122
Source Longitude:	-80.524025
Reference WMP:	1870

Comments:

- Durig A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	39.715905
Source Longitude:	-80.636785
Reference WMP:	1862

Comments:

- Durig B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	38.8022
Source Longitude:	-80.638491
Reference WMP:	1863

Comments:

- Elite Gasfield Services, Midland Borough

Type:	Purchased Water
County:	Beaver, PA
Owner:	Elite Gasfield Services
Source Latitude:	40.644598
Source Longitude:	-80.469382
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Elmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Charles and Thomas Elmer
Source Latitude:	38.831351
Source Longitude:	-80.276326
Reference WMP:	1847

Comments:

- Equitrans Water Services, LLC Cook Impoundment

Type:	Purchased Water
County:	Greene, PA
Owner:	Equitrans Water Services, LLC
Source Latitude:	39.817197
Source Longitude:	-80.477956
Reference WMP:	

Comments:
PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.

- Farmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Clarence Farmer
Source Latitude:	40.146183
Source Longitude:	-80.573857
Reference WMP:	1871

Comments:

- Ferrell Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Kevin Ferrell
Source Latitude:	40.04445
Source Longitude:	-80.53023
Reference WMP:	1874

Comments:

- Grant Town Water

Type:	Purchased Water
County:	Marion
Owner:	Town of Grant Town
Source Latitude:	39.559407
Source Longitude:	-80.172893
Reference WMP:	

Comments:
@ Horizon Ventures Withdrawal Location

- Heartwood Forestland Freshwater Impoundment

Type:	Centralized Freshwater Impoundment

County:	Ritchie
Owner:	Wanda Bartlett
Source Latitude:	39.123961
Source Longitude:	-81.098573
Reference WMP:	1878

Comments:

- Helen Miller Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Helen J. Miller
Source Latitude:	40.085722
Source Longitude:	-80.623333
Reference WMP:	1059

Comments:

- Hickman Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Mark Hickman et al
Source Latitude:	40.041361
Source Longitude:	-80.548944
Reference WMP:	1875

Comments:

- Hieronimus #1 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.811
Source Longitude:	-80.5212
Reference WMP:	1856

Comments:

- Hieronimus #2 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8149
Source Longitude:	-80.5233

Reference WMP:	1857

Comments:

- Hieronimus #3 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8162
Source Longitude:	-80.5266
Reference WMP:	1761

Comments:

- Hieronimus #4 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8198
Source Longitude:	-80.5295
Reference WMP:	1858

Comments:

- Hupp 1 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Hupp
Source Latitude:	40.175058
Source Longitude:	-80.567622
Reference WMP:	1873

Comments:

- Hupp 2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Wylie Hupp
Source Latitude:	40.175069
Source Longitude:	-80.578206
Reference WMP:	1058

Comments:

- Hydro Recovery, LP

Type:	Purchased Water
County:	Washington, PA
Owner:	Hydro Recovery, LP - Burgettstown
Source Latitude:	40.419251
Source Longitude:	-80.422684
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Kelley #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Margaret Sue Kelley
Source Latitude:	39.681388
Source Longitude:	-80.701113
Reference WMP:	1865

Comments:

- Kestner Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Gary Kestner
Source Latitude:	40.147904
Source Longitude:	-80.539568
Reference WMP:	1872

Comments:

- Linda Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Linda Greathouse
Source Latitude:	40.205416
Source Longitude:	-80.608805
Reference WMP:	1876

Comments:

- Lipps Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur

Owner:	Ralph and Opal Lipps
Source Latitude:	38.8446
Source Longitude:	-80.3413
Reference WMP:	1850

Comments:

- McGlumphy Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Steven M. McGlumphy
Source Latitude:	40.152588
Source Longitude:	-80.587667
Reference WMP:	1060

Comments:

- Messenger Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Chesapeake Energy
Source Latitude:	393674857
Source Longitude:	-80.689887
Reference WMP:	1859

Comments:

- Pennsylvania American Water

Type:	Purchased Water
County:	
Owner:	Pennsylvania American Water
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Raw Water Pond @ Horizon Ventures

Type:	Purchased Water
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Source Latitude:	39.5535
Source Longitude:	-80.16742

Reference WMP:	

Comments:

- Recycled Frac Water

Type:	Recycled Frac Water
County:	
Owner:	
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Treated and recycled flowback/produced water sources may include, but are not limited to this well pad.

- Reliance Minerals A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.521316
Source Longitude:	-79.973907
Reference WMP:	1868

Comments:

- Reliance Minerals B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.524571
Source Longitude:	-79.974529
Reference WMP:	1867

Comments:

- Robinson Fork @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy II Appalachia, LLC.
Source Latitude:	39.979222
Source Longitude:	-80.487472
Reference WMP:	

Comments:

- Ross #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Mike Ross
Source Latitude:	38.9839
Source Longitude:	-80.2628
Reference WMP:	1851

Comments:

- Stern Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Marshall
Owner:	Alton and Mary Stern
Source Latitude:	39.733943
Source Longitude:	-80.64695
Reference WMP:	1826

Comments:

- WFN Impoundment A @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy, LLC
Source Latitude:	39.991417
Source Longitude:	-80.488694
Reference WMP:	

Comments:

- WFN Impoundment B @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy
Source Latitude:	39.991917
Source Longitude:	-80.4965
Reference WMP:	

Comments:

- Washington Pike PSD @ Brook Hills Park

Type:	Purchased Water
County:	Brooke
Owner:	Washington Pike PSD
Source Latitude:	40.26632
Source Longitude:	-80.543592
Reference WMP:	

Comments:

- Worthley Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Kimberly Worthley
Source Latitude:	40.216869
Source Longitude:	-80.548592
Reference WMP:	1061

Comments:

West Virginia Department of Environmental Protection

601 57th Street SE

Charleston, WV

Pollution and Emergency Spills 1-800-642-3074

www.dep.wv.gov

Water Management Plan

Action: Modified **Effective Date:** 3/30/2022
Operator: SWN Production Company, LLC
WMP ID: 1992
Plan Type: Well Pad
Facility Name: David Reinbeau MSH Well Pad
County: Marshall
Lat: 39.992859
Long: -80.66133

APPROVED
By Dawn Newell at 2:23 pm, 3/30/22

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supersedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

Api	Wellname
047-051-01623	David Reinbeau MSH 10H
047-051-01630	David Reinbeau MSH 5H
047-051-02438	David Reinbeau MSH 1H
047-051-02439	David Reinbeau MSH 3H
047-051-02440	David Reinbeau MSH 201H

The following water consumption estimates (in gallons) have been reported for this plan.

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	13,759,200
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activities:	210,000
Total for Well Pad:	14,809,200

Primary Sources

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and

- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and enforceable as such.

For any source identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this Water Management Plan.

- Big Wheeling Creek @ Hogg

Type:	Stream/River
County:	Marshall
Owner:	Don Hogg
Intake Latitude:	39.984529
Intake Longitude:	-80.634106
HUC-8 Code:	5030106
Drainage Area (sq miles):	201.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.23
Minimum Passby (cfs):	27.28
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5040

Comments:

- Big Wheeling Creek @ Wheeling Staging Area

Type:	Stream/River
County:	Ohio

Gauged Stream:	YES
Ref Gauge ID:	3112000

Owner:	Fulton Storage, LLC
Intake Latitude:	40.077019
Intake Longitude:	-80.713866
HUC-8 Code:	5030106
Drainage Area (sq miles):	296.04
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	43.57
Minimum Passby (cfs):	40.03
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Booths Creek @ Reliance Minerals

Type:	Stream/River
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Intake Latitude:	39.530405
Intake Longitude:	-79.978079
HUC-8 Code:	5020003
Drainage Area (sq miles):	1.79
Regulated Stream:	NO
PWS Within 1 Mile:	YES Morgantown Utility Board

Gauged Stream:	NO
Ref Gauge ID:	3062500
Ref Gauge Name:	DECKERS CREEK AT MORGANTOWN, WV
Minimum Gauge Reading (cfs):	18.65
Minimum Passby (cfs):	.48
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Buffalo Creek @ Bethany VFD Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Bethany Pike Volunteer Fire Department
Intake Latitude:	40.253422
Intake Longitude:	-80.600319
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	67.66
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Buffalo Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR

Intake Latitude:	40.19386
Intake Longitude:	-80.525796
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

	DILLONVALE, OH
Minimum Gauge Reading (cfs):	54.63
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3200

Comments:

- Buffalo Creek @ Forney

Type:	Stream/River
County:	Brooke
Owner:	Forney & Sons Holding Company, LLC
Intake Latitude:	40.193453
Intake Longitude:	-80.52175
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Fuchs

Type:	Stream/River
County:	Brooke
Owner:	Beverly Fuchs
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:

- Buffalo Creek @ Greathouse Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Linda Greathouse
Intake Latitude:	40.20895

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH

Intake Longitude:	-80.60105
HUC-8 Code:	5030106
Drainage Area (sq miles):	138.56
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Minimum Gauge Reading (cfs):	60.42
Minimum Passby (cfs):	54.51
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3300

Comments:

- Buffalo Creek @ Labelle Farms

Type:	Stream/River
County:	Brooke
Owner:	Steve Paul
Intake Latitude:	40.204444
Intake Longitude:	-80.598645
HUC-8 Code:	5030106
Drainage Area (sq miles):	136.79
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	59.2
Minimum Passby (cfs):	53.8
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Buffalo Creek @ WVDOH

Type:	Stream/River
County:	Brooke
Owner:	West Virginia Division of Highways
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Buffalo Creek @ Worthley Withdrawal Site

Type:	Stream/River

Gauged Stream:	NO

County:	Brooke
Owner:	Kimberly C. Worthley
Intake Latitude:	40.210978
Intake Longitude:	-80.548779
HUC-8 Code:	5030106
Drainage Area (sq miles):	113.49
Regulated Stream:	NO
PWS Within 1 Mile:	YES Hammond PSD

Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	44.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Zatta

Type:	Stream/River
County:	Brooke
Owner:	Edward Zatta
Intake Latitude:	40.253588
Intake Longitude:	-80.600254
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	66.37
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Cross Creek @ Bullock Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Isabelle Bullock
Intake Latitude:	40.30735
Intake Longitude:	-80.569317
HUC-8 Code:	5030101
Drainage Area (sq miles):	74.66
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	19.32
Minimum Passby (cfs):	20.99
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Cross Creek @ DNR

Type:	Stream/River
County:	Brooke

Gauged Stream:	NO
Ref Gauge ID:	3110830

Owner:	WVDNR
Intake Latitude:	40.300536
Intake Longitude:	-80.542229
HUC-8 Code:	5030101
Drainage Area (sq miles):	68.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	22.44
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Cross Creek @ Norfolk and Western Railway

Type:	Stream/River
County:	Brooke
Owner:	Wheeling & Lake Erie Railway Company
Intake Latitude:	40.30802
Intake Longitude:	-80.599193
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Cross Creek @ Palizzi

Type:	Stream/River
County:	Brooke
Owner:	Campbell Palizzi
Intake Latitude:	40.302427
Intake Longitude:	-80.582753
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	23.11
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Fish Creek @ Gribben

Type:	Stream/River
County:	Marshall
Owner:	Revocable Living Trust of M. Peggy Gribben
Intake Latitude:	39.753271
Intake Longitude:	-80.597913
HUC-8 Code:	5030106
Drainage Area (sq miles):	141.61
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	23.94
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Fish Creek @ Guzek

Type:	Stream/River
County:	Marshall
Owner:	Walter A. Guzek
Intake Latitude:	39.753021
Intake Longitude:	-80.613941
HUC-8 Code:	5030106
Drainage Area (sq miles):	144.57
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	24.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Little Wheeling Creek @ Edge Withdrawal Site

Type:	Stream/River
County:	Ohio
Owner:	Alice Mae Edge
Intake Latitude:	40.098
Intake Longitude:	-80.5558
HUC-8 Code:	5030106
Drainage Area (sq miles):	4.26
Regulated Stream:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES

PWS Within 1 Mile:	NO

Maximum Pump Rate (gpm):	2000

Comments:

- Little Wheeling Creek @ Main Street Bank

Type:	Stream/River
County:	Ohio
Owner:	Main Street Bank
Intake Latitude:	40.064076
Intake Longitude:	-80.614406
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	23
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Little Wheeling Creek @ Rt. 40 Staging Area

Type:	Stream/River
County:	Ohio
Owner:	JDS Investments, LLC
Intake Latitude:	40.078324
Intake Longitude:	-80.591145
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	64.8
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Gribben

Type:	Stream/River
County:	Ohio
Owner:	Lawrence Kevin Gribber
Intake Latitude:	40.036777
Intake Longitude:	-80.598008
HUC-8 Code:	5030106
Drainage Area (sq miles):	30.81
Regulated Stream:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	6.26
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate	2000

PWS Within 1 Mile:	NO	(gpm):	

Comments:

- Middle Wheeling Creek @ Supler

Type:	Stream/River	Gauged Stream:	NO
County:	Ohio	Ref Gauge ID:	3112000
Owner:	Gregory and Peggy Supler	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Intake Latitude:	40.04409	Minimum Gauge Reading (cfs):	62.57
Intake Longitude:	-80.55348	Minimum Passby (cfs):	4.17
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	20.54	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	2500
PWS Within 1 Mile:	NO		

Comments:

- Ohio River @ Extraction B Panhandle

Type:	Stream/River	Gauged Stream:	YES
County:	Brooke	Ref Gauge ID:	9999999
Owner:	SWN Production Company, LLC	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	40.233469	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.654359	Minimum Passby (cfs):	
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	25000	Mussel Stream:	YES
Regulated Stream:	YES Ohio River Min. Flow	Maximum Pump Rate (gpm):	4375
PWS Within 1 Mile:	YES Beech Bottom Water Dept.		

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Proctor Peacemaker

Type:	Stream/River	Gauged Stream:	YES
County:	Wetzel	Ref Gauge ID:	9999999
Owner:	SWN Production Company, LLC	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	39.714299	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.825862	Minimum Passby (cfs):	
HUC-8 Code:	5030106		
Drainage Area (sq	25000		

miles):	
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	6000

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Paw Paw Creek @ Horizon Ventures

Type:	Stream/River
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Intake Latitude:	39.552426
Intake Longitude:	-80.166833
HUC-8 Code:	5020003
Drainage Area (sq miles):	28.34
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	26.96
Minimum Passby (cfs):	4.57
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Short Creek @ Cain

Type:	Stream/River
County:	Ohio
Owner:	Susan L. Cain
Intake Latitude:	40.155061
Intake Longitude:	-80.651431
HUC-8 Code:	5030106
Drainage Area (sq miles):	16.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	64.49
Minimum Passby (cfs):	7.68
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	3360

Comments:

- WV Fork Fish Creek @ Derby

Type:	Stream/River
County:	Wetzel
Owner:	Steven Derby
Intake Latitude:	39.709329
Intake Longitude:	-80.536079

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	52.24

HUC-8 Code:	5030106
Drainage Area (sq miles):	48.62
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Minimum Passby (cfs):	8.21
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- WV Fork Fish Creek @ Francis

Type:	Stream/River
County:	Marshall
Owner:	Loretta J. Francis
Intake Latitude:	39.733295
Intake Longitude:	-80.579415
HUC-8 Code:	5030106
Drainage Area (sq miles):	86.51
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	63.69
Minimum Passby (cfs):	17.55
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:

- WV Fork of Fish Creek @ Van Scyoc Withdrawal Site

Type:	Stream/River
County:	Wetzel
Owner:	Israel D Van Scyoc
Intake Latitude:	39.6908
Intake Longitude:	-80.4762
HUC-8 Code:	5030106
Drainage Area (sq miles):	21.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	5.45
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Wheeling Creek @ Iskcon

Type:	Stream/River
County:	Marshall
Owner:	Iskcon New Vrindaban, Inc.
Intake Latitude:	39.967973
Intake Longitude:	-80.599241
HUC-8 Code:	5030106
Drainage Area (sq	189.6

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	27.5
Endangered Species:	NO

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Wheeling Creek @ Schafer

Type:	Stream/River
County:	Marshall
Owner:	Betty Jane Schafer
Intake Latitude:	39.99257
Intake Longitude:	-80.634912
HUC-8 Code:	5030106
Drainage Area (sq miles):	203.38
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.7
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Wheeling Creek @ Sligar

Type:	Stream/River
County:	Marshall
Owner:	Terry Sligar
Intake Latitude:	40.013185
Intake Longitude:	-80.652863
HUC-8 Code:	5030106
Drainage Area (sq miles):	211.8
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	28.64
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
This site shall not be operated concurrently with the Wheeling Creek @ Schafer location or Wheeling Creek @ Iskcon site.

- Whiteday Creek @ Sorine Withdrawal Site

Type:	Stream/River
County:	Marion
Owner:	Andrew Sorine, Jr.
Intake Latitude:	39.472311
Intake Longitude:	-79.977123

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	20.25

HUC-8 Code:	5020003
Drainage Area (sq miles):	12.29
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Minimum Passby (cfs):	2.29
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Adrian Public Service District

Type:	Purchased Water
County:	Upshur
Owner:	Adrian Public Service District
Intake Latitude:	38.9775
Intake Longitude:	-80.22083
HUC-8 Code:	5020001
Drainage Area (sq miles):	197.33
Regulated Stream:	YES
PWS Within 1 Mile:	YES City of Buckhannon Water Plant

Gauged Stream:	YES
Ref Gauge ID:	3054500
Ref Gauge Name:	TYGART VALLEY RIVER AT PHILIPPI, WV
Minimum Gauge Reading (cfs):	155.85
Minimum Passby (cfs):	75.51
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:

- American Petroleum Partners (Wheeling Creek @ Wilson)

Type:	Purchased Water
County:	Marshall
Owner:	American Petroleum Partners, LLC
Intake Latitude:	39.975882
Intake Longitude:	-80.62967
HUC-8 Code:	5030106
Drainage Area (sq miles):	192.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	26.09
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- Covestro, LLC

Type:	Purchased Water
County:	Marshall
Owner:	Covestro, LLC
Intake Latitude:	39.7218
Intake Longitude:	-80.830231
HUC-8 Code:	5030201

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading	6468

Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

(cfs):	
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Elite Gasfield Services

Type:	Purchased Water
County:	Brooke
Owner:	Elite Gasfield Services
Intake Latitude:	40.32667
Intake Longitude:	-80.59861
HUC-8 Code:	5030101
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES City of Follansbee

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Grandview-Doolin PSD

Type:	Purchased Water
County:	Wetzel
Owner:	Grandview-Doolin Public Service District
Intake Latitude:	39.71361
Intake Longitude:	-80.82583
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Marshall County Public Service District 3

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #3
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Tap Location is: (39.906400, -80.586200)

- Marshall County Public Service District 4

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #4
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Ohio County PSD

Type:	Purchased Water
County:	Ohio
Owner:	Ohio county PSD
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO

Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ 4K Industrial Park

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Intake Latitude:	40.098805
Intake Longitude:	-80.711328
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ J&R Excavating

Type:	Purchased Water
County:	Marshall
Owner:	J&R Excavating
Intake Latitude:	39.998509
Intake Longitude:	-80.737336
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Oasis Transport Withdrawal Site

Type:	Purchased Water
County:	Brooke

Gauged Stream:	YES
Ref Gauge ID:	9999999

Owner:	Oasis Transport, LLC
Intake Latitude:	40.331551
Intake Longitude:	-80.601034
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Range Tap @ Corbin Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Range Resources Corp.
Intake Latitude:	40.229983
Intake Longitude:	-80.521067
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- The Village of Valley Grove

Type:	Purchased Water
County:	Ohio
Owner:	The Village of Valley Grove
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Valley Falls PSD

Type:	Purchased Water
County:	Marion
Owner:	Valley Falls PSD
Intake Latitude:	39.45889
Intake Longitude:	-80.15583
HUC-8 Code:	5020001
Drainage Area (sq miles):	1367.05
Regulated Stream:	YES Tygart Valley Dam
PWS Within 1 Mile:	YES City of Fairmont

Gauged Stream:	YES
Ref Gauge ID:	3057000
Ref Gauge Name:	TYGART VALLEY RIVER AT COLFAX, WV
Minimum Gauge Reading (cfs):	397.39
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek # 2 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.949577
Intake Longitude:	-80.531255
HUC-8 Code:	5030106
Drainage Area (sq miles):	152.4
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.24
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #1 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.95205
Intake Longitude:	-80.56189
HUC-8 Code:	5030106
Drainage Area (sq miles):	156.06
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.63
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Water Department

Type:	Purchased Water
County:	Ohio
Owner:	Wheeling Water Department
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Shoemaker Groundwater Wells @ HG Energy

Type:	Ground Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	40.0222
Intake Longitude:	-80.733888
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	800

Comments:
This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals. https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Secondary Sources

For each proposed secondary water source identified in your water management plan (i.e. groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow and quality-tested by the operator at the request of the drinking well owner prior to the operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.
- The use of recycled frac water is always encouraged.

- 4K Industrial Park, LLC

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Source Latitude:	40.100395
Source Longitude:	-80.71269
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Ballato Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Nick Ballato and Christopher Ballato
Source Latitude:	40.308611
Source Longitude:	-80.565028
Reference WMP:	1877

Comments:

- Barry Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Barry Greathouse
Source Latitude:	40.18831
Source Longitude:	-80.63714
Reference WMP:	1869

Comments:

- Columbia Gas Transmission (TCO Elson) FWI

Type:	Purchased Water
County:	Marshall

Owner:	Columbia Gas Transmission, LLC.
Source Latitude:	39.75398
Source Longitude:	-80.613604
Reference WMP:	547

Comments:

- Corbin Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Margaret Corbin
Source Latitude:	40.233122
Source Longitude:	-80.524025
Reference WMP:	1870

Comments:

- Durig A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	39.715905
Source Longitude:	-80.636785
Reference WMP:	1862

Comments:

- Durig B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	38.8022
Source Longitude:	-80.638491
Reference WMP:	1863

Comments:

- Elite Gasfield Services, Midland Borough

Type:	Purchased Water
County:	Beaver, PA
Owner:	Elite Gasfield Services
Source Latitude:	40.644598
Source Longitude:	-80.469382
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Elmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Charles and Thomas Elmer
Source Latitude:	38.831351
Source Longitude:	-80.276326
Reference WMP:	1847

Comments:

- Equitrans Water Services, LLC Cook Impoundment

Type:	Purchased Water
County:	Greene, PA
Owner:	Equitrans Water Services, LLC
Source Latitude:	39.817197
Source Longitude:	-80.477956
Reference WMP:	

Comments:
PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.

- Farmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Clarence Farmer
Source Latitude:	40.146183
Source Longitude:	-80.573857
Reference WMP:	1871

Comments:

- Ferrell Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Kevin Ferrell
Source Latitude:	40.04445
Source Longitude:	-80.53023
Reference WMP:	1874

Comments:

- Grant Town Water

Type:	Purchased Water
County:	Marion
Owner:	Town of Grant Town
Source Latitude:	39.559407
Source Longitude:	-80.172893
Reference WMP:	

Comments:
@ Horizon Ventures Withdrawal Location

- Heartwood Forestland Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ritchie
Owner:	Wanda Bartlett
Source Latitude:	39.123961
Source Longitude:	-81.098573
Reference WMP:	1878

Comments:

- Helen Miller Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Helen J. Miller
Source Latitude:	40.085722
Source Longitude:	-80.623333
Reference WMP:	1059

Comments:

- Hickman Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Mark Hickman et al
Source Latitude:	40.041361
Source Longitude:	-80.548944
Reference WMP:	1875

Comments:

- Hieronimus #1 Freshwater Impoundment

Type:	Purchased Water

County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.811
Source Longitude:	-80.5212
Reference WMP:	1856

Comments:

- Hieronimus #2 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8149
Source Longitude:	-80.5233
Reference WMP:	1857

Comments:

- Hieronimus #3 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8162
Source Longitude:	-80.5266
Reference WMP:	1761

Comments:

- Hieronimus #4 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8198
Source Longitude:	-80.5295
Reference WMP:	1858

Comments:

- Hupp 1 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Hupp
Source Latitude:	40.175058

Source Longitude:	-80.567622
Reference WMP:	1873

Comments:

- Hupp 2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Wylie Hupp
Source Latitude:	40.175069
Source Longitude:	-80.578206
Reference WMP:	1058

Comments:

- Hydro Recovery, LP

Type:	Purchased Water
County:	Washington, PA
Owner:	Hydro Recovery, LP - Burgettstown
Source Latitude:	40.419251
Source Longitude:	-80.422684
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Kelley #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Margaret Sue Kelley
Source Latitude:	39.681388
Source Longitude:	-80.701113
Reference WMP:	1865

Comments:

- Kestner Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Gary Kestner
Source Latitude:	40.147904
Source Longitude:	-80.539568
Reference WMP:	1872

Comments:

- Linda Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Linda Greathouse
Source Latitude:	40.205416
Source Longitude:	-80.608805
Reference WMP:	1876

Comments:

- Lipps Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Ralph and Opal Lipps
Source Latitude:	38.8446
Source Longitude:	-80.3413
Reference WMP:	1850

Comments:

- McGlumphy Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Steven M. McGlumphy
Source Latitude:	40.152588
Source Longitude:	-80.587667
Reference WMP:	1060

Comments:

- Messenger Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Chesapeake Energy
Source Latitude:	393674857
Source Longitude:	-80.689887
Reference WMP:	1859

Comments:

- Pennsylvania American Water

Type:	Purchased Water
County:	

Owner:	Pennsylvania American Water
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Raw Water Pond @ Horizon Ventures

Type:	Purchased Water
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Source Latitude:	39.5535
Source Longitude:	-80.16742
Reference WMP:	

Comments:

- Recycled Frac Water

Type:	Recycled Frac Water
County:	
Owner:	
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Treated and recycled flowback/produced water sources may include, but are not limited to this well pad.

- Reliance Minerals A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.521316
Source Longitude:	-79.973907
Reference WMP:	1868

Comments:

- Reliance Minerals B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.524571

Source Longitude:	-79.974529
Reference WMP:	1867

Comments:

- Robinson Fork @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy II Appalachia, LLC.
Source Latitude:	39.979222
Source Longitude:	-80.487472
Reference WMP:	

Comments:

- Ross #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Mike Ross
Source Latitude:	38.9839
Source Longitude:	-80.2628
Reference WMP:	1851

Comments:

- Stern Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Marshall
Owner:	Alton and Mary Stern
Source Latitude:	39.733943
Source Longitude:	-80.64695
Reference WMP:	1826

Comments:

- WFN Impoundment A @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy, LLC
Source Latitude:	39.991417
Source Longitude:	-80.488694
Reference WMP:	

Comments:

- WFN Impoundment B @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy
Source Latitude:	39.991917
Source Longitude:	-80.4965
Reference WMP:	

Comments:

- Washington Pike PSD @ Brook Hills Park

Type:	Purchased Water
County:	Brooke
Owner:	Washington Pike PSD
Source Latitude:	40.26632
Source Longitude:	-80.543592
Reference WMP:	

Comments:

- Worthley Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Kimberly Worthley
Source Latitude:	40.216869
Source Longitude:	-80.548592
Reference WMP:	1061

Comments:

Water Management Plan

Action: Modified **Effective Date:** 3/30/2022
Operator: SWN Production Company, LLC
WMP ID: 1992
Plan Type: Well Pad
Facility Name: David Reinbeau MSH Well Pad
County: Marshall
Lat: 39.992859
Long: -80.66133

APPROVED
By Dawn Newell at 2:23 pm, 3/30/22

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supersedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

Api	Wellname
047-051-01623	David Reinbeau MSH 10H
047-051-01630	David Reinbeau MSH 5H
047-051-02438	David Reinbeau MSH 1H
047-051-02439	David Reinbeau MSH 3H
047-051-02440	David Reinbeau MSH 201H

The following water consumption estimates (in gallons) have been reported for this plan.

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	13,759,200
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activities:	210,000
Total for Well Pad:	14,809,200

Primary Sources

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and

- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and enforceable as such.

For any source identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this Water Management Plan.

- Big Wheeling Creek @ Hogg

Type:	Stream/River
County:	Marshall
Owner:	Don Hogg
Intake Latitude:	39.984529
Intake Longitude:	-80.634106
HUC-8 Code:	5030106
Drainage Area (sq miles):	201.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.23
Minimum Passby (cfs):	27.28
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5040

Comments:

- Big Wheeling Creek @ Wheeling Staging Area

Type:	Stream/River
County:	Ohio

Gauged Stream:	YES
Ref Gauge ID:	3112000

Owner:	Fulton Storage, LLC
Intake Latitude:	40.077019
Intake Longitude:	-80.713866
HUC-8 Code:	5030106
Drainage Area (sq miles):	296.04
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	43.57
Minimum Passby (cfs):	40.03
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Booths Creek @ Reliance Minerals

Type:	Stream/River
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Intake Latitude:	39.530405
Intake Longitude:	-79.978079
HUC-8 Code:	5020003
Drainage Area (sq miles):	1.79
Regulated Stream:	NO
PWS Within 1 Mile:	YES Morgantown Utility Board

Gauged Stream:	NO
Ref Gauge ID:	3062500
Ref Gauge Name:	DECKERS CREEK AT MORGANTOWN, WV
Minimum Gauge Reading (cfs):	18.65
Minimum Passby (cfs):	.48
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Buffalo Creek @ Bethany VFD Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Bethany Pike Volunteer Fire Department
Intake Latitude:	40.253422
Intake Longitude:	-80.600319
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	67.66
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Buffalo Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR

Intake Latitude:	40.19386
Intake Longitude:	-80.525796
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

	DILLONVALE, OH
Minimum Gauge Reading (cfs):	54.63
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3200

Comments:

- Buffalo Creek @ Forney

Type:	Stream/River
County:	Brooke
Owner:	Forney & Sons Holding Company, LLC
Intake Latitude:	40.193453
Intake Longitude:	-80.52175
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Fuchs

Type:	Stream/River
County:	Brooke
Owner:	Beverly Fuchs
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:

- Buffalo Creek @ Greathouse Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Linda Greathouse
Intake Latitude:	40.20895

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH

Intake Longitude:	-80.60105
HUC-8 Code:	5030106
Drainage Area (sq miles):	138.56
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Minimum Gauge Reading (cfs):	60.42
Minimum Passby (cfs):	54.51
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3300

Comments:

- Buffalo Creek @ Labelle Farms

Type:	Stream/River
County:	Brooke
Owner:	Steve Paul
Intake Latitude:	40.204444
Intake Longitude:	-80.598645
HUC-8 Code:	5030106
Drainage Area (sq miles):	136.79
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	59.2
Minimum Passby (cfs):	53.8
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Buffalo Creek @ WVDOH

Type:	Stream/River
County:	Brooke
Owner:	West Virginia Division of Highways
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Buffalo Creek @ Worthley Withdrawal Site

Type:	Stream/River

Gauged Stream:	NO

County:	Brooke
Owner:	Kimberly C. Worthley
Intake Latitude:	40.210978
Intake Longitude:	-80.548779
HUC-8 Code:	5030106
Drainage Area (sq miles):	113.49
Regulated Stream:	NO
PWS Within 1 Mile:	YES Hammond PSD

Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	44.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Zatta

Type:	Stream/River
County:	Brooke
Owner:	Edward Zatta
Intake Latitude:	40.253588
Intake Longitude:	-80.600254
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	66.37
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Cross Creek @ Bullock Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Isabelle Bullock
Intake Latitude:	40.30735
Intake Longitude:	-80.569317
HUC-8 Code:	5030101
Drainage Area (sq miles):	74.66
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	19.32
Minimum Passby (cfs):	20.99
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Cross Creek @ DNR

Type:	Stream/River
County:	Brooke

Gauged Stream:	NO
Ref Gauge ID:	3110830

Owner:	WVDNR
Intake Latitude:	40.300536
Intake Longitude:	-80.542229
HUC-8 Code:	5030101
Drainage Area (sq miles):	68.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	22.44
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Cross Creek @ Norfolk and Western Railway

Type:	Stream/River
County:	Brooke
Owner:	Wheeling & Lake Erie Railway Company
Intake Latitude:	40.30802
Intake Longitude:	-80.599193
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Cross Creek @ Palizzi

Type:	Stream/River
County:	Brooke
Owner:	Campbell Palizzi
Intake Latitude:	40.302427
Intake Longitude:	-80.582753
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	23.11
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Fish Creek @ Gribben

Type:	Stream/River
County:	Marshall
Owner:	Revocable Living Trust of M. Peggy Gribben
Intake Latitude:	39.753271
Intake Longitude:	-80.597913
HUC-8 Code:	5030106
Drainage Area (sq miles):	141.61
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	23.94
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Fish Creek @ Guzek

Type:	Stream/River
County:	Marshall
Owner:	Walter A. Guzek
Intake Latitude:	39.753021
Intake Longitude:	-80.613941
HUC-8 Code:	5030106
Drainage Area (sq miles):	144.57
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	24.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Little Wheeling Creek @ Edge Withdrawal Site

Type:	Stream/River
County:	Ohio
Owner:	Alice Mae Edge
Intake Latitude:	40.098
Intake Longitude:	-80.5558
HUC-8 Code:	5030106
Drainage Area (sq miles):	4.26
Regulated Stream:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES

PWS Within 1 Mile:	NO

Maximum Pump Rate (gpm):	2000

Comments:

- Little Wheeling Creek @ Main Street Bank

Type:	Stream/River
County:	Ohio
Owner:	Main Street Bank
Intake Latitude:	40.064076
Intake Longitude:	-80.614406
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	23
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Little Wheeling Creek @ Rt. 40 Staging Area

Type:	Stream/River
County:	Ohio
Owner:	JDS Investments, LLC
Intake Latitude:	40.078324
Intake Longitude:	-80.591145
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	64.8
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Gribben

Type:	Stream/River
County:	Ohio
Owner:	Lawrence Kevin Gribber
Intake Latitude:	40.036777
Intake Longitude:	-80.598008
HUC-8 Code:	5030106
Drainage Area (sq miles):	30.81
Regulated Stream:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	6.26
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate	2000

PWS Within 1 Mile:	NO	(gpm):	

Comments:

- Middle Wheeling Creek @ Supler

Type:	Stream/River	Gauged Stream:	NO
County:	Ohio	Ref Gauge ID:	3112000
Owner:	Gregory and Peggy Supler	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Intake Latitude:	40.04409	Minimum Gauge Reading (cfs):	62.57
Intake Longitude:	-80.55348	Minimum Passby (cfs):	4.17
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	20.54	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	2500
PWS Within 1 Mile:	NO		

Comments:

- Ohio River @ Extraction B Panhandle

Type:	Stream/River	Gauged Stream:	YES
County:	Brooke	Ref Gauge ID:	9999999
Owner:	SWN Production Company, LLC	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	40.233469	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.654359	Minimum Passby (cfs):	
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	25000	Mussel Stream:	YES
Regulated Stream:	YES Ohio River Min. Flow	Maximum Pump Rate (gpm):	4375
PWS Within 1 Mile:	YES Beech Bottom Water Dept.		

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Proctor Peacemaker

Type:	Stream/River	Gauged Stream:	YES
County:	Wetzel	Ref Gauge ID:	9999999
Owner:	SWN Production Company, LLC	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	39.714299	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.825862	Minimum Passby (cfs):	
HUC-8 Code:	5030106		
Drainage Area (sq	25000		

miles):	
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	6000

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Paw Paw Creek @ Horizon Ventures

Type:	Stream/River
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Intake Latitude:	39.552426
Intake Longitude:	-80.166833
HUC-8 Code:	5020003
Drainage Area (sq miles):	28.34
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	26.96
Minimum Passby (cfs):	4.57
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Short Creek @ Cain

Type:	Stream/River
County:	Ohio
Owner:	Susan L. Cain
Intake Latitude:	40.155061
Intake Longitude:	-80.651431
HUC-8 Code:	5030106
Drainage Area (sq miles):	16.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	64.49
Minimum Passby (cfs):	7.68
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	3360

Comments:

- WV Fork Fish Creek @ Derby

Type:	Stream/River
County:	Wetzel
Owner:	Steven Derby
Intake Latitude:	39.709329
Intake Longitude:	-80.536079

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	52.24

HUC-8 Code:	5030106
Drainage Area (sq miles):	48.62
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Minimum Passby (cfs):	8.21
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- WV Fork Fish Creek @ Francis

Type:	Stream/River
County:	Marshall
Owner:	Loretta J. Francis
Intake Latitude:	39.733295
Intake Longitude:	-80.579415
HUC-8 Code:	5030106
Drainage Area (sq miles):	86.51
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	63.69
Minimum Passby (cfs):	17.55
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:

- WV Fork of Fish Creek @ Van Scyoc Withdrawal Site

Type:	Stream/River
County:	Wetzel
Owner:	Israel D Van Scyoc
Intake Latitude:	39.6908
Intake Longitude:	-80.4762
HUC-8 Code:	5030106
Drainage Area (sq miles):	21.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	5.45
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Wheeling Creek @ Iskcon

Type:	Stream/River
County:	Marshall
Owner:	Iskcon New Vrindaban, Inc.
Intake Latitude:	39.967973
Intake Longitude:	-80.599241
HUC-8 Code:	5030106
Drainage Area (sq	189.6

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	27.5
Endangered Species:	NO

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Wheeling Creek @ Schafer

Type:	Stream/River
County:	Marshall
Owner:	Betty Jane Schafer
Intake Latitude:	39.99257
Intake Longitude:	-80.634912
HUC-8 Code:	5030106
Drainage Area (sq miles):	203.38
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.7
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Wheeling Creek @ Sligar

Type:	Stream/River
County:	Marshall
Owner:	Terry Sligar
Intake Latitude:	40.013185
Intake Longitude:	-80.652863
HUC-8 Code:	5030106
Drainage Area (sq miles):	211.8
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	28.64
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
This site shall not be operated concurrently with the Wheeling Creek @ Schafer location or Wheeling Creek @ Iskcon site.

- Whiteday Creek @ Sorine Withdrawal Site

Type:	Stream/River
County:	Marion
Owner:	Andrew Sorine, Jr.
Intake Latitude:	39.472311
Intake Longitude:	-79.977123

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	20.25

HUC-8 Code:	5020003
Drainage Area (sq miles):	12.29
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Minimum Passby (cfs):	2.29
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Adrian Public Service District

Type:	Purchased Water
County:	Upshur
Owner:	Adrian Public Service District
Intake Latitude:	38.9775
Intake Longitude:	-80.22083
HUC-8 Code:	5020001
Drainage Area (sq miles):	197.33
Regulated Stream:	YES
PWS Within 1 Mile:	YES City of Buckhannon Water Plant

Gauged Stream:	YES
Ref Gauge ID:	3054500
Ref Gauge Name:	TYGART VALLEY RIVER AT PHILIPPI, WV
Minimum Gauge Reading (cfs):	155.85
Minimum Passby (cfs):	75.51
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:

- American Petroleum Partners (Wheeling Creek @ Wilson)

Type:	Purchased Water
County:	Marshall
Owner:	American Petroleum Partners, LLC
Intake Latitude:	39.975882
Intake Longitude:	-80.62967
HUC-8 Code:	5030106
Drainage Area (sq miles):	192.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	26.09
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- Covestro, LLC

Type:	Purchased Water
County:	Marshall
Owner:	Covestro, LLC
Intake Latitude:	39.7218
Intake Longitude:	-80.830231
HUC-8 Code:	5030201

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading	6468

Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

(cfs):	
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Elite Gasfield Services

Type:	Purchased Water
County:	Brooke
Owner:	Elite Gasfield Services
Intake Latitude:	40.32667
Intake Longitude:	-80.59861
HUC-8 Code:	5030101
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES City of Follansbee

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Grandview-Doolin PSD

Type:	Purchased Water
County:	Wetzel
Owner:	Grandview-Doolin Public Service District
Intake Latitude:	39.71361
Intake Longitude:	-80.82583
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Marshall County Public Service District 3

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #3
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Tap Location is: (39.906400, -80.586200)

- Marshall County Public Service District 4

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #4
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Ohio County PSD

Type:	Purchased Water
County:	Ohio
Owner:	Ohio county PSD
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO

Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ 4K Industrial Park

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Intake Latitude:	40.098805
Intake Longitude:	-80.711328
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ J&R Excavating

Type:	Purchased Water
County:	Marshall
Owner:	J&R Excavating
Intake Latitude:	39.998509
Intake Longitude:	-80.737336
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Oasis Transport Withdrawal Site

Type:	Purchased Water
County:	Brooke

Gauged Stream:	YES
Ref Gauge ID:	9999999

Owner:	Oasis Transport, LLC
Intake Latitude:	40.331551
Intake Longitude:	-80.601034
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Range Tap @ Corbin Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Range Resources Corp.
Intake Latitude:	40.229983
Intake Longitude:	-80.521067
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- The Village of Valley Grove

Type:	Purchased Water
County:	Ohio
Owner:	The Village of Valley Grove
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Valley Falls PSD

Type:	Purchased Water
County:	Marion
Owner:	Valley Falls PSD
Intake Latitude:	39.45889
Intake Longitude:	-80.15583
HUC-8 Code:	5020001
Drainage Area (sq miles):	1367.05
Regulated Stream:	YES Tygart Valley Dam
PWS Within 1 Mile:	YES City of Fairmont

Gauged Stream:	YES
Ref Gauge ID:	3057000
Ref Gauge Name:	TYGART VALLEY RIVER AT COLFAX, WV
Minimum Gauge Reading (cfs):	397.39
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek # 2 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.949577
Intake Longitude:	-80.531255
HUC-8 Code:	5030106
Drainage Area (sq miles):	152.4
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.24
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #1 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.95205
Intake Longitude:	-80.56189
HUC-8 Code:	5030106
Drainage Area (sq miles):	156.06
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.63
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Water Department

Type:	Purchased Water
County:	Ohio
Owner:	Wheeling Water Department
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Shoemaker Groundwater Wells @ HG Energy

Type:	Ground Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	40.0222
Intake Longitude:	-80.733888
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	800

Comments:
This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals. https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Secondary Sources

For each proposed secondary water source identified in your water management plan (i.e. groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow and quality-tested by the operator at the request of the drinking well owner prior to the operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.
- The use of recycled frac water is always encouraged.

- 4K Industrial Park, LLC

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Source Latitude:	40.100395
Source Longitude:	-80.71269
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Ballato Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Nick Ballato and Christopher Ballato
Source Latitude:	40.308611
Source Longitude:	-80.565028
Reference WMP:	1877

Comments:

- Barry Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Barry Greathouse
Source Latitude:	40.18831
Source Longitude:	-80.63714
Reference WMP:	1869

Comments:

- Columbia Gas Transmission (TCO Elson) FWI

Type:	Purchased Water
County:	Marshall

Owner:	Columbia Gas Transmission, LLC.
Source Latitude:	39.75398
Source Longitude:	-80.613604
Reference WMP:	547

Comments:

- Corbin Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Margaret Corbin
Source Latitude:	40.233122
Source Longitude:	-80.524025
Reference WMP:	1870

Comments:

- Durig A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	39.715905
Source Longitude:	-80.636785
Reference WMP:	1862

Comments:

- Durig B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	38.8022
Source Longitude:	-80.638491
Reference WMP:	1863

Comments:

- Elite Gasfield Services, Midland Borough

Type:	Purchased Water
County:	Beaver, PA
Owner:	Elite Gasfield Services
Source Latitude:	40.644598
Source Longitude:	-80.469382
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Elmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Charles and Thomas Elmer
Source Latitude:	38.831351
Source Longitude:	-80.276326
Reference WMP:	1847

Comments:

- Equitrans Water Services, LLC Cook Impoundment

Type:	Purchased Water
County:	Greene, PA
Owner:	Equitrans Water Services, LLC
Source Latitude:	39.817197
Source Longitude:	-80.477956
Reference WMP:	

Comments:
PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.

- Farmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Clarence Farmer
Source Latitude:	40.146183
Source Longitude:	-80.573857
Reference WMP:	1871

Comments:

- Ferrell Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Kevin Ferrell
Source Latitude:	40.04445
Source Longitude:	-80.53023
Reference WMP:	1874

Comments:

- Grant Town Water

Type:	Purchased Water
County:	Marion
Owner:	Town of Grant Town
Source Latitude:	39.559407
Source Longitude:	-80.172893
Reference WMP:	

Comments:
@ Horizon Ventures Withdrawal Location

- Heartwood Forestland Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ritchie
Owner:	Wanda Bartlett
Source Latitude:	39.123961
Source Longitude:	-81.098573
Reference WMP:	1878

Comments:

- Helen Miller Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Helen J. Miller
Source Latitude:	40.085722
Source Longitude:	-80.623333
Reference WMP:	1059

Comments:

- Hickman Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Mark Hickman et al
Source Latitude:	40.041361
Source Longitude:	-80.548944
Reference WMP:	1875

Comments:

- Hieronimus #1 Freshwater Impoundment

Type:	Purchased Water

County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.811
Source Longitude:	-80.5212
Reference WMP:	1856

Comments:

- Hieronimus #2 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8149
Source Longitude:	-80.5233
Reference WMP:	1857

Comments:

- Hieronimus #3 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8162
Source Longitude:	-80.5266
Reference WMP:	1761

Comments:

- Hieronimus #4 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8198
Source Longitude:	-80.5295
Reference WMP:	1858

Comments:

- Hupp 1 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Hupp
Source Latitude:	40.175058

Source Longitude:	-80.567622
Reference WMP:	1873

Comments:

- Hupp 2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Wylie Hupp
Source Latitude:	40.175069
Source Longitude:	-80.578206
Reference WMP:	1058

Comments:

- Hydro Recovery, LP

Type:	Purchased Water
County:	Washington, PA
Owner:	Hydro Recovery, LP - Burgettstown
Source Latitude:	40.419251
Source Longitude:	-80.422684
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Kelley #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Margaret Sue Kelley
Source Latitude:	39.681388
Source Longitude:	-80.701113
Reference WMP:	1865

Comments:

- Kestner Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Gary Kestner
Source Latitude:	40.147904
Source Longitude:	-80.539568
Reference WMP:	1872

Comments:

- Linda Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Linda Greathouse
Source Latitude:	40.205416
Source Longitude:	-80.608805
Reference WMP:	1876

Comments:

- Lipps Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Ralph and Opal Lipps
Source Latitude:	38.8446
Source Longitude:	-80.3413
Reference WMP:	1850

Comments:

- McGlumphy Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Steven M. McGlumphy
Source Latitude:	40.152588
Source Longitude:	-80.587667
Reference WMP:	1060

Comments:

- Messenger Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Chesapeake Energy
Source Latitude:	393674857
Source Longitude:	-80.689887
Reference WMP:	1859

Comments:

- Pennsylvania American Water

Type:	Purchased Water
County:	

Owner:	Pennsylvania American Water
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Raw Water Pond @ Horizon Ventures

Type:	Purchased Water
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Source Latitude:	39.5535
Source Longitude:	-80.16742
Reference WMP:	

Comments:

- Recycled Frac Water

Type:	Recycled Frac Water
County:	
Owner:	
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Treated and recycled flowback/produced water sources may include, but are not limited to this well pad.

- Reliance Minerals A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.521316
Source Longitude:	-79.973907
Reference WMP:	1868

Comments:

- Reliance Minerals B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.524571

Source Longitude:	-79.974529
Reference WMP:	1867

Comments:

- Robinson Fork @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy II Appalachia, LLC.
Source Latitude:	39.979222
Source Longitude:	-80.487472
Reference WMP:	

Comments:

- Ross #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Mike Ross
Source Latitude:	38.9839
Source Longitude:	-80.2628
Reference WMP:	1851

Comments:

- Stern Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Marshall
Owner:	Alton and Mary Stern
Source Latitude:	39.733943
Source Longitude:	-80.64695
Reference WMP:	1826

Comments:

- WFN Impoundment A @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy, LLC
Source Latitude:	39.991417
Source Longitude:	-80.488694
Reference WMP:	

Comments:

- WFN Impoundment B @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy
Source Latitude:	39.991917
Source Longitude:	-80.4965
Reference WMP:	

Comments:

- Washington Pike PSD @ Brook Hills Park

Type:	Purchased Water
County:	Brooke
Owner:	Washington Pike PSD
Source Latitude:	40.26632
Source Longitude:	-80.543592
Reference WMP:	

Comments:

- Worthley Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Kimberly Worthley
Source Latitude:	40.216869
Source Longitude:	-80.548592
Reference WMP:	1061

Comments:

Newell, Dawn A <dawn.a.newell@wv.gov>

RE: [External] Re: SWN David Reinbeau Water Management Plan

Casey Bartkus <Casey_Bartkus@swn.com>
To: "Newell, Dawn A" <dawn.a.newell@wv.gov>
Cc: Brittany Woody <Brittany_Woody@swn.com>

This is perfect. Thank you so much for the quick response, Dawn!

Casey Bartkus

Senior Staff Environmental Specialist – SW Appalachia

SWN Southwestern Energy

1300 Fort Pierpont Drive

Suite 201

Morgantown, WV 26508

Mobile: 304-406-2051

Direct: 304-884-1666

Email: Casey_Bartkus@SWN.com

From: Newell, Dawn A <dawn.a.newell@wv.gov>
Sent: Wednesday, March 30, 2022 2:20 PM
To: Casey Bartkus <Casey_Bartkus@SWN.COM>
Cc: Brittany Woody <Brittany_Woody@SWN.COM>
Subject: [External] Re: SWN David Reinbeau Water Management Plan

Hi Casey,

As per your request, I was able to approve the additional source for WMP01992 as the most recent permits (47-051-02438, 39, and 40) are still being finalized. Please review below informati have any questions.

Thank you,

Dawn

Big Wheeling Creek @ Hogg

Type:	Stream/River
County:	Marshall
Owner:	Don Hogg
Intake Latitude:	39.984529
Intake Longitude:	-80.634106
HUC-8 Code:	5030106
Drainage Area (sq miles):	201.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING
Minimum Gauge Reading (cfs):	49.23
Minimum Passby (cfs):	27.28
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5040

Comments:

On Wed, Mar 30, 2022 at 10:39 AM Casey Bartkus <Casey_Bartkus@swn.com> wrote:

> Good morning Dawn,

SWN currently has permits in review for our David Reinbeau MSH 1H, 201H and 3H wells in Marshall County. Being that the permits are still in review, I was wondering if it was possible to for these wells. Let me know what you think. If there is another way of going about getting this included, let me know.

Thanks again!

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Division of Water and Waste Management

Water Use

Dawn.A.Newell@wv.gov

601 57th Street SE

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Phone 304-414-1114

Pollution and Emergency Spills 1-800-642-3074

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SWN David Reinbeau MSH WMP01442
(1H) 47-51-2438 (2H) 47-51-02440 (3H) 47-51-02439

Section IV(a) – Stream/River Source (to be completed for each surface water withdrawal location, print more pages as necessary)

Stream/River Name: Big Wheeling Creek @ Hogg		
Landowner name and address: Donn Hogg 241 Old Whitaker Lane Wheeling, WV 26003	Phone: (304) 242-6203	
Intake Location (decimal degrees, NAD83)		
Latitude: 39.984529	Longitude: -80.634106	County: Marshall

Proposed Withdrawal Details

Stationary Pump:	Total Maximum Pump Rate (gpm): 5,040	
Direct Truck Withdrawal:	Max. Pump Rate per Truck (gpm):	No. Trucks Simultaneously Pumping:

Determination that sufficient flow is available downstream from proposed intake point

Allow passby to be calculated by the DEP (Preferred)? Yes ☒ No ☐
(If no, advance written authorization by DEP is required. Attach authorization and details.)

Stream details

DEP Office Use Only			
Contact Recreation ☐	Aquatic Life-Trout Water ☐	Aquatic Life-Warm Water ☐	Drinking Water Supply ☐
Industrial ☐	Agriculture ☐	Irrigation ☐	Reference Gauge:
Gauged Stream : ☐	Stream Final Code:	Regulated by:	
Trout ☐	Sensitive Aquatic Species ☐	Tier 3 Streams ☐	Within 1 mile upstream of a PSD? Yes ☐ No ☐
Upstream Drainage Area?		Within zone of critical concern? Yes ☐ No ☐	

Newell, Dawn A <dawn.a.newell@wv.gov>

RE: [External] Re: SWN David Reinbeau Water Management Plan

Casey Bartkus <Casey_Bartkus@swn.com>
To: "Newell, Dawn A" <dawn.a.newell@wv.gov>
Cc: Brittany Woody <Brittany_Woody@swn.com>

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Casey Bartkus

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Email: Casey_Bartkus@SWN.com

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Sent: Wednesday, March 30, 2022 2:20 PM
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Cc: Brittany Woody <Brittany_Woody@SWN.COM>
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Dawn

Big Wheeling Creek @ Hogg

Type:	Stream/River
County:	Marshall
Owner:	Don Hogg
Intake Latitude:	39.984529
Intake Longitude:	-80.634106
HUC-8 Code:	5030106
Drainage Area (sq miles):	201.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING
Minimum Gauge Reading (cfs):	49.23
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Mussel Stream:	YES
Maximum Pump Rate (gpm):	5040

Comments:

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SWN David Reinbeau MSH WMP01442
(1H) 47-51-2438 (2H) 47-51-02440 (3H) 47-51-02439

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Stream/River Name: Big Wheeling Creek @ Hogg		
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Intake Location (decimal degrees, NAD83)		
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Proposed Withdrawal Details

Stationary Pump:	Total Maximum Pump Rate (gpm): 5,040	
Direct Truck Withdrawal:	Max. Pump Rate per Truck (gpm):	No. Trucks Simultaneously Pumping:

Determination that sufficient flow is available downstream from proposed intake point

Allow passby to be calculated by the DEP (Preferred)? Yes ☒ No ☐
(If no, advance written authorization by DEP is required. Attach authorization and details.)

Stream details

DEP Office Use Only			
Contact Recreation ☐	Aquatic Life-Trout Water ☐	Aquatic Life-Warm Water ☐	Drinking Water Supply ☐
Industrial ☐	Agriculture ☐	Irrigation ☐	Reference Gauge:
Gauged Stream : ☐	Stream Final Code:	Regulated by:	
Trout ☐	Sensitive Aquatic Species ☐	Tier 3 Streams ☐	Within 1 mile upstream of a PSD? Yes ☐ No ☐
Upstream Drainage Area?		Within zone of critical concern? Yes ☐ No ☐	

Newell, Dawn A <dawn.a.newell@wv.gov>

RE: [External] Re: SWN David Reinbeau Water Management Plan

Casey Bartkus <Casey_Bartkus@swn.com>
To: "Newell, Dawn A" <dawn.a.newell@wv.gov>
Cc: Brittany Woody <Brittany_Woody@swn.com>

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Email: Casey_Bartkus@SWN.com

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Sent: Wednesday, March 30, 2022 2:20 PM
To: Casey Bartkus <Casey_Bartkus@SWN.COM>
Cc: Brittany Woody <Brittany_Woody@SWN.COM>
Subject: [External] Re: SWN David Reinbeau Water Management Plan

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Type:	Stream/River
County:	Marshall
Owner:	Don Hogg
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Intake Longitude:	-80.634106
HUC-8 Code:	5030106
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Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
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Ref Gauge Name:	WHEELING
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Comments:

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SWN David Reinbeau MSH WMP01442
(1H) 47-51-2438 (2H) 47-51-02440 (3H) 47-51-02439

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(If no, advance written authorization by DEP is required. Attach authorization and details.)

Stream details

DEP Office Use Only			
Contact Recreation ☐	Aquatic Life-Trout Water ☐	Aquatic Life-Warm Water ☐	Drinking Water Supply ☐
Industrial ☐	Agriculture ☐	Irrigation ☐	Reference Gauge:
Gauged Stream : ☐	Stream Final Code:	Regulated by:	
Trout ☐	Sensitive Aquatic Species ☐	Tier 3 Streams ☐	Within 1 mile upstream of a PSD? Yes ☐ No ☐
Upstream Drainage Area?		Within zone of critical concern? Yes ☐ No ☐	

west virginia department of environmental protection

Water Management Plan:
Well Pad Overview

WMP 02104 | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad | County: Marshall

MODIFICATION **Effective: 11/3/2021**

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supercedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

API Number:	Well Name/Number:	API Number:	Well Name/Number:
047-051-01777	Betty Schafer MSH 210H		
047-051-01776	Betty Schafer MSH 201H		
047-051-01872	Betty Schafer MSH 5H		
047-051-01871	Betty Schafer MSH 401H		
047-051-02297	Betty Schafer MSH 8H		
047-051-02298	Betty Schafer MSH 10H		
047-051-02382	Betty Schafer MSH 1H		
047-051-02383	Betty Schafer MSH 405H		
047-051-02417	Betty Schafer MSH 3H		

The following water consumption estimates (in gallons) have been reported for this plan:

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	25,807,320
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activites:	210,000
Total for Well Pad	26,857,320

Est. Construction Start: 12/1/2014

Est. Reclamation End: 12/1/2026

Dawn Newell Digitally signed by Dawn Newell Date: 2021.11.03 15:30:57 -04'00'

Water Management Plan:
Primary Water Sources

WMP 02104	API/ID Number	see overview	Operator:	SWN Production Company, LLC	
Plan Type: Well Pad	Betty Schafer MSH Well Pad				

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

For any sources identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for mutiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interepreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this water management plan.

WMP 02104 | API Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Stream/River

- Source **Big Wheeling Creek @ Wheeling Staging Area** Ohio Owner: **Fulton Storage, LLC**

Max. daily purchase (gal) | Intake Latitude: 40.077019 | Intake Longitude: -80.713866

☐ Regulated Stream? | Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Booths Creek @ Reliance Minerals** Monongalia Owner: **Reliance Minerals, Inc.**

Max. daily purchase (gal) | Intake Latitude: 39.530405 | Intake Longitude: -79.978079

☐ Regulated Stream? | Ref. Gauge ID: 3062500 DECKERS CREEK AT MORGANTOWN, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ Bethany VFD Withdrawal Site** Brooke Owner: **Bethany Pike Volunteer Fire Department**

Max. daily purchase (gal) | Intake Latitude: 40.253422 | Intake Longitude: -80.600319

☐ Regulated Stream? | Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,100 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Source **Buffalo Creek @ DNR** Brooke Owner: **WVDNR**

Max. daily purchase (gal) | Intake Latitude: 40.19386 | Intake Longitude: -80.525796

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,200 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ Forney** Brooke Owner: **Forney & Sons Holding Company, LLC**

Max. daily purchase (gal) | Intake Latitude: 40.193453 | Intake Longitude: -80.52175

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ Fuchs** Brooke Owner: **Beverly Fuchs**

Max. daily purchase (gal) | Intake Latitude: 40.258863 | Intake Longitude: -80.60337

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ Greathouse Withdrawal Site** Brooke Owner: **Linda Greathouse**

Max. daily purchase (gal) | Intake Latitude: 40.20895 | Intake Longitude: -80.60105

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,300 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ Labelle Farms** Brooke Owner: **Steve Paul**

Max. daily purchase (gal) | Intake Latitude: 40.204444 | Intake Longitude: -80.598645

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Source **Buffalo Creek @ Worthley Withdrawal Site** Brooke Owner: **Kimberly C. Worthley**

Max. daily purchase (gal) | Intake Latitude: 40.210978 | Intake Longitude: -80.548779

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ WVDOH** Brooke Owner: **West Virginia Division of Highways**

Max. daily purchase (gal) Intake Latitude: 40.258863 Intake Longitude: -80.60337

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 3,360 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: http://www.erh.noaa.gov/ohrfc//flows.shtml

- Source **Buffalo Creek @ Zatta** Brooke Owner: **Edward Zatta**

Max. daily purchase (gal) Intake Latitude: 40.253588 Intake Longitude: -80.600254

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 2,520 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Source **Cross Creek @ Bullock Withdrawal Site** Brooke Owner: **Isabelle Bullock**

Max. daily purchase (gal) Intake Latitude: 40.30735 Intake Longitude: -80.569317

☐ Regulated Stream? Ref. Gauge ID: 3110830 KINGS CREEK AT WEIRTON, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Cross Creek @ DNR** Brooke Owner: **WVDNR**

Max. daily purchase (gal) | Intake Latitude: 40.300536 | Intake Longitude: -80.542229

☐ Regulated Stream? Ref. Gauge ID: 3110830 KINGS CREEK AT WEIRTON, WV

Max. Pump rate (gpm): 3,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Cross Creek @ Norfolk and Western Railway** Brooke Owner: **Wheeling & Lake Erie Railway Company**

Max. daily purchase (gal) | Intake Latitude: 40.30802 | Intake Longitude: -80.599193

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Cross Creek @ Palizzi** Brooke Owner: **Campbell Palizzi**

Max. daily purchase (gal) | Intake Latitude: 40.302427 | Intake Longitude: -80.582753

☐ Regulated Stream? Ref. Gauge ID: 3110830 KINGS CREEK AT WEIRTON, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Source **Fish Creek @ Gribben** Marshall Owner: **Revocable Living Trust of M. Peggy Gribben**

Max. daily purchase (gal) Intake Latitude: 39.753271 Intake Longitude: -80.597913

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Fish Creek @ Guzek** Marshall Owner: **Walter A. Guzek**

Max. daily purchase (gal) Intake Latitude: 39.753021 Intake Longitude: -80.613941

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Little Wheeling Creek @ Edge Withdrawal Site** Ohio Owner: **Alice Mae Edge**

Max. daily purchase (gal) Intake Latitude: 40.098 Intake Longitude: -80.5558

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Little Wheeling Creek @ Main Street Bank** Ohio Owner: **Main Street Bank**

Max. daily purchase (gal) Intake Latitude: 40.064076 Intake Longitude: -80.614406

☐ Regulated Stream? Ref. Gauge ID: 3111955 Wheeling Creek near Majorsville, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Source **Little Wheeling Creek @ Rt. 40 Staging Area** Ohio Owner: **JDS Investments, LLC**

Max. daily purchase (gal) Intake Latitude: 40.078324 Intake Longitude: -80.591145

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Middle Wheeling Creek @ Gribben** Ohio Owner: **Lawrence Kevin Gribber**

Max. daily purchase (gal) Intake Latitude: 40.036777 Intake Longitude: -80.598008

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Middle Wheeling Creek @ Supler** Ohio Owner: **Gregory and Peggy Supler**

Max. daily purchase (gal) | Intake Latitude: 40.04409 | Intake Longitude: -80.55348

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Ohio River @ Extraction B Panhandle** Brooke Owner: **SWN Production Company, LLC**

Max. daily purchase (gal) | Intake Latitude: 40.233469 | Intake Longitude: -80.654359

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 4,375 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ Proctor Peacemaker** Wetzel Owner: **SWN Production Company, LLC**

Max. daily purchase (gal) | Intake Latitude: 39.714299 | Intake Longitude: -80.825862

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 6,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Paw Paw Creek @ Horizon Ventures** Marion Owner: **Horizon Ventures of WV, Inc**

Max. daily purchase (gal) | Intake Latitude: 39.552426 | Intake Longitude: -80.166833

☐ Regulated Stream? Ref. Gauge ID: 3061500 BUFFALO CREEK AT BARRACKVILLE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Source **Short Creek @ Cain** Ohio Owner: **Susan L. Cain**

Max. daily purchase (gal) | Intake Latitude: 40.155061 | Intake Longitude: -80.651431

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,360 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **West Virginia Fork of Fish Creek @ Van Scyoc Withdrawal** Wetzel Owner: **Israel D Van Scyoc**

Max. daily purchase (gal) | Intake Latitude: 39.6908 | Intake Longitude: -80.4762

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Wheeling Creek @ Iskon** Marshall Owner: **Iskcon New Vrindaban, Inc.**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
	39.967973	-80.599241

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or the Wheeling Creek @ Sligar site

- Source **Wheeling Creek @ Schafer** Marshall Owner: **Betty Jane Schafer**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
	39.99257	-80.634912

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Wheeling Creek @ Sligar** Marshall Owner: **Terry Sligar**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
	40.013185	-80.652863

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 3,360 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or Wheeling Creek @ Iskcon site.

- Source **Whiteday Creek @ Sorine Withdrawal Site** Marion Owner: **Andrew Sorine, Jr.**

Max. daily purchase (gal) Intake Latitude: 39.472311 Intake Longitude: -79.977123

☐ Regulated Stream? Ref. Gauge ID: 3061500 BUFFALO CREEK AT BARRACKVILLE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **WV Fork Fish Creek @ Derby** Wetzel Owner: **Steven Derby**

Max. daily purchase (gal) Intake Latitude: 39.709329 Intake Longitude: -80.536079

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **WV Fork Fish Creek @ Francis** Marshall Owner: **Loretta J. Francis**

Max. daily purchase (gal) Intake Latitude: 39.733295 Intake Longitude: -80.579415

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 3,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

WMP 02104 | API Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Purchased Water

- Source **Adrian Public Service District** Upshur Owner: **Adrian Public Service District**

Max. daily purchase (gal): 144,000 | Intake Latitude: 38.9775 | Intake Longitude: -80.22083

☐ Regulated Stream? Ref. Gauge ID: 3054500 TYGART VALLEY RIVER AT PHILIPPI, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **American Petroleum Partners (Wheeling Creek @ Wilson)** Marshall Owner: **American Petroleum Partners, LLC**

Max. daily purchase (gal): 3,500,000 | Intake Latitude: 39.975882 | Intake Longitude: -80.62967

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): **4,200** **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Covestro, LLC** Marshall Owner: **Covestro, LLC**

Max. daily purchase (gal): 1,050,000 | Intake Latitude: 39.7218 | Intake Longitude: -80.830231

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Elite Gasfield Services** Brooke Owner: **Elite Gasfield Services**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,000,000	40.32667	-80.59861

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Grandview-Doolin PSD** Marshall Owner: **Grandview-Doolin Public Service District**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
60,480	39.71361	-80.82583

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Marshall County Public Service District 3** Marshall Owner: **Marshall County Public Service District #4**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
144,000	39.93556	-80.75833

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Tap Location is: (39.906400, -80.586200)

- Source **Marshall County Public Service District 4** Marshall Owner: **Marshall County Public Service District #4**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
80,000	39.93556	-80.75833

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Source **Ohio County PSD** Ohio Owner: **Ohio county PSD**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
720,000	40.14972	-80.70167

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ 4K Industrial Park** Belmont, OH Owner: **4K Industrial Park, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,982,000	40.098805	-80.711328

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ J&R Excavating** Marshall Owner: **J&R Excavating**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,890,000	39.998509	-80.737336

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ Oasis Transport Withdrawal Site** Brooke Owner: **Oasis Transport, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,890,000	40.331551	-80.601034

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Range Tap @ Corbin Withdrawal Site** Brooke Owner: **Range Resources Corp.**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,100,000	40.229983	-80.521067

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **The Village of Valley Grove** Ohio Owner: **The Village of Valley Grove**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
720,000	40.14972	-80.70167

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Valley Falls PSD** Marion Owner: **Valley Falls PSD**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
144,000	39.45889	-80.15583

☐ Regulated Stream? Ref. Gauge ID: 3057000 TYGART VALLEY RIVER AT COLFAX, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Wheeling Creek #1 @ HG Energy** Marshall Owner: **HG Energy, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,440,000	39.95205	-80.56189

☐ Regulated Stream? Ref. Gauge ID: 3111955 Wheeling Creek near Majorsville, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Wheeling Creek # 2 @ HG Energy** Marshall Owner: **HG Energy, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,880,000	39.949577	-80.531255

☐ Regulated Stream? Ref. Gauge ID: 3111955 Wheeling Creek near Majorsville, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Wheeling Water Department** Ohio Owner: **Wheeling Water Department**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
720,000	40.14972	-80.70167

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified sation on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Source Summary **MODIFICATION** **Effective: 11/3/2021**

WMP 02104 API Number see overview Operator: SWN Production Company, LLC

Plan Type Well Pad Betty Schafer MSH Well Pad

Groundwater

- Source **Shoemaker Groundwater Wells @ HG Energy** Marshall Owner: **HG Energy, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
576,000	40.0222	-80.733888

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **800** **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals. https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81609 | Source Name: Shoemaker Groundwater Wells @ HG Energy / HG Energy, LLC

Source Latitude: 40.0222

Source Longitude: -80.733888

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Marshall

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 800

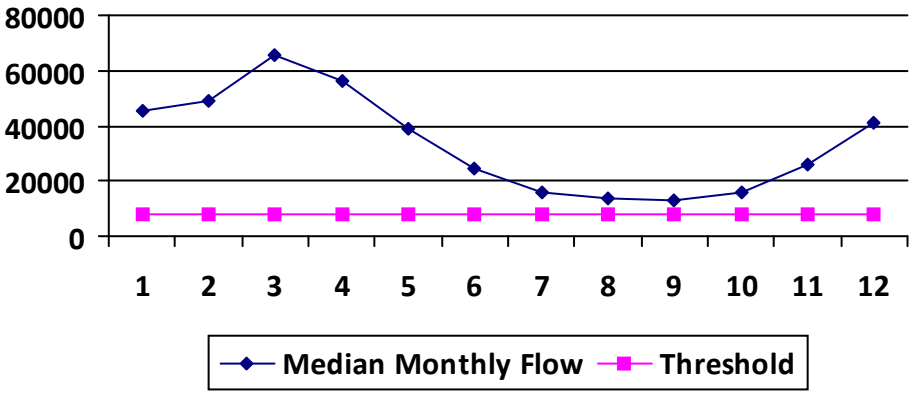
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	1.78
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81590 | Source Name: Adrian Public Service District / Adrian Public Service District

Source Latitude: 38.9775

Source Longitude: -80.22083

HUC-8 Code: 5020001

Drainage Area (sq. mi.): 197.33 | County: Upshur

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

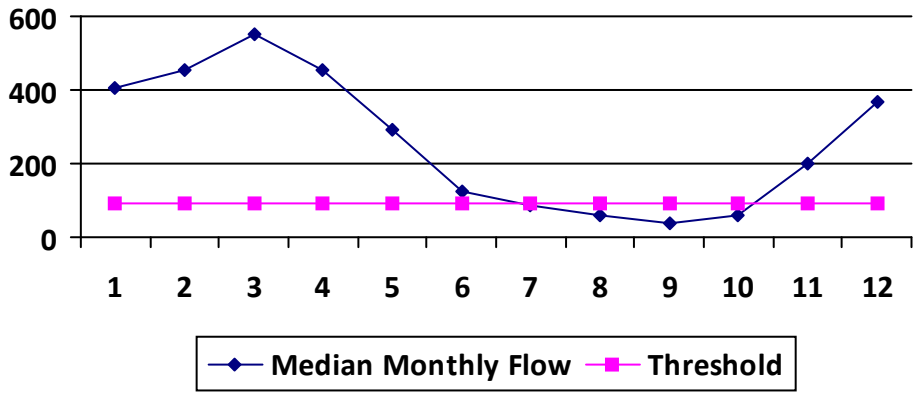
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3054500 TYGART VALLEY RIVER AT PHILIPPI, WV

Drainage Area (sq. mi.): 914.00 | Gauge Threshold (cfs): 341

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	402.75		
2	456.66		
3	551.03		
4	451.73		
5	291.41		
6	124.17		
7	85.17		
8	59.44		
9	37.59		
10	60.75		
11	201.45		
12	368.28		



Water Availability Assessment of Location

Base Threshold (cfs)	73.62
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	18.41
Ungauged Stream Safety (cfs):	18.41
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81591 | Source Name: American Petroleum Partners (Wheeling Creek @ W / American Petroleum Partners, LLC

Source Latitude: 39.975882

Source Longitude: -80.62967

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 192.96 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

Max. Simultaneous Trucks:

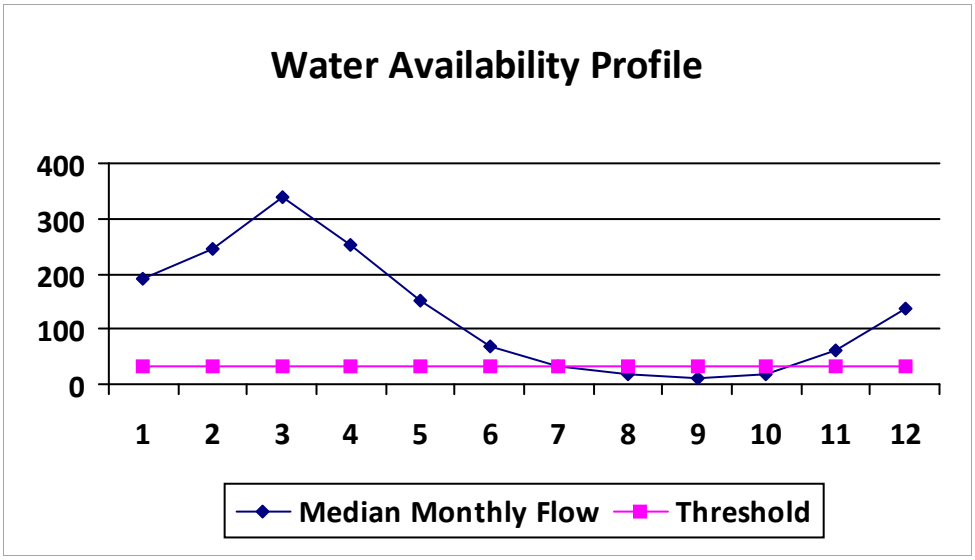
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	191.17		
2	243.94		
3	338.32		
4	251.15		
5	153.09		
6	69.68		
7	30.79		
8	18.01		
9	11.44		
10	18.96		
11	59.65		
12	135.26		



Water Availability Assessment of Location

Base Threshold (cfs)	26.09
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	6.52
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81592 Source Name: Covestro, LLC
Covestro, LLC

Source Latitude: 39.7218
Source Longitude: -80.830231

HUC-8 Code: 5030201

Drainage Area (sq. mi.) 25000 County: Marshall

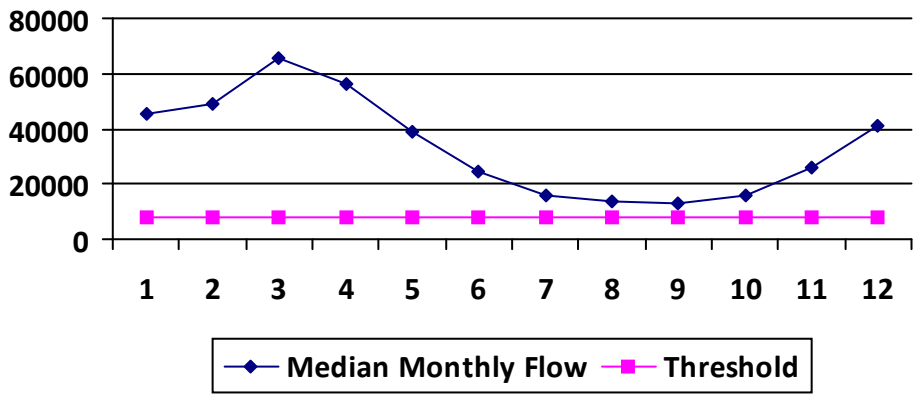
☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC
☐ Trout Stream? ☐ Tier 3? ☐ WH
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

Max. Pump rate (gpm):
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81594 | Source Name: Elite Gasfield Services / Elite Gasfield Services

Source Latitude: 40.32667

Source Longitude: -80.59861

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 25000 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

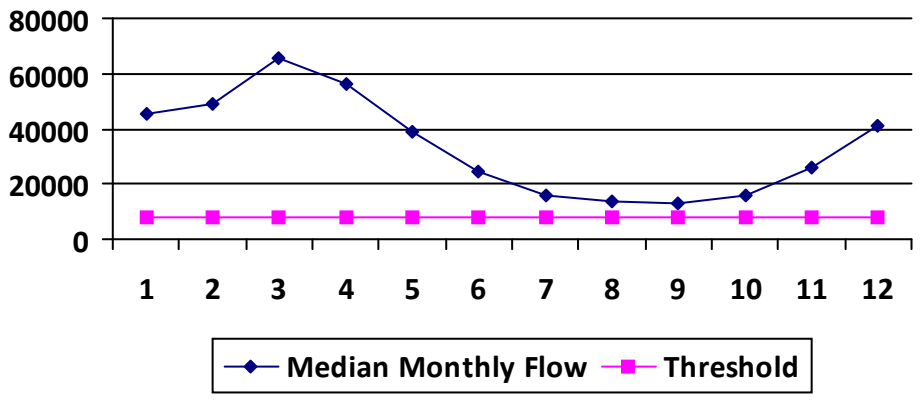
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81596 | Source Name: Grandview-Doolin PSD / Grandview-Doolin Public Service District

Source Latitude: 39.71361

Source Longitude: -80.82583

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 | County: Marshall

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

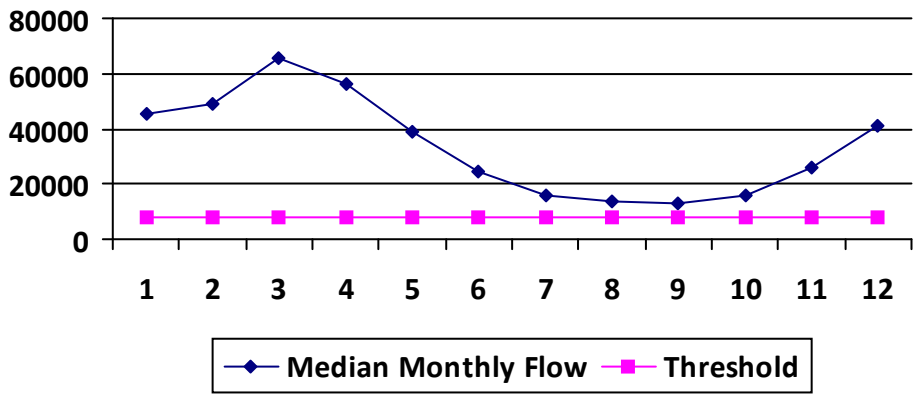
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81599 | Source Name: Marshall County Public Service District 3 / Marshall County Public Service District #4

Source Latitude: 39.93556

Source Longitude: -80.75833

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

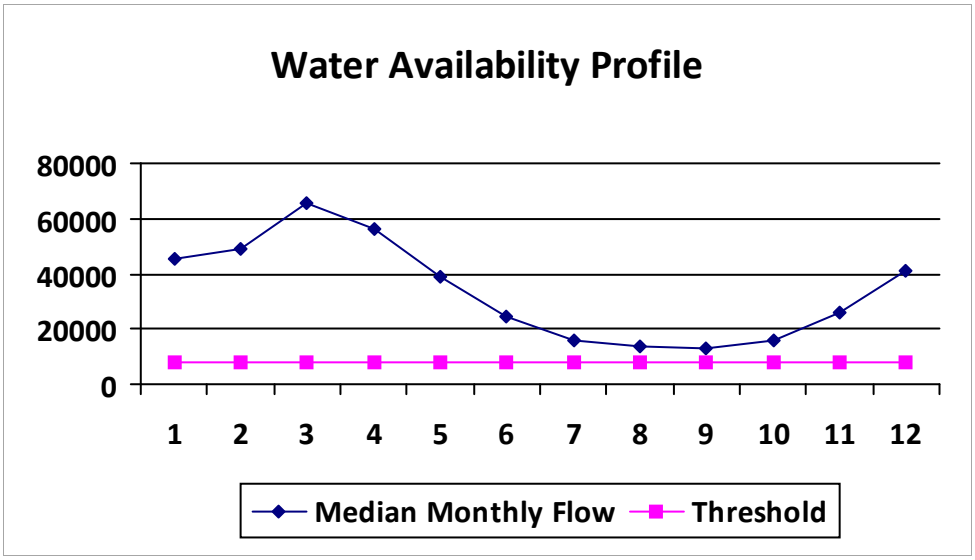
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81600 | Source Name: Marshall County Public Service District 4 / Marshall County Public Service District #4

Source Latitude: 39.93556

Source Longitude: -80.75833

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

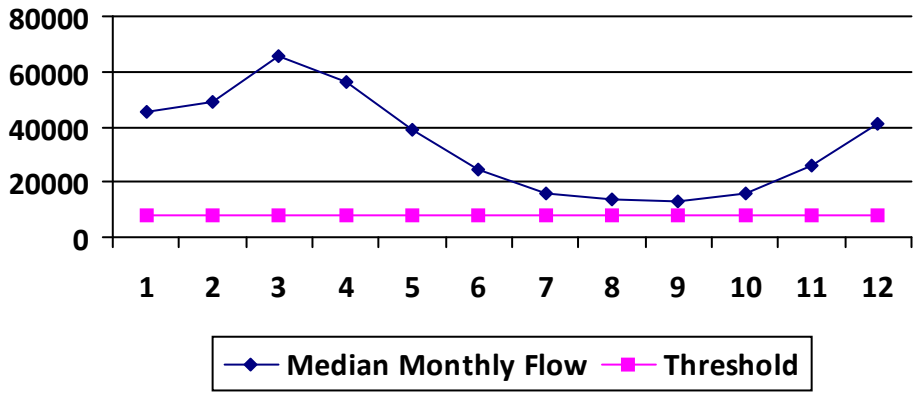
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81601 | Source Name: Ohio County PSD / Ohio county PSD

Source Latitude: 40.14972

Source Longitude: -80.70167

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

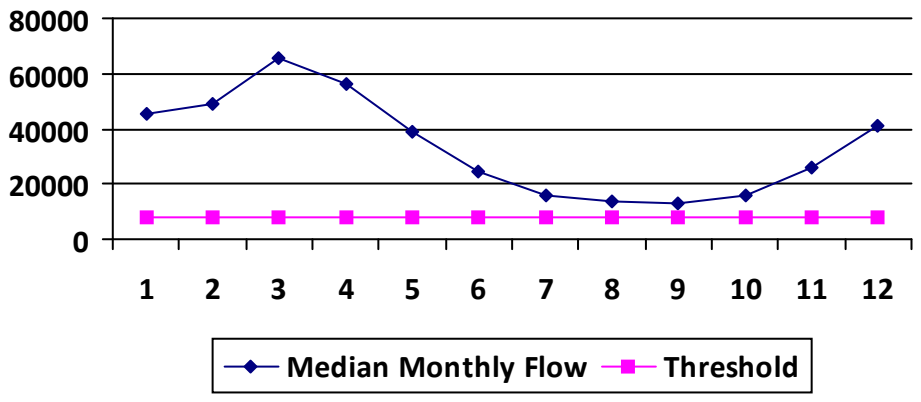
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81602 | Source Name: Ohio River @ 4K Industrial Park / 4K Industrial Park, LLC

Source Latitude: 40.098805

Source Longitude: -80.711328

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Belmont, OH

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

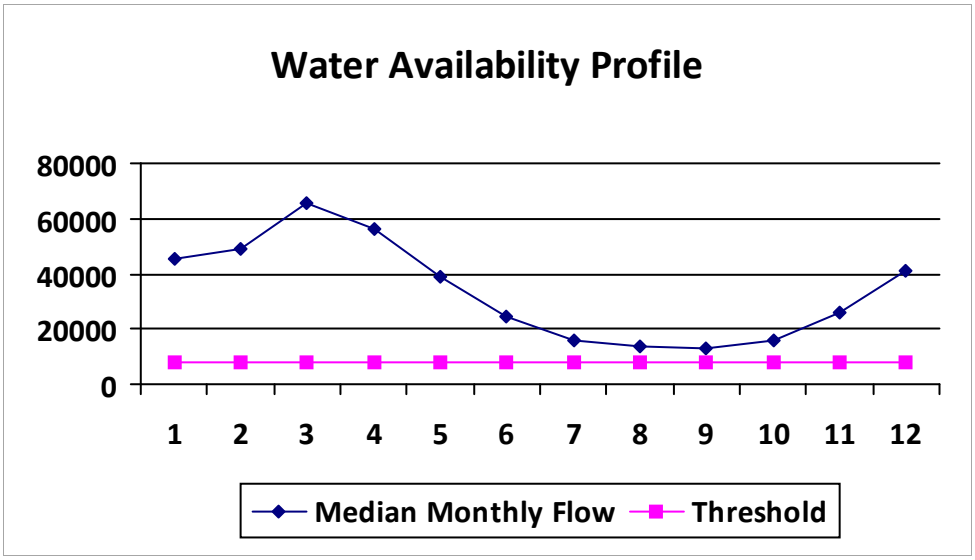
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81603 | Source Name: Ohio River @ J&R Excavating / J&R Excavating

Source Latitude: 39.998509

Source Longitude: -80.737336

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

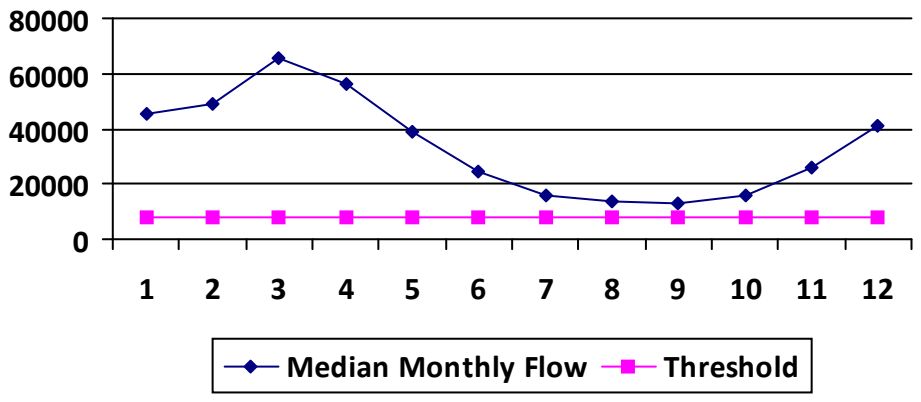
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81604 | Source Name: Ohio River @ Oasis Transport Withdrawal Site

Oasis Transport, LLC

Source Latitude: 40.331551

Source Longitude: -80.601034

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

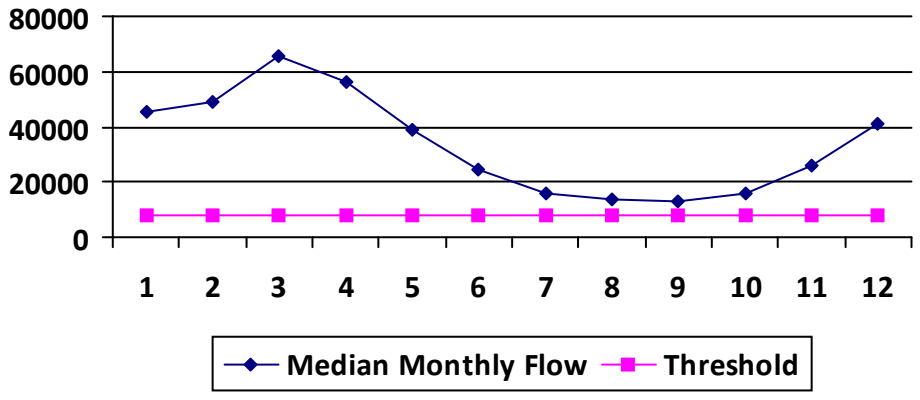
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81606 | Source Name: Range Tap @ Corbin Withdrawal Site

Range Resources Corp.

Source Latitude: 40.229983

Source Longitude: -80.521067

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

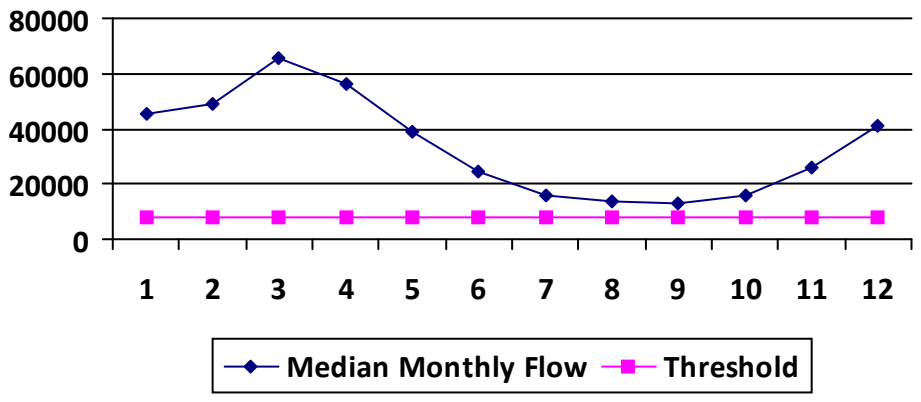
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81610 | Source Name: The Village of Valley Grove / The Village of Valley Grove

Source Latitude: 40.14972

Source Longitude: -80.70167

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

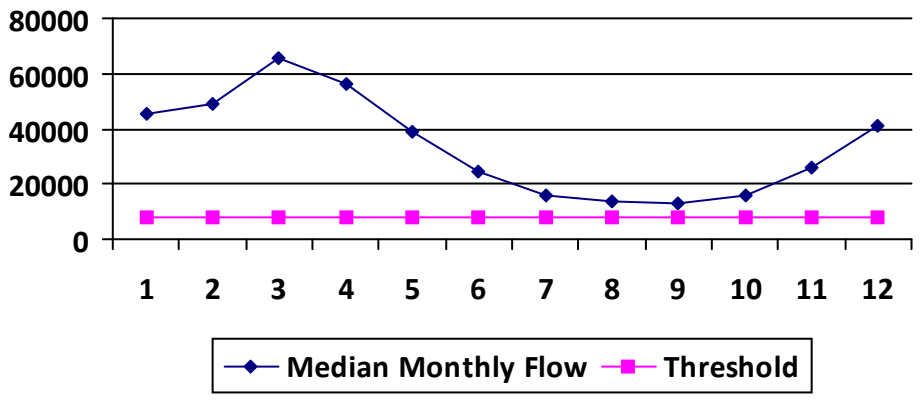
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81611 | Source Name: Valley Falls PSD / Valley Falls PSD

Source Latitude: 39.45889

Source Longitude: -80.15583

HUC-8 Code: 5020001

Drainage Area (sq. mi.): 1367.05 | County: Marion

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

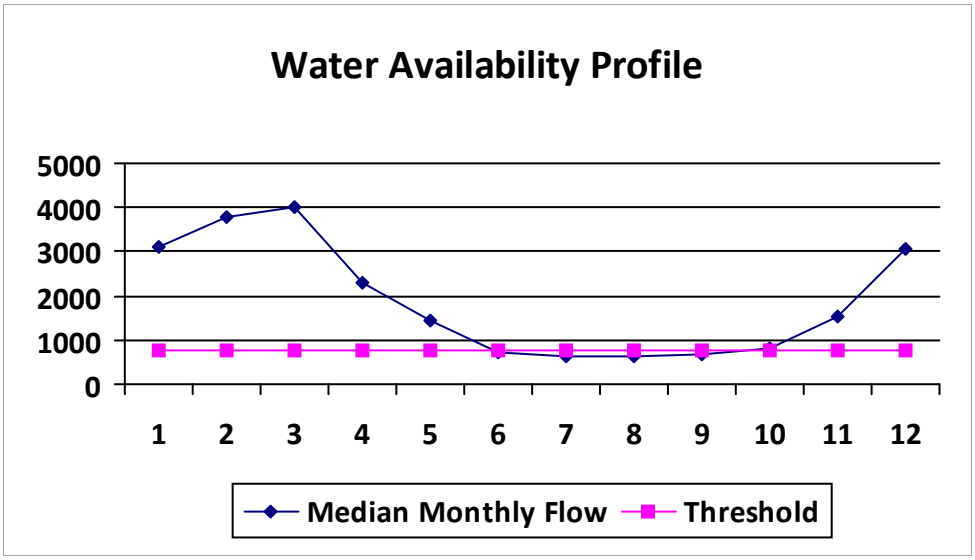
Max. Truck pump rate (gpm)

Reference Gauge: 3057000 TYGART VALLEY RIVER AT COLFAX, WV

Drainage Area (sq. mi.): 1,363.00

Gauge Threshold (cfs): 624

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	3,116.33	-	-
2	3,762.53	-	-
3	4,020.62	-	-
4	2,297.81	-	-
5	1,441.95	-	-
6	729.86	-	-
7	613.75	-	-
8	623.01	-	-
9	694.86	-	-
10	793.38	-	-
11	1,551.03	-	-
12	3,049.68	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	156.46
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81615 | Source Name: Wheeling Creek #1 @ HG Energy / HG Energy, LLC

Source Latitude: 39.95205

Source Longitude: -80.56189

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 156.06 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

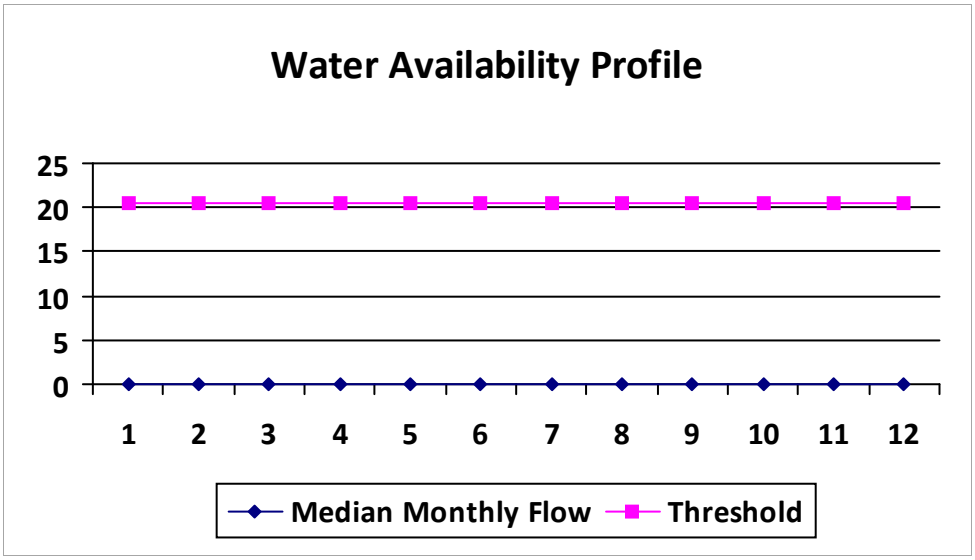
Max. Truck pump rate (gpm)

Reference Gauge: 3111955 | Wheeling Creek near Majorsville, WV

Drainage Area (sq. mi.): 152.00

Gauge Threshold (cfs): 16

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	0.00		-
2	0.00		-
3	0.00		-
4	0.00		-
5	0.00		-
6	0.00		-
7	0.00		-
8	0.00		-
9	0.00		-
10	0.00		-
11	0.00		-
12	0.00		-



Water Availability Assessment of Location

Base Threshold (cfs)	16.43
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.11
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81616 | Source Name: Wheeling Creek # 2 @ HG Energy

HG Energy, LLC

Source Latitude: 39.949577

Source Longitude: -80.531255

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 152.4 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

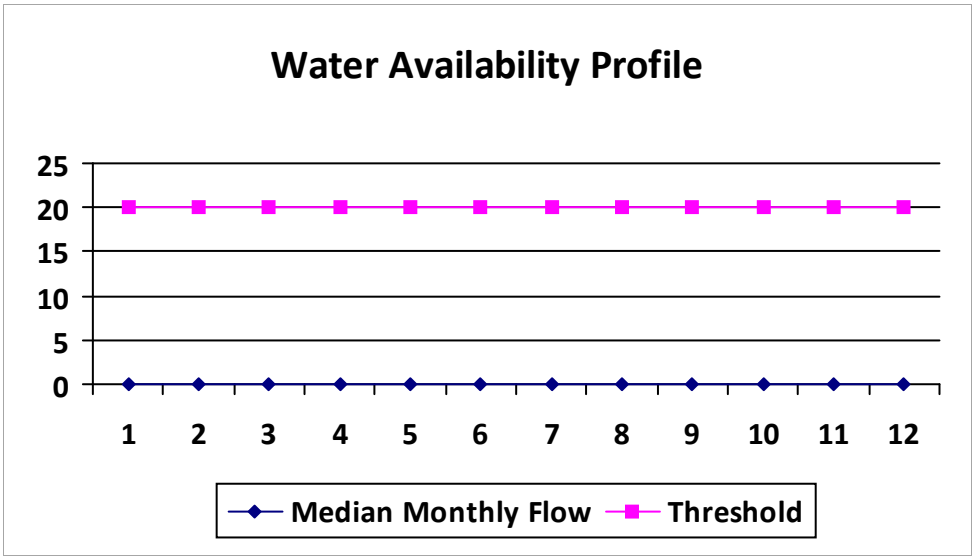
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3111955 | Wheeling Creek near Majorsville, WV

Drainage Area (sq. mi.): 152.00 | Gauge Threshold (cfs): 16

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	0.00		-
2	0.00		-
3	0.00		-
4	0.00		-
5	0.00		-
6	0.00		-
7	0.00		-
8	0.00		-
9	0.00		-
10	0.00		-
11	0.00		-
12	0.00		-



Water Availability Assessment of Location

Base Threshold (cfs)	16.04
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.01
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81617 | Source Name: Wheeling Water Department

Wheeling Water Department

Source Latitude: 40.14972

Source Longitude: -80.70167

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Ohio

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

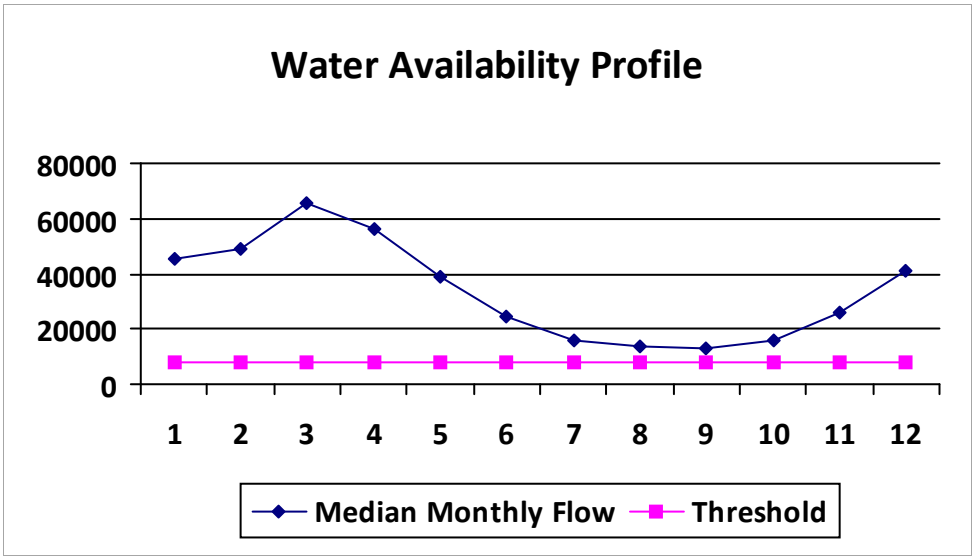
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81547 | Source Name: Big Wheeling Creek @ Wheeling Staging Area
Fulton Storage, LLC

Source Latitude: 40.077019
Source Longitude: -80.713866

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 296.04 | County: Ohio

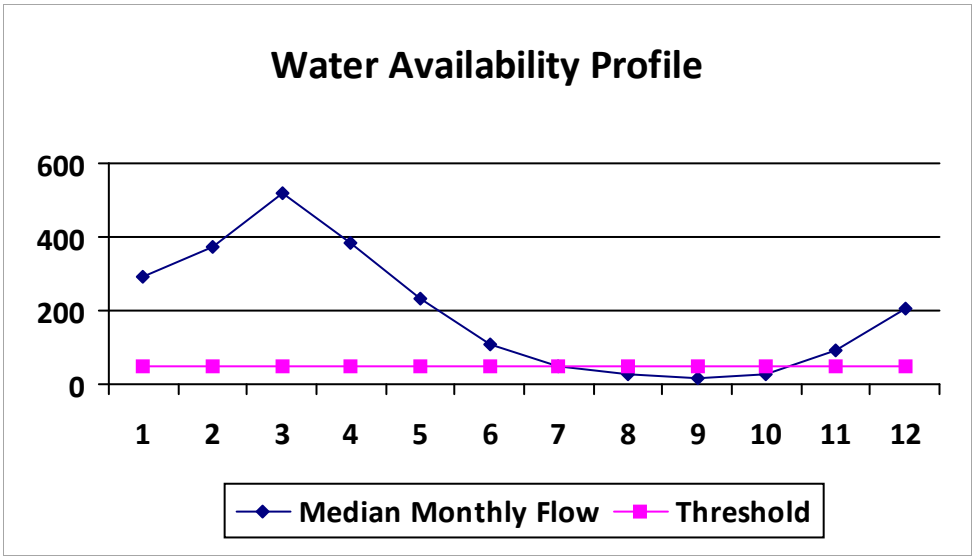
☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC
☐ Trout Stream? ☐ Tier 3? ☐ WH
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

Max. Pump rate (gpm): 2,500
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	293.29		
2	374.26		
3	519.05		
4	385.31		
5	234.87		
6	106.90		
7	47.24		
8	27.63		
9	17.56		
10	29.09		
11	91.52		
12	207.51		



Water Availability Assessment of Location

Base Threshold (cfs)	40.03
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	10.01
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81548 | Source Name: Booths Creek @ Reliance Minerals / Reliance Minerals, Inc.

Source Latitude: 39.530405

Source Longitude: -79.978079

HUC-8 Code: 5020003

Drainage Area (sq. mi.): 1.79 | County: Monongalia

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

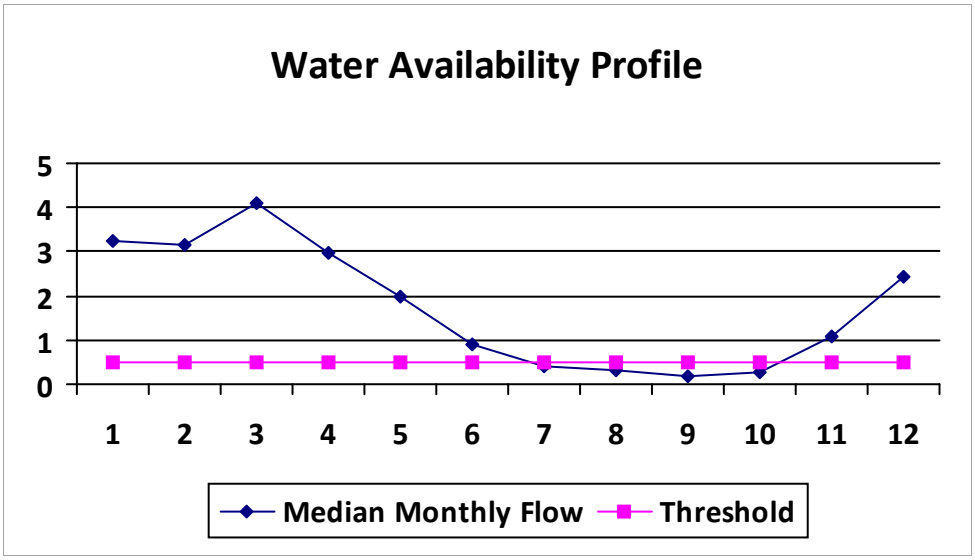
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3062500 DECKERS CREEK AT MORGANTOWN, WV

Drainage Area (sq. mi.): 63.20 | Gauge Threshold (cfs): 14

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	3.25		
2	3.16		
3	4.12		
4	2.98		
5	1.97		
6	0.89		
7	0.41		
8	0.30		
9	0.17		
10	0.29		
11	1.08		
12	2.43		



Water Availability Assessment of Location

Base Threshold (cfs)	0.40
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.10
Ungauged Stream Safety (cfs):	0.10
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81549 | Source Name: Buffalo Creek @ Bethany VFD Withdrawal Site
Bethany Pike Volunteer Fire Department

Source Latitude: 40.253422
Source Longitude: -80.600319

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 158.69 | County: Brooke

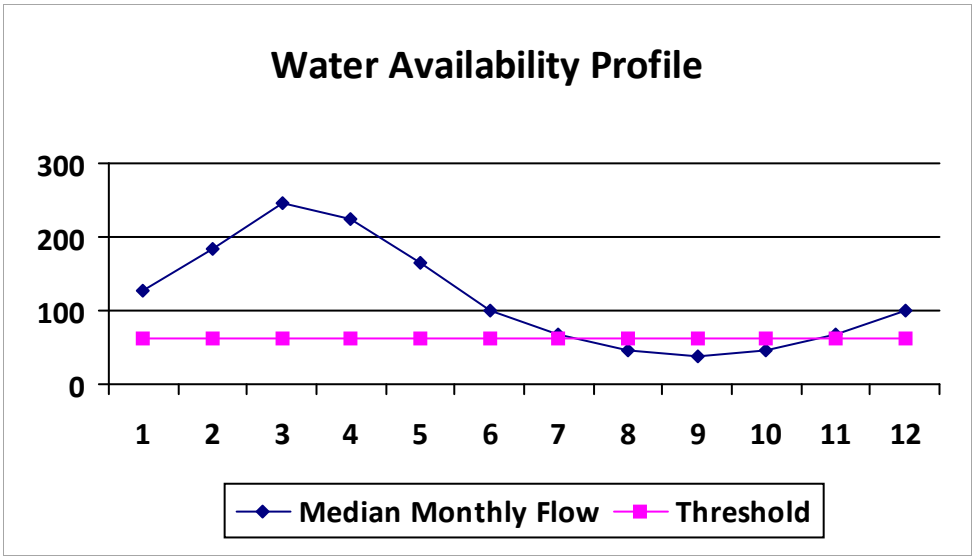
- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 3,100
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	128.18		
2	183.60		
3	245.67		
4	224.32		
5	165.56		
6	101.06		
7	66.76		
8	46.57		
9	38.15		
10	45.11		
11	66.70		
12	101.01		



Water Availability Assessment of Location

Base Threshold (cfs)	49.03
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	6.91
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	12.26
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81550 | Source Name: Buffalo Creek @ DNR WVDNR

Source Latitude: 40.19386

Source Longitude: -80.525796

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 98.28 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 3,200

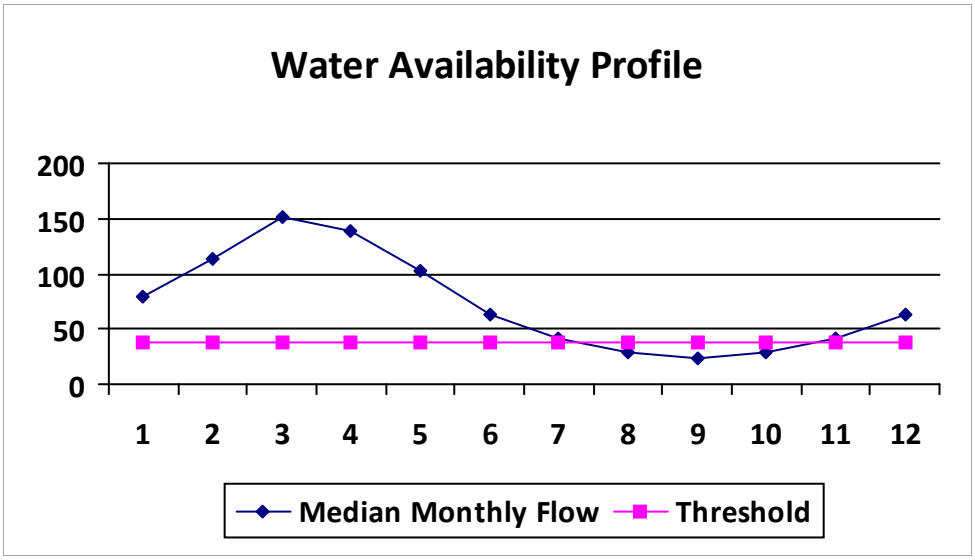
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	79.39		
2	113.71		
3	152.15		
4	138.92		
5	102.53		
6	62.59		
7	41.34		
8	28.84		
9	23.62		
10	27.94		
11	41.31		
12	62.56		



Water Availability Assessment of Location

Base Threshold (cfs)	30.36
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	7.13
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	7.59
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81551 | Source Name: Buffalo Creek @ Forney

Forney & Sons Holding Company, LLC

Source Latitude: 40.193453

Source Longitude: -80.52175

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 98.28 | County: Brooke

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,500

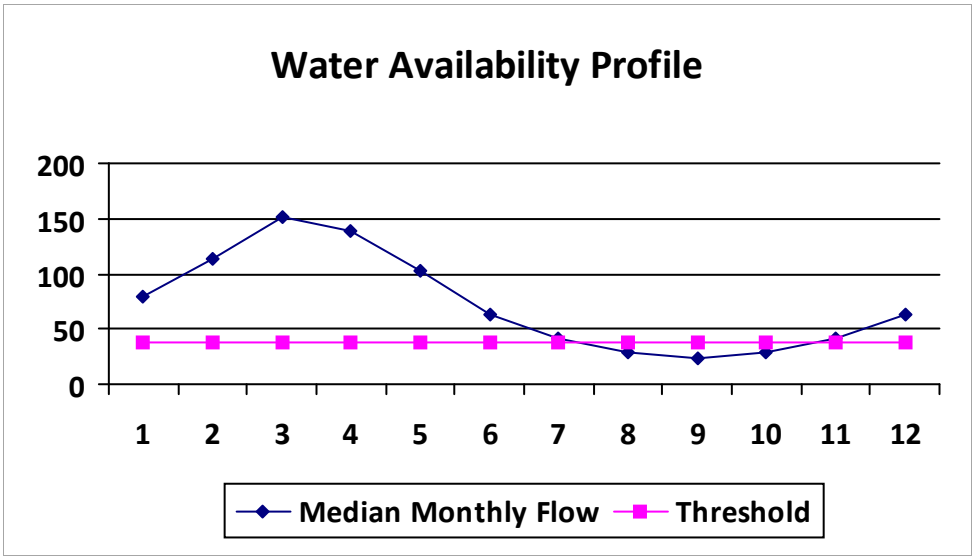
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	79.39		
2	113.71		
3	152.15		
4	138.92		
5	102.53		
6	62.59		
7	41.34		
8	28.84		
9	23.62		
10	27.94		
11	41.31		
12	62.56		



Water Availability Assessment of Location

Base Threshold (cfs)	30.36
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	7.59
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81552 | Source Name: Buffalo Creek @ Fuchs / Beverly Fuchs

Source Latitude: 40.258863

Source Longitude: -80.60337

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 163.22 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 5,250

Max. Simultaneous Trucks:

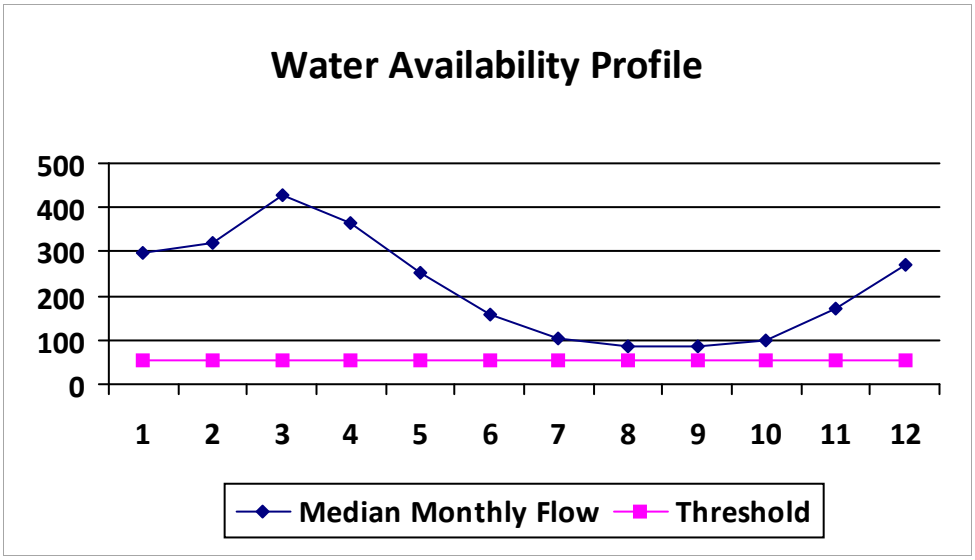
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	298.37	-	-
2	321.22	-	-
3	428.94	-	-
4	366.27	-	-
5	252.66	-	-
6	158.65	-	-
7	104.46	-	-
8	87.49	-	-
9	83.57	-	-
10	101.20	-	-
11	171.71	-	-
12	269.64	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	11.70
Headwater Safety (cfs):	10.56
Ungauged Stream Safety (cfs):	10.56
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81553 | Source Name: Buffalo Creek @ Greathouse Withdrawal Site / Linda Greathouse

Source Latitude: 40.20895

Source Longitude: -80.60105

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 138.56 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 3,300

Max. Simultaneous Trucks:

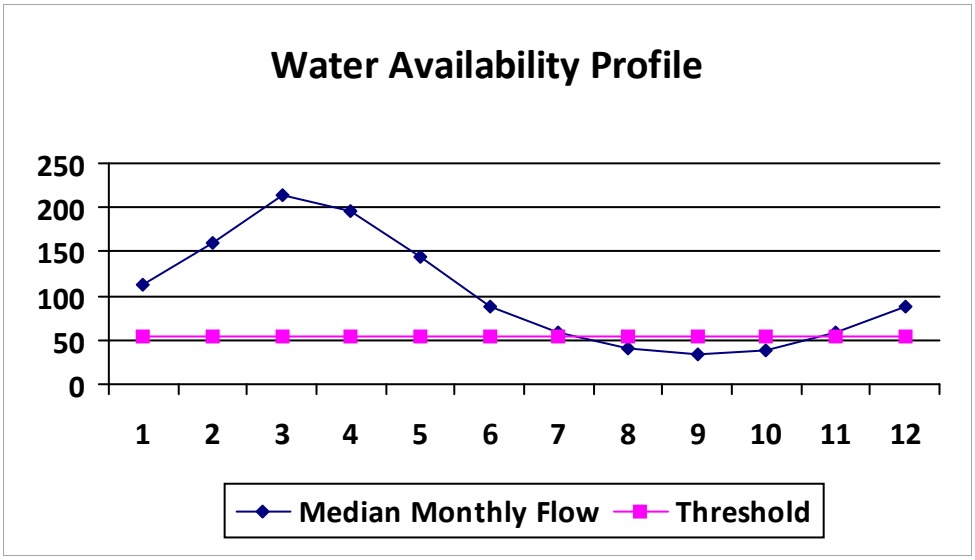
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	111.92		
2	160.31		
3	214.51		
4	195.86		
5	144.56		
6	88.24		
7	58.29		
8	40.66		
9	33.31		
10	39.39		
11	58.24		
12	88.19		



Water Availability Assessment of Location

Base Threshold (cfs)	42.81
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	7.35
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	10.70
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81554 | Source Name: Buffalo Creek @ Labelle Farms

Steve Paul

Source Latitude: 40.204444

Source Longitude: -80.598645

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 136.79 | County: Brooke

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 5,250

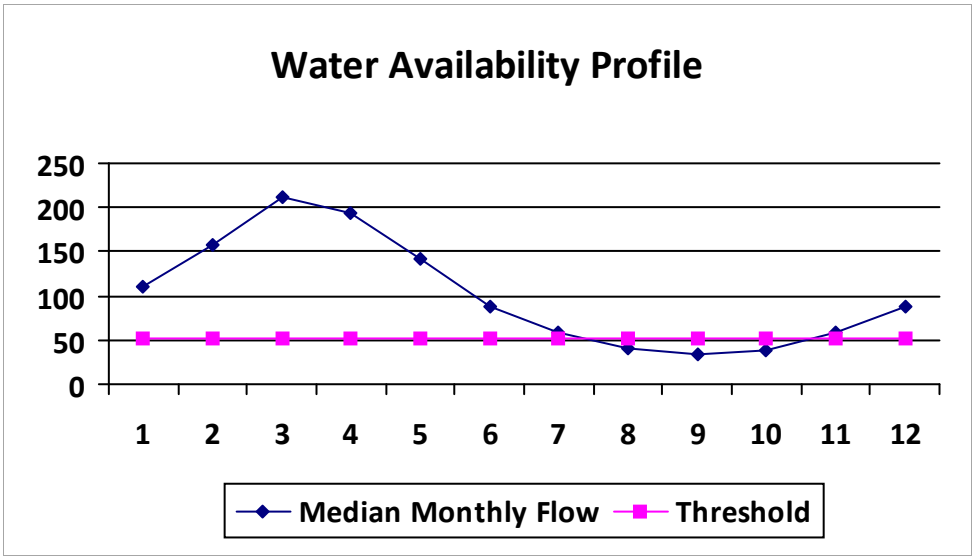
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	110.49		
2	158.27		
3	211.77		
4	193.36		
5	142.71		
6	87.12		
7	57.54		
8	40.14		
9	32.88		
10	38.89		
11	57.50		
12	87.07		



Water Availability Assessment of Location

Base Threshold (cfs)	42.26
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	11.70
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	10.57
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81555 | Source Name: Buffalo Creek @ Worthley Withdrawal Site
Kimberly C. Worthley

Source Latitude: 40.210978
Source Longitude: -80.548779

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 113.49 | County: Brooke

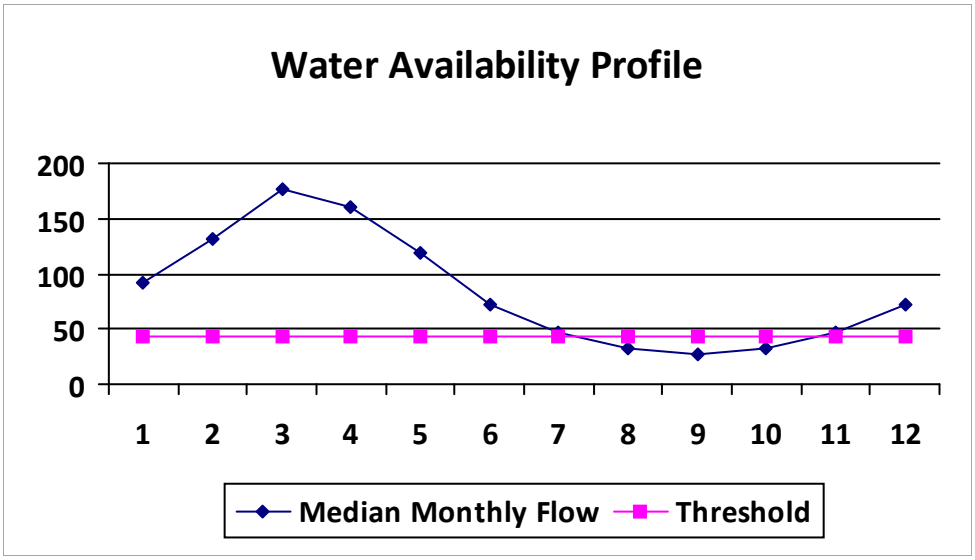
- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,500
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	91.67		
2	131.31		
3	175.70		
4	160.42		
5	118.40		
6	72.28		
7	47.74		
8	33.31		
9	27.28		
10	32.26		
11	47.70		
12	72.24		



Water Availability Assessment of Location

Base Threshold (cfs)	35.06
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	8.77
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81556 | Source Name: Buffalo Creek @ WVDOH
West Virginia Division of Highways

Source Latitude: 40.258863
Source Longitude: -80.60337

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 163.22 | County: Brooke

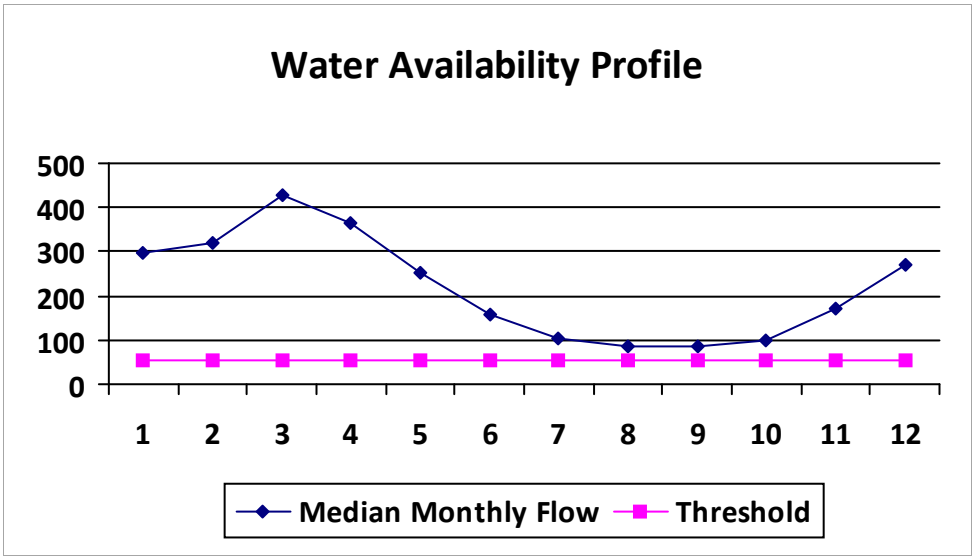
☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC
☐ Trout Stream? ☐ Tier 3? ☐ WH
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

Max. Pump rate (gpm): 3,360
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	298.37	-	-
2	321.22	-	-
3	428.94	-	-
4	366.27	-	-
5	252.66	-	-
6	158.65	-	-
7	104.46	-	-
8	87.49	-	-
9	83.57	-	-
10	101.20	-	-
11	171.71	-	-
12	269.64	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	7.49
Headwater Safety (cfs):	10.56
Ungauged Stream Safety (cfs):	10.56
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81557 | Source Name: Buffalo Creek @ Zatta / Edward Zatta

Source Latitude: 40.253588

Source Longitude: -80.600254

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 158.69 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,520

Max. Simultaneous Trucks:

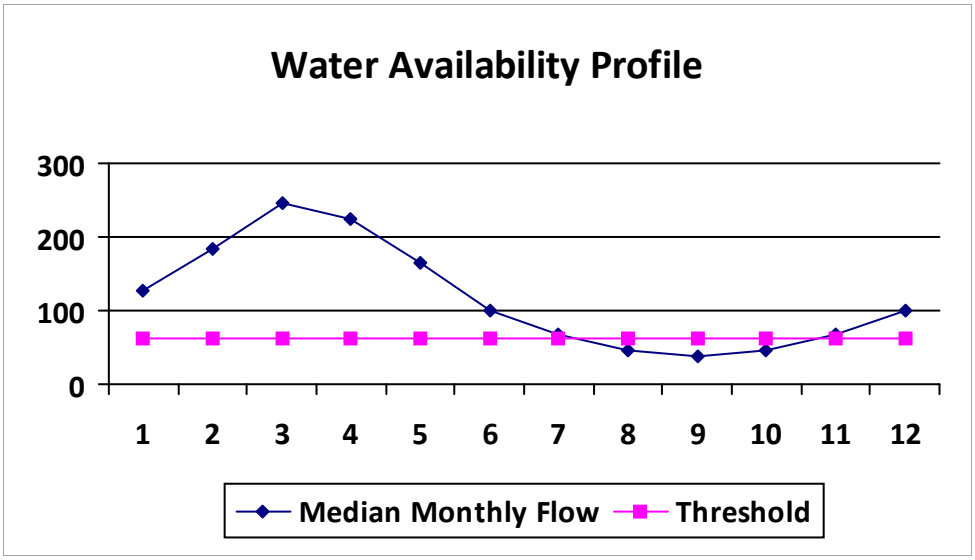
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	128.18		
2	183.60		
3	245.67		
4	224.32		
5	165.56		
6	101.06		
7	66.76		
8	46.57		
9	38.15		
10	45.11		
11	66.70		
12	101.01		



Water Availability Assessment of Location

Base Threshold (cfs)	49.03
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.61
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	12.26
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81558 | Source Name: Cross Creek @ Bullock Withdrawal Site / Isabelle Bullock

Source Latitude: 40.30735

Source Longitude: -80.569317

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 74.66 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,500

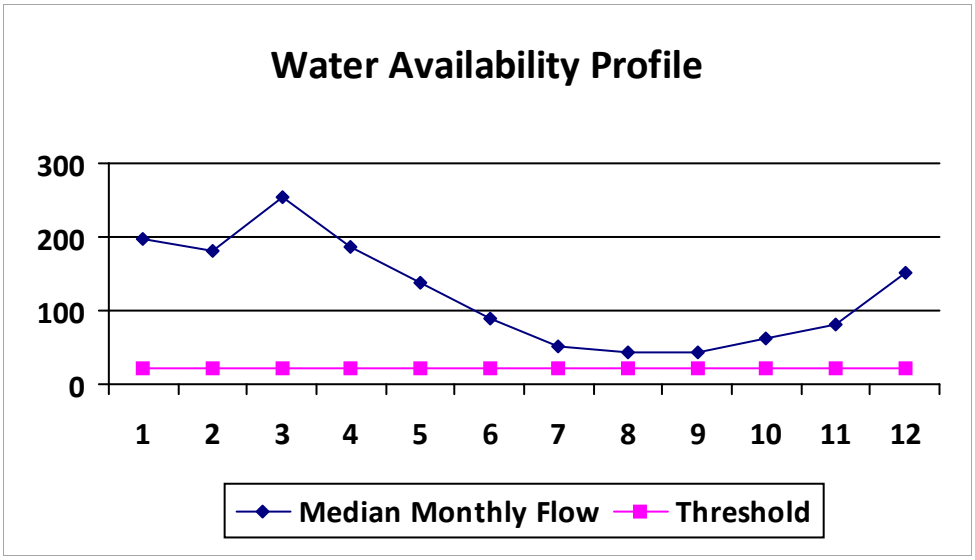
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3110830 KINGS CREEK AT WEIRTON, WV

Drainage Area (sq. mi.): 48.90 | Gauge Threshold (cfs): 11

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	195.97		
2	180.05		
3	253.89		
4	186.52		
5	138.84		
6	89.57		
7	50.78		
8	42.06		
9	43.77		
10	61.47		
11	81.23		
12	151.05		



Water Availability Assessment of Location

Base Threshold (cfs)	16.79
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.20
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81559 | Source Name: Cross Creek @ DNR / WVDNR

Source Latitude: 40.300536

Source Longitude: -80.542229

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 68.58 | County: Brooke

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 3,000

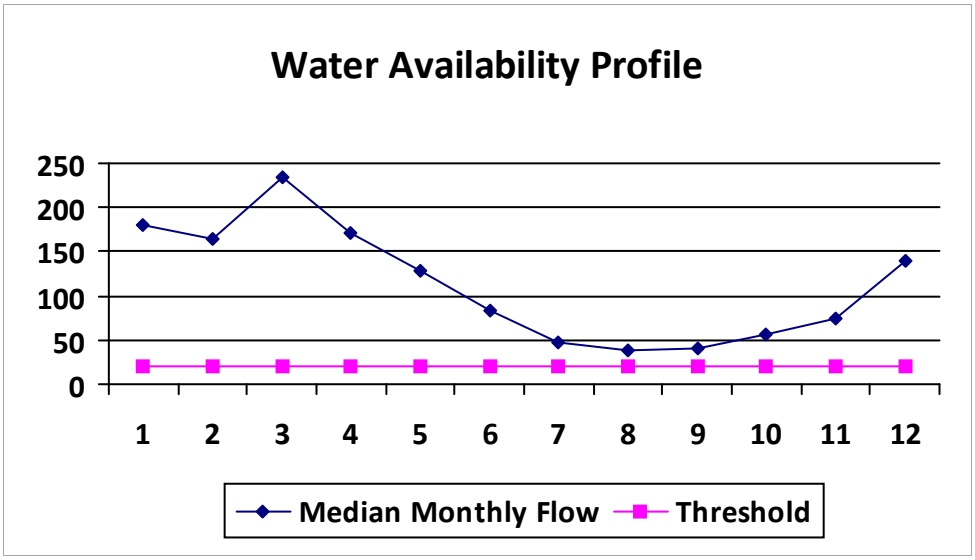
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3110830 KINGS CREEK AT WEIRTON, WV

Drainage Area (sq. mi.): 48.90 | Gauge Threshold (cfs): 11

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	180.01		
2	165.39		
3	233.21		
4	171.33		
5	127.53		
6	82.28		
7	46.64		
8	38.64		
9	40.20		
10	56.46		
11	74.61		
12	138.75		



Water Availability Assessment of Location

Base Threshold (cfs)	15.43
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	6.68
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	3.86
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81560 | Source Name: Cross Creek @ Norfolk and Western Railway / Wheeling & Lake Erie Railway Company

Source Latitude: 40.30802

Source Longitude: -80.599193

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 79.78 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 5,250

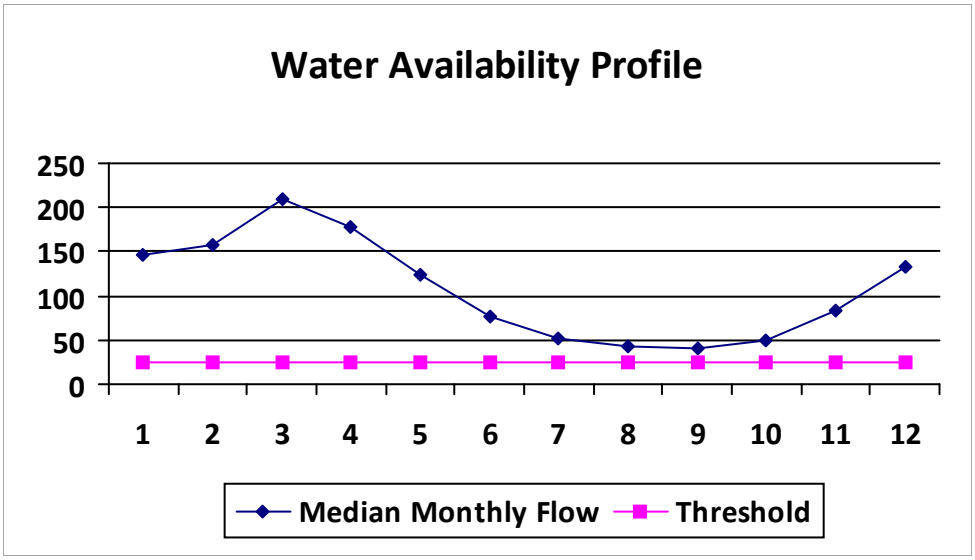
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	145.84	-	-
2	157.01	-	-
3	209.66	-	-
4	179.03	-	-
5	123.50	-	-
6	77.55	-	-
7	51.06	-	-
8	42.76	-	-
9	40.85	-	-
10	49.46	-	-
11	83.93	-	-
12	131.80	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	11.70
Headwater Safety (cfs):	5.16
Ungauged Stream Safety (cfs):	5.16
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81561 Source Name: Cross Creek @ Palizzi / Campbell Palizzi

Source Latitude: 40.302427

Source Longitude: -80.582753

HUC-8 Code: 5030101

Drainage Area (sq. mi.) 79.78 County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

Max. Simultaneous Trucks:

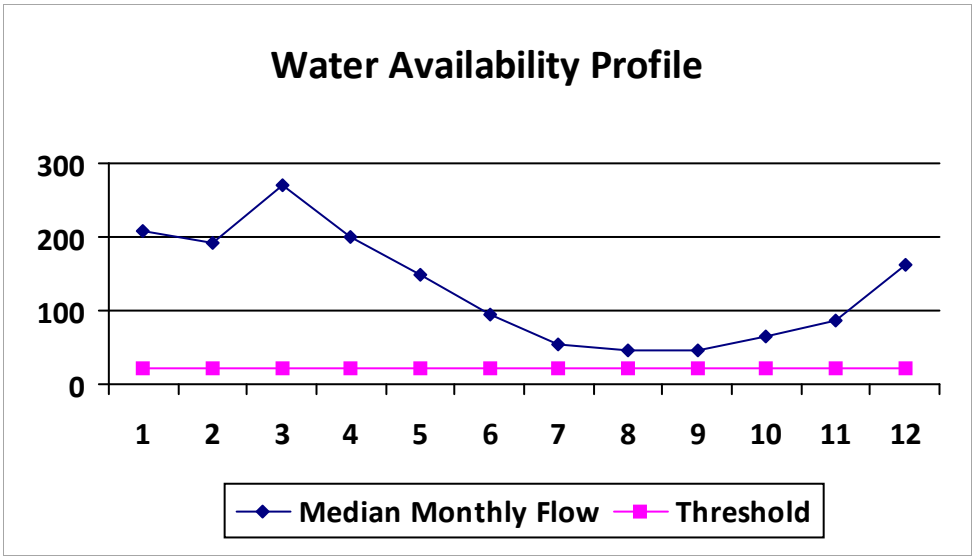
Max. Truck pump rate (gpm)

Reference Gauge: 3110830 KINGS CREEK AT WEIRTON, WV

Drainage Area (sq. mi.): 48.90

Gauge Threshold (cfs): 11

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	209.41		
2	192.40		
3	271.30		
4	199.31		
5	148.36		
6	95.71		
7	54.26		
8	44.94		
9	46.77		
10	65.68		
11	86.80		
12	161.41		



Water Availability Assessment of Location

Base Threshold (cfs)	17.95
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.49
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81562 | Source Name: Fish Creek @ Gribben

Revocable Living Trust of M. Peggy Gribben

Source Latitude: 39.753271

Source Longitude: -80.597913

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 141.61 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

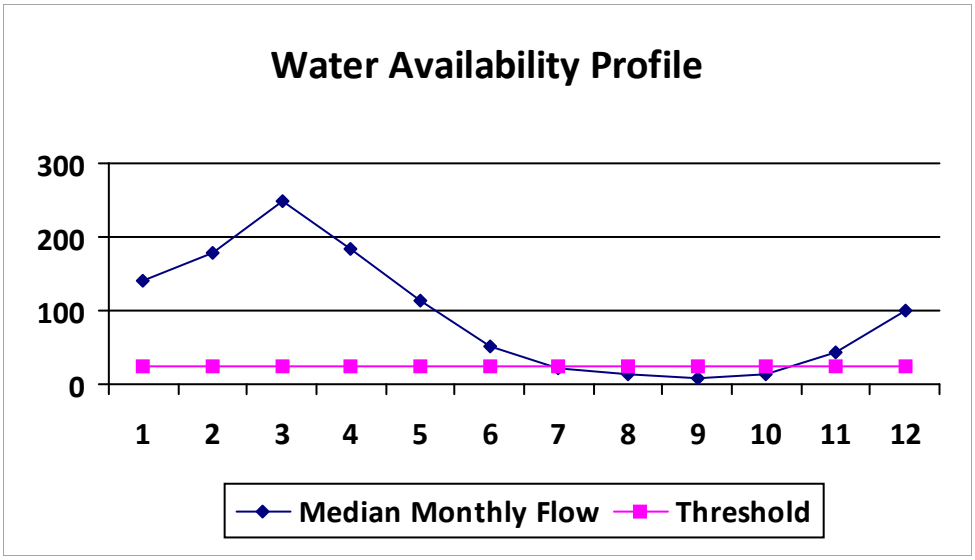
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	140.29		
2	179.02		
3	248.28		
4	184.31		
5	112.35		
6	51.13		
7	22.60		
8	13.22		
9	8.40		
10	13.92		
11	43.78		
12	99.26		



Water Availability Assessment of Location

Base Threshold (cfs)	19.15
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.79
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81563 | Source Name: Fish Creek @ Guzek / Walter A. Guzek

Source Latitude: 39.753021

Source Longitude: -80.613941

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 144.57 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

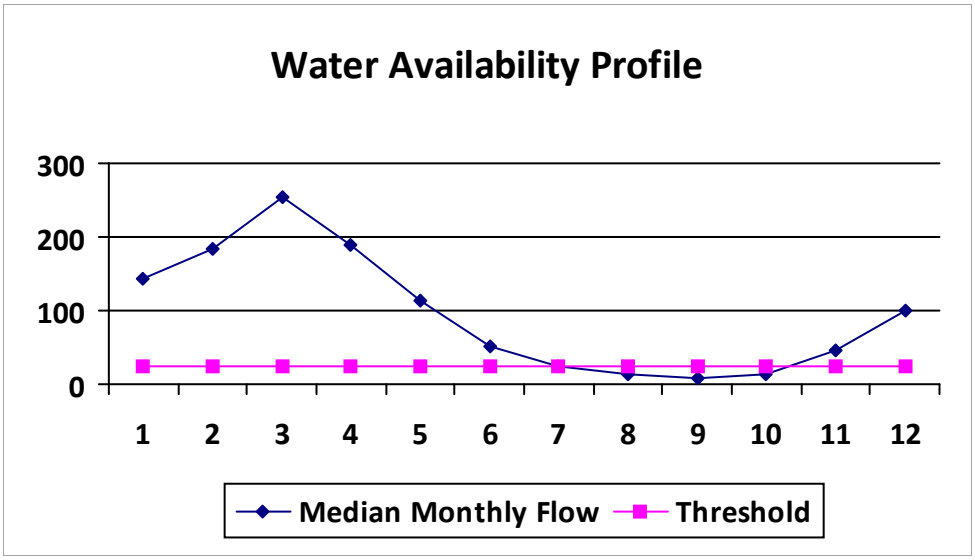
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	143.23		
2	182.77		
3	253.47		
4	188.16		
5	114.70		
6	52.20		
7	23.07		
8	13.49		
9	8.57		
10	14.21		
11	44.69		
12	101.34		



Water Availability Assessment of Location

Base Threshold (cfs)	19.55
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.89
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81564 | Source Name: Little Wheeling Creek @ Edge Withdrawal Site / Alice Mae Edge

Source Latitude: 40.098

Source Longitude: -80.5558

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 4.26 | County: Ohio

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

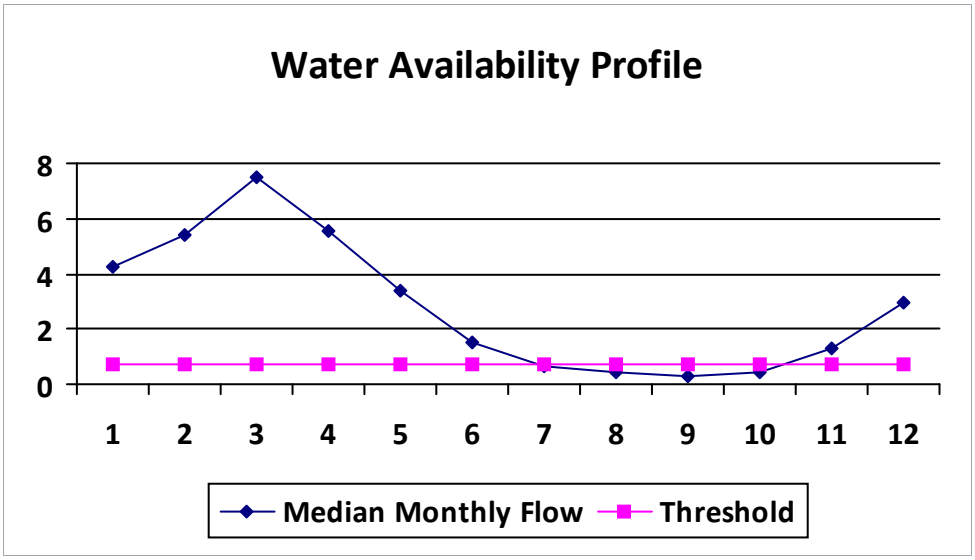
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	4.22		
2	5.39		
3	7.47		
4	5.54		
5	3.38		
6	1.54		
7	0.68		
8	0.40		
9	0.25		
10	0.42		
11	1.32		
12	2.99		



Water Availability Assessment of Location

Base Threshold (cfs)	0.58
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.14
Ungauged Stream Safety (cfs):	0.14
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81565 | Source Name: Little Wheeling Creek @ Main Street Bank / Main Street Bank

Source Latitude: 40.064076

Source Longitude: -80.614406

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 13.94 | County: Ohio

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

Max. Simultaneous Trucks:

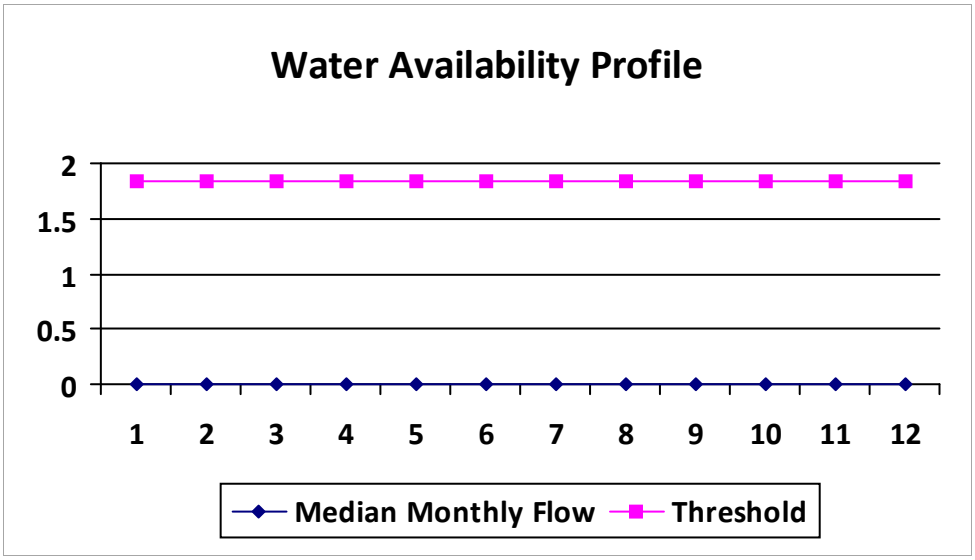
Max. Truck pump rate (gpm)

Reference Gauge: 3111955 | Wheeling Creek near Majorsville, WV

Drainage Area (sq. mi.): 152.00

Gauge Threshold (cfs): 16

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	0.00		-
2	0.00		-
3	0.00		-
4	0.00		-
5	0.00		-
6	0.00		-
7	0.00		-
8	0.00		-
9	0.00		-
10	0.00		-
11	0.00		-
12	0.00		-



Water Availability Assessment of Location

Base Threshold (cfs)	1.47
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.37
Ungauged Stream Safety (cfs):	0.37
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81566 | Source Name: Little Wheeling Creek @ Rt. 40 Staging Area

JDS Investments, LLC

Source Latitude: 40.078324

Source Longitude: -80.591145

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 13.94 | County: Ohio

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

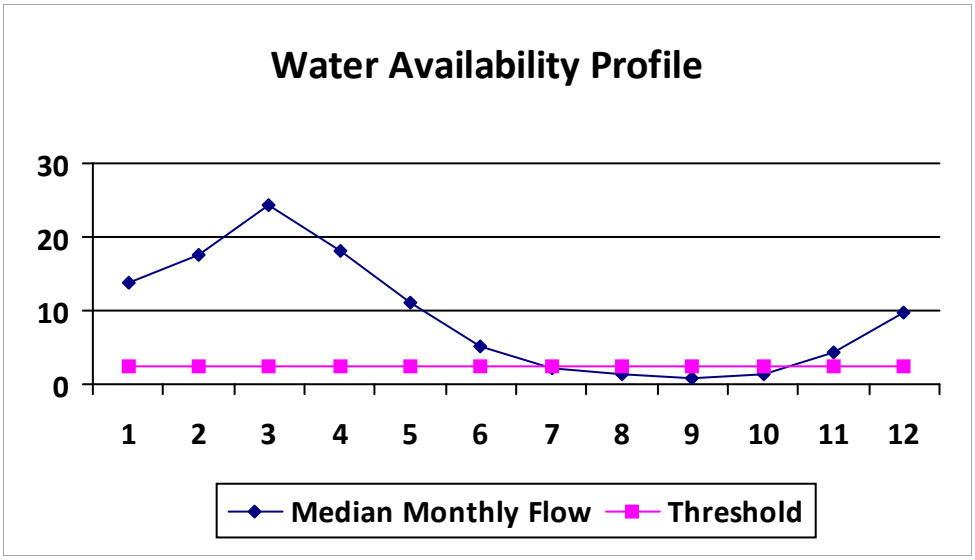
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	13.81		
2	17.62		
3	24.44		
4	18.14		
5	11.06		
6	5.03		
7	2.22		
8	1.30		
9	0.83		
10	1.37		
11	4.31		
12	9.77		



Water Availability Assessment of Location

Base Threshold (cfs)	1.89
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.47
Ungauged Stream Safety (cfs):	0.47
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81567 | Source Name: Middle Wheeling Creek @ Gribben / Lawrence Kevin Gribber

Source Latitude: 40.036777

Source Longitude: -80.598008

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 30.81 | County: Ohio

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

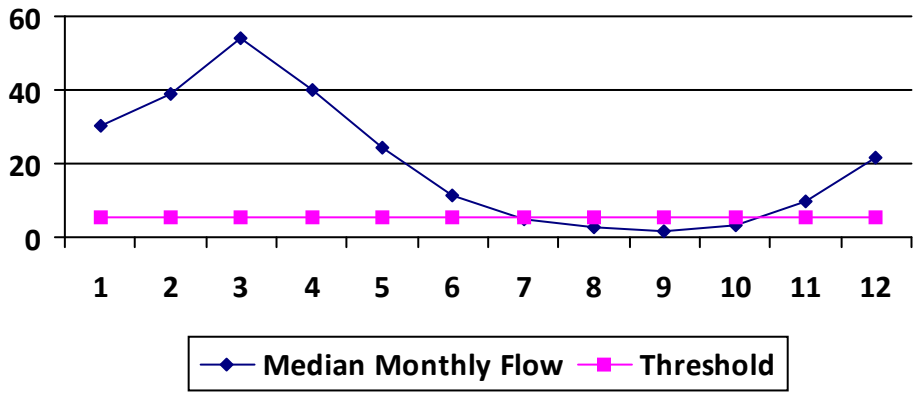
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	30.52		
2	38.95		
3	54.02		
4	40.10		
5	24.44		
6	11.13		
7	4.92		
8	2.88		
9	1.83		
10	3.03		
11	9.52		
12	21.60		



Water Availability Assessment of Location

Base Threshold (cfs)	4.17
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	1.04
Ungauged Stream Safety (cfs):	1.04
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81568 | Source Name: Middle Wheeling Creek @ Supler / Gregory and Peggy Supler

Source Latitude: 40.04409

Source Longitude: -80.55348

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 20.54 | County: Ohio

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,500

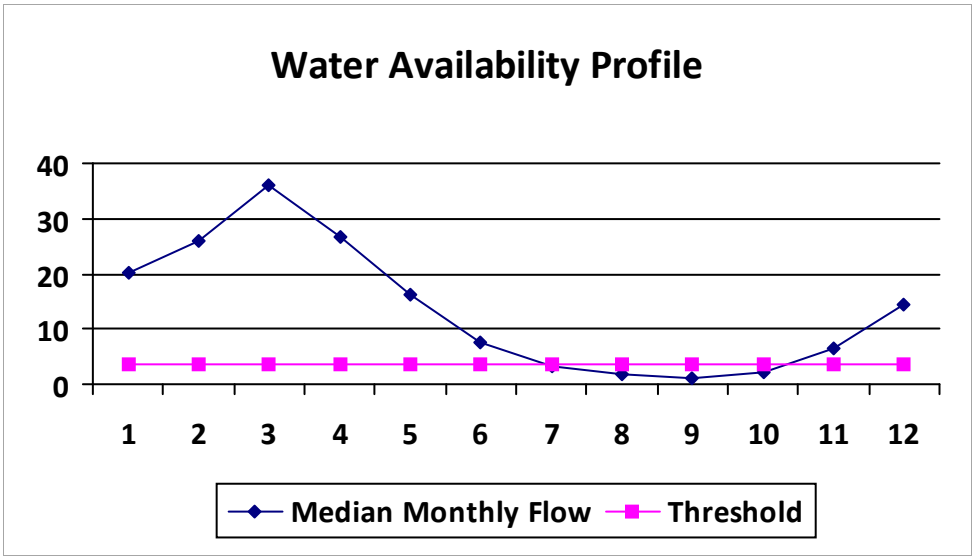
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	20.35		
2	25.97		
3	36.01		
4	26.73		
5	16.30		
6	7.42		
7	3.28		
8	1.92		
9	1.22		
10	2.02		
11	6.35		
12	14.40		



Water Availability Assessment of Location

Base Threshold (cfs)	2.78
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.69
Ungauged Stream Safety (cfs):	0.69
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81569 | Source Name: Ohio River @ Extraction B Panhandle

SWN Production Company, LLC

Source Latitude: 40.233469

Source Longitude: -80.654359

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 4,375

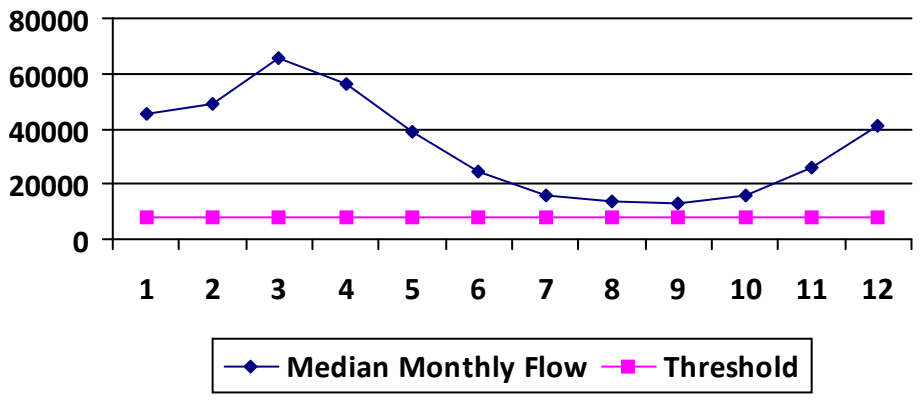
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	9.75
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81570 | Source Name: Ohio River @ Proctor Peacemaker

SWN Production Company, LLC

Source Latitude: 39.714299

Source Longitude: -80.825862

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Wetzel

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 6,000

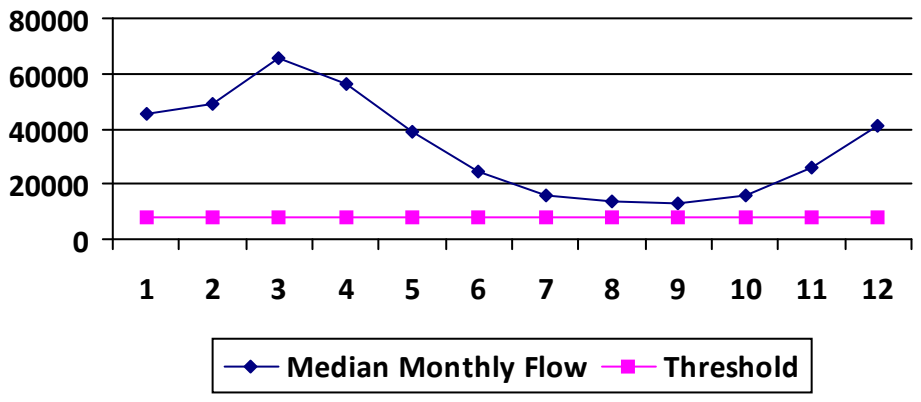
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	13.37
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81571 | Source Name: Paw Paw Creek @ Horizon Ventures

Horizon Ventures of WV, Inc

Source Latitude: 39.552426

Source Longitude: -80.166833

HUC-8 Code: 5020003

Drainage Area (sq. mi.) 28.34 | County: Marion

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

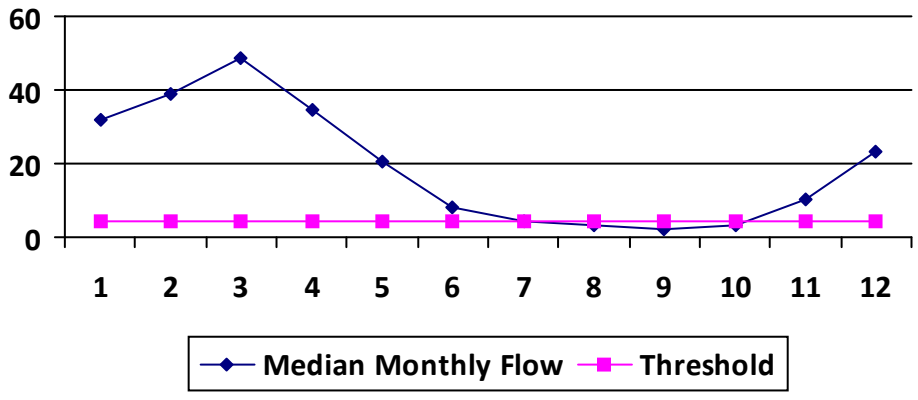
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3061500 BUFFALO CREEK AT BARRACKVILLE, WV

Drainage Area (sq. mi.): 116.00 | Gauge Threshold (cfs): 15

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	31.74		
2	39.11		
3	48.41		
4	34.37		
5	20.75		
6	8.19		
7	4.57		
8	3.18		
9	2.35		
10	3.03		
11	10.46		
12	23.48		



Water Availability Assessment of Location

Base Threshold (cfs)	3.66
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.92
Ungauged Stream Safety (cfs):	0.92
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81572 Source Name: Short Creek @ Cain

Susan L. Cain

Source Latitude: 40.155061

Source Longitude: -80.651431

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 16.58 County: Ohio

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 3,360

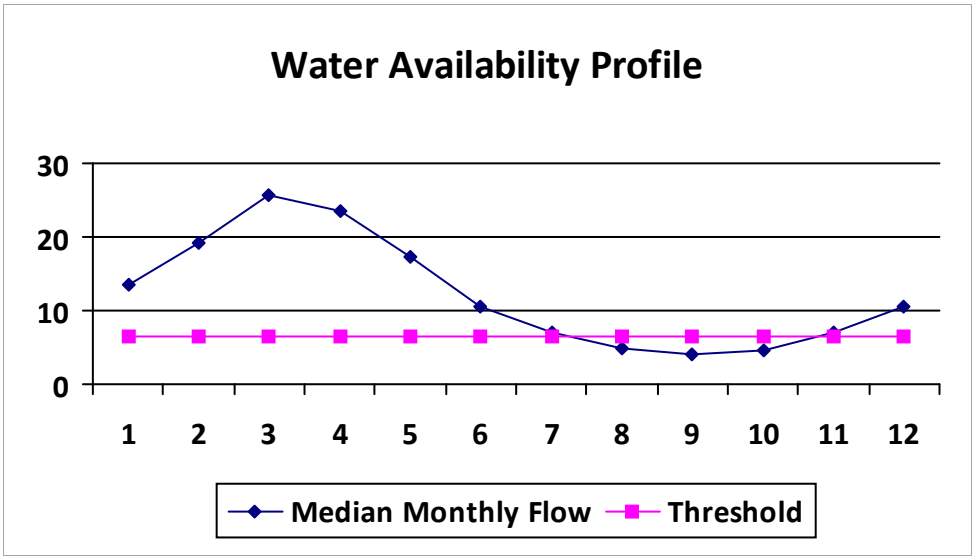
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	13.39		
2	19.18		
3	25.67		
4	23.44		
5	17.30		
6	10.56		
7	6.97		
8	4.87		
9	3.99		
10	4.71		
11	6.97		
12	10.55		



Water Availability Assessment of Location

Base Threshold (cfs)	5.12
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	7.49
Headwater Safety (cfs):	1.28
Ungauged Stream Safety (cfs):	1.28
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81573 | Source Name: West Virginia Fork of Fish Creek @ Van Scyoc With Israel D Van Scyoc

Source Latitude: 39.6908

Source Longitude: -80.4762

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 21.96 | County: Wetzel

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

Max. Simultaneous Trucks:

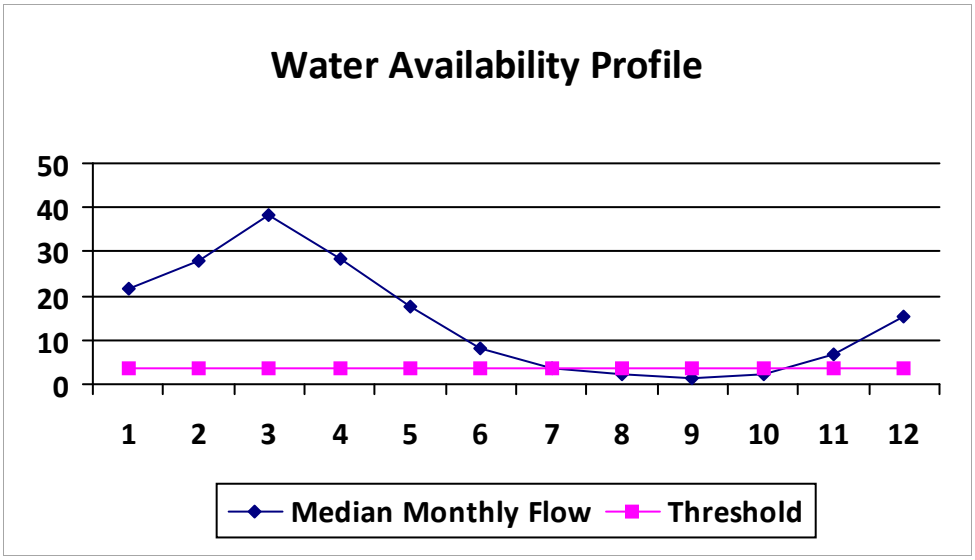
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	21.76		
2	27.76		
3	38.50		
4	28.58		
5	17.42		
6	7.93		
7	3.50		
8	2.05		
9	1.30		
10	2.16		
11	6.79		
12	15.39		



Water Availability Assessment of Location

Base Threshold (cfs)	2.97
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.74
Ungauged Stream Safety (cfs):	0.74
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81574 | Source Name: Wheeling Creek @ Iskon / Iskcon New Vrindaban, Inc.

Source Latitude: 39.967973

Source Longitude: -80.599241

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 189.6 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,500

Max. Simultaneous Trucks:

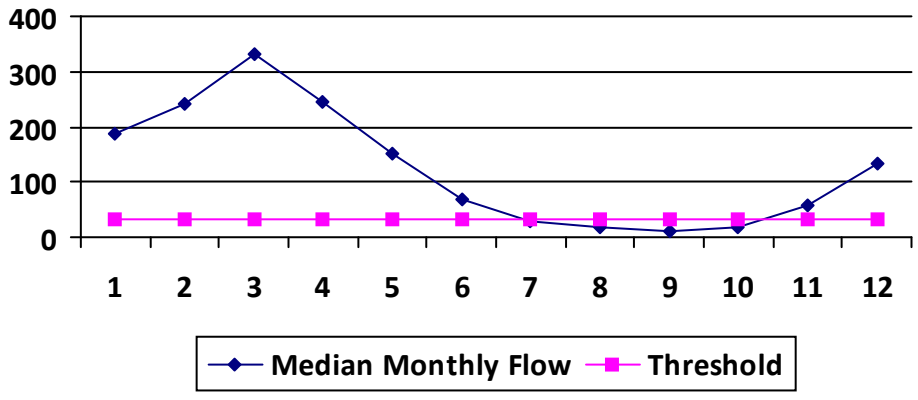
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	187.84		
2	239.69		
3	332.43		
4	246.77		
5	150.42		
6	68.46		
7	30.25		
8	17.70		
9	11.25		
10	18.63		
11	58.61		
12	132.90		



Water Availability Assessment of Location

Base Threshold (cfs)	25.64
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	6.41
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81575 | Source Name: Wheeling Creek @ Schafer / Betty Jane Schafer

Source Latitude: 39.99257

Source Longitude: -80.634912

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 203.38 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 5,250

Max. Simultaneous Trucks:

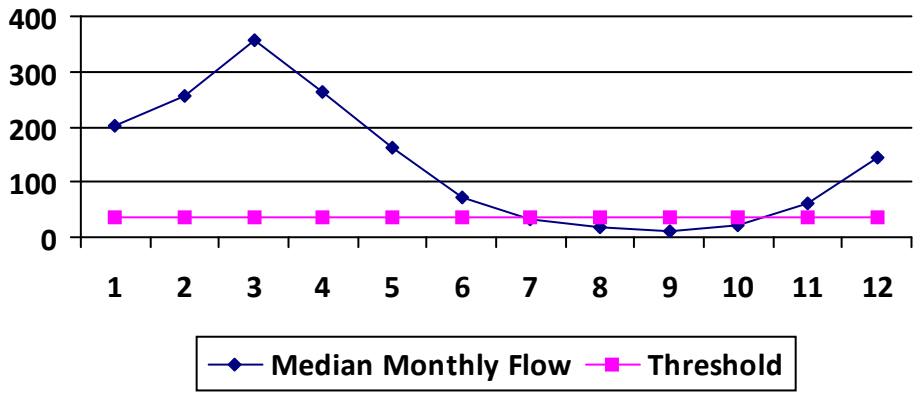
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	201.49		
2	257.11		
3	356.59		
4	264.71		
5	161.35		
6	73.44		
7	32.45		
8	18.98		
9	12.06		
10	19.99		
11	62.87		
12	142.56		



Water Availability Assessment of Location

Base Threshold (cfs)	27.50
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	11.70
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	6.88
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81576 | Source Name: Wheeling Creek @ Sligar / Terry Sligar

Source Latitude: 40.013185

Source Longitude: -80.652863

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 211.8 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 3,360

Max. Simultaneous Trucks:

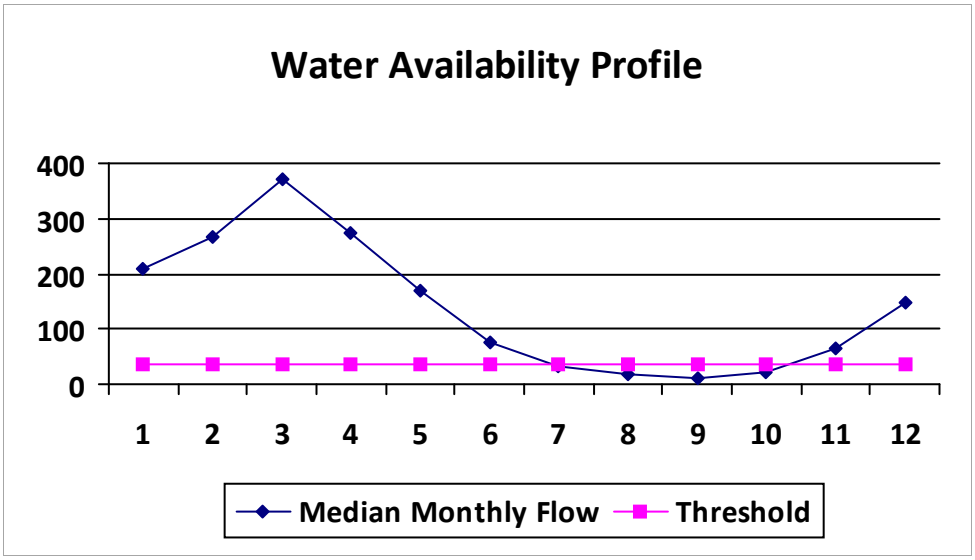
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	209.83		
2	267.76		
3	371.35		
4	275.67		
5	168.03		
6	76.48		
7	33.80		
8	19.77		
9	12.56		
10	20.81		
11	65.47		
12	148.46		



Water Availability Assessment of Location

Base Threshold (cfs)	28.64
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	7.49
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	7.16
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81577 | Source Name: Whiteday Creek @ Sorine Withdrawal Site

Andrew Sorine, Jr.

Source Latitude: 39.472311

Source Longitude: -79.977123

HUC-8 Code: 5020003

Drainage Area (sq. mi.): 12.29 | County: Marion

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

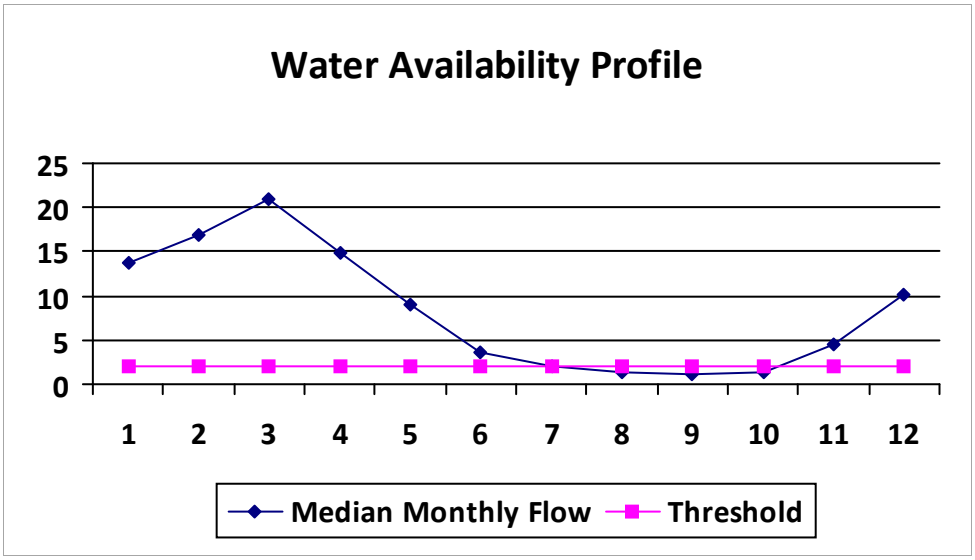
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3061500 | BUFFALO CREEK AT BARRACKVILLE, WV

Drainage Area (sq. mi.): 116.00 | Gauge Threshold (cfs): 15

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	13.77		
2	16.96		
3	20.99		
4	14.90		
5	9.00		
6	3.55		
7	1.98		
8	1.38		
9	1.02		
10	1.31		
11	4.54		
12	10.18		



Water Availability Assessment of Location

Base Threshold (cfs)	1.59
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.40
Ungauged Stream Safety (cfs):	0.40
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81578 | Source Name: WV Fork Fish Creek @ Derby / Steven Derby

Source Latitude: 39.709329

Source Longitude: -80.536079

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 48.62 | County: Wetzel

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

Max. Simultaneous Trucks:

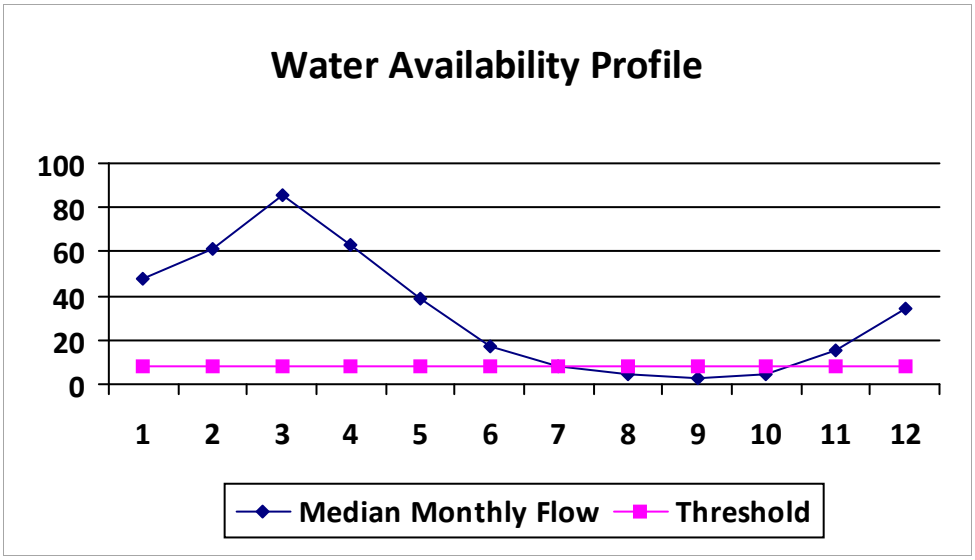
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	48.17		
2	61.47		
3	85.25		
4	63.28		
5	38.57		
6	17.56		
7	7.76		
8	4.54		
9	2.88		
10	4.78		
11	15.03		
12	34.08		



Water Availability Assessment of Location

Base Threshold (cfs)	6.57
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	9.36
Headwater Safety (cfs):	1.64
Ungauged Stream Safety (cfs):	1.64
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81579 | Source Name: WV Fork Fish Creek @ Francis

Loretta J. Francis

Source Latitude: 39.733295

Source Longitude: -80.579415

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 86.51 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 3,000

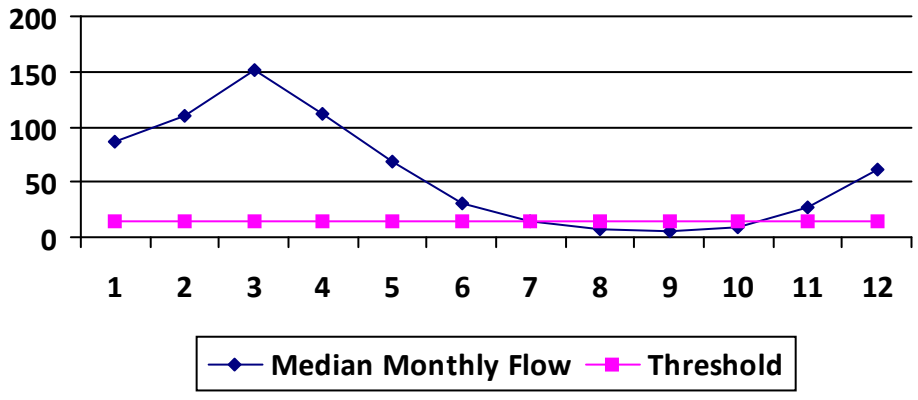
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	85.71		
2	109.37		
3	151.68		
4	112.60		
5	68.63		
6	31.24		
7	13.80		
8	8.07		
9	5.13		
10	8.50		
11	26.74		
12	60.64		



Water Availability Assessment of Location

Base Threshold (cfs)	11.70
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	6.68
Headwater Safety (cfs):	2.92
Ungauged Stream Safety (cfs):	2.92
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Water Management Plan:
Secondary Water Sources

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

MODIFICATION **Effective: 11/3/2021**

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Centralized Freshwater Impoundment

Source ID: 81618 Source Name: Ballato Freshwater Impoundment

Source Lat: 40.308611 Source Long: -80.565028 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81619 Source Name: Barry Greathouse Freshwater Impoundment

Source Lat: 40.18831 Source Long: -80.63714 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81621 Source Name: Corbin Freshwater Impoundment

Source Lat: 40.233122 Source Long: -80.524025 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81622 Source Name: Durig A Freshwater Impoundment

Source Lat: 39.715905 Source Long: -80.636785 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81623 Source Name: Durig B Freshwater Impoundment

Source Lat: 38.8022 Source Long: -80.638491 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81624 Source Name: Elmer Freshwater Impoundment

Source Lat: 38.831351 Source Long: -80.276326 County: Upshur

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81625 Source Name: Farmer Freshwater Impoundment

Source Lat: 40.146183 Source Long: -80.573857 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81626 Source Name: Ferrell Freshwater Impoundment

Source Lat: 40.04445 Source Long: -80.53023 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81627 Source Name: Heartwood Forestland Freshwater Impoundment

Source Lat: 39.123961 Source Long: -81.098573 County: Ritchie

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81628 Source Name: Helen Miller Freshwater Impoundment

Source Lat: 40.085722 Source Long: -80.623333 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81629 Source Name: Hickman Freshwater Impoundment

Source Lat: 40.041361 Source Long: -80.548944 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

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Source ID: 81634 Source Name: Hupp 1 Freshwater Impoundment

Source Lat: 40.175058 Source Long: -80.567622 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81635 Source Name: Hupp 2 Freshwater Impoundment

Source Lat: 40.175069 Source Long: -80.578206 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

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Source ID: 81636 Source Name: Kelley #2 Freshwater Impoundment

Source Lat: 39.681388 Source Long: -80.701113 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81637 Source Name: Kestner Freshwater Impoundment

Source Lat: 40.147904 Source Long: -80.539568 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

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Source ID: 81638 Source Name: Linda Greathouse Freshwater Impoundment

Source Lat: 40.205416 Source Long: -80.608805 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81639 Source Name: Lipps Freshwater Impoundment

Source Lat: 38.8446 Source Long: -80.3413 County: Upshur

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

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Source ID: 81640 Source Name: McGlumphy Freshwater Impoundment

Source Lat: 40.152588 Source Long: -80.587667 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81641 Source Name: Messenger Freshwater Impoundment

Source Lat: 393674857 Source Long: -80.689887 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

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Source ID: 81642 Source Name: Reliance Minerals A Freshwater Impoundment

Source Lat: 39.521316 Source Long: -79.973907 County: Monongalia

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81643 Source Name: Reliance Minerals B Freshwater Impoundment

Source Lat: 39.524571 Source Long: -79.974529 County: Monongalia

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

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Source ID: 81644 Source Name: Ross #2 Freshwater Impoundment

Source Lat: 38.9839 Source Long: -80.2628 County: Upshur

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81645 Source Name: Stern Freshwater Impoundment

Source Lat: 39.733943 Source Long: -80.64695 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

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Source ID: 81646 Source Name: Worthley Freshwater Impoundment

Source Lat: 40.216869 Source Long: -80.548592 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

Important: **MODIFICATION** **Effective: 11/3/2021**

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Purchased Water

Source ID: 81589 Source Name: 4K Industrial Park, LLC

Source Lat: 40.100395 Source Long: -80.71269 County: Belmont, OH

Max. Daily Purchase (gal) 588,000

DEP Comments: Treated and recycled flowback/produced water

Source ID: 81593 Source Name: Elite Gasfield Services, Midland Borough

Source Lat: 40.644598 Source Long: -80.469382 County:

Max. Daily Purchase (gal) 2,000,000

DEP Comments: Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

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Source ID: 81595 Source Name: Equitrans Water Services, LLC Cook Impoundment

Source Lat: 39.817197 Source Long: -80.477956 County: Greene, PA

Max. Daily Purchase (gal) 2,100,000

DEP Comments: PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.

Source ID: 81597 Source Name: Grant Town Water

Source Lat: 39.559407 Source Long: -80.172893 County: Marion

Max. Daily Purchase (gal) 100,000

DEP Comments: @ Horizon Ventures Withdrawal Location

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

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Source ID: 81598 Source Name: Hydro Recovery, LP

Source Lat: 40.419251 Source Long: -80.422684 County: Washington, MD

Max. Daily Purchase (gal) 1,000,000

DEP Comments: Treated and recycled flowback/produced water

Source ID: 81605 Source Name: Pennsylvania American Water

Source Lat: Source Long: County:

Max. Daily Purchase (gal) 864,000

DEP Comments: Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

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Source ID: 81607 Source Name: Raw Water Pond @ Horizon Ventures

Source Lat: 39.5535 Source Long: -80.16742 County: Marion

Max. Daily Purchase (gal) 1,008,000

DEP Comments:

Source ID: 81608 Source Name: Robinson Fork @ HG Energy

Source Lat: 39.979222 Source Long: -80.487472 County: Washington, MD

Max. Daily Purchase (gal) 1,600,000

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

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Source ID: 81612 Source Name: Washington Pike PSD @ Brook Hills Park

Source Lat: 40.26632 Source Long: -80.543592 County: Brooke

Max. Daily Purchase (gal) 1,000,000

DEP Comments:

Source ID: 81613 Source Name: WFN Impoundment A @ HG Energy

Source Lat: 39.991417 Source Long: -80.488694 County: Washington, PA

Max. Daily Purchase (gal) 1,600,000

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

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Source ID: 81614 Source Name: WFN Impoundment B @ HG Energy

Source Lat: 39.991917 Source Long: -80.4965 County: Washington, PA

Max. Daily Purchase (gal) 1,600,000

DEP Comments:

Source ID: 81620 Source Name: Columbia Gas Transmission (TCO Elson) FWI

Source Lat: 39.75398 Source Long: -80.613604 County: Marshall

Max. Daily Purchase (gal)

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important:

MODIFICATION Effective: 11/3/2021

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Source ID: 81630 Source Name: Hieronimus #1 Freshwater Impoundment

Source Lat: 39.811 Source Long: -80.5212 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81631 Source Name: Hieronimus #2 Freshwater Impoundment

Source Lat: 39.8149 Source Long: -80.5233 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important:

MODIFICATION Effective: 11/3/2021

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Source ID: 81632 Source Name: Hieronimus #3 Freshwater Impoundment

Source Lat: 39.8162 Source Long: -80.5266 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81633 Source Name: Hieronimus #4 Freshwater Impoundment

Source Lat: 39.8198 Source Long: -80.5295 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

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Recycled Frac Water

Source ID: 81647 Source Name:

Source Lat: Source Long: County:

Max. Daily Purchase (gal)

DEP Comments: Various sources include, but are not limited to, the Brownlee Land Ventures well pad.

west virginia department of environmental protection

Water Management Plan:
Well Pad Overview

WMP 02104 | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad | County: Marshall

MODIFICATION **Effective: 11/3/2021**

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supercedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

API Number:	Well Name/Number:	API Number:	Well Name/Number:
047-051-01777	Betty Schafer MSH 210H		
047-051-01776	Betty Schafer MSH 201H		
047-051-01872	Betty Schafer MSH 5H		
047-051-01871	Betty Schafer MSH 401H		
047-051-02297	Betty Schafer MSH 8H		
047-051-02298	Betty Schafer MSH 10H		
047-051-02382	Betty Schafer MSH 1H		
047-051-02383	Betty Schafer MSH 405H		
047-051-02417	Betty Schafer MSH 3H		

The following water consumption estimates (in gallons) have been reported for this plan:

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	25,807,320
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activites:	210,000
Total for Well Pad	26,857,320

Est. Construction Start: 12/1/2014

Est. Reclamation End: 12/1/2026

Dawn Newell Digitally signed by Dawn Newell Date: 2021.11.03 15:30:57 -04'00'

Water Management Plan:
Primary Water Sources

WMP 02104	API/ID Number	see overview	Operator:	SWN Production Company, LLC	
Plan Type: Well Pad	Betty Schafer MSH Well Pad				

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

For any sources identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for mutiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interepreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this water management plan.

WMP 02104 | API Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Stream/River

- Source **Big Wheeling Creek @ Wheeling Staging Area** Ohio Owner: **Fulton Storage, LLC**

Max. daily purchase (gal) | Intake Latitude: 40.077019 | Intake Longitude: -80.713866

☐ Regulated Stream? | Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Booths Creek @ Reliance Minerals** Monongalia Owner: **Reliance Minerals, Inc.**

Max. daily purchase (gal) | Intake Latitude: 39.530405 | Intake Longitude: -79.978079

☐ Regulated Stream? | Ref. Gauge ID: 3062500 DECKERS CREEK AT MORGANTOWN, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ Bethany VFD Withdrawal Site** Brooke Owner: **Bethany Pike Volunteer Fire Department**

Max. daily purchase (gal) | Intake Latitude: 40.253422 | Intake Longitude: -80.600319

☐ Regulated Stream? | Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,100 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Source **Buffalo Creek @ DNR** Brooke Owner: **WVDNR**

Max. daily purchase (gal) | Intake Latitude: 40.19386 | Intake Longitude: -80.525796

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,200 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ Forney** Brooke Owner: **Forney & Sons Holding Company, LLC**

Max. daily purchase (gal) | Intake Latitude: 40.193453 | Intake Longitude: -80.52175

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ Fuchs** Brooke Owner: **Beverly Fuchs**

Max. daily purchase (gal) | Intake Latitude: 40.258863 | Intake Longitude: -80.60337

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ Greathouse Withdrawal Site** Brooke Owner: **Linda Greathouse**

Max. daily purchase (gal) | Intake Latitude: 40.20895 | Intake Longitude: -80.60105

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,300 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ Labelle Farms** Brooke Owner: **Steve Paul**

Max. daily purchase (gal) | Intake Latitude: 40.204444 | Intake Longitude: -80.598645

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Source **Buffalo Creek @ Worthley Withdrawal Site** Brooke Owner: **Kimberly C. Worthley**

Max. daily purchase (gal) | Intake Latitude: 40.210978 | Intake Longitude: -80.548779

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ WVDOH** Brooke Owner: **West Virginia Division of Highways**

Max. daily purchase (gal) Intake Latitude: 40.258863 Intake Longitude: -80.60337

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 3,360 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: http://www.erh.noaa.gov/ohrfc//flows.shtml

- Source **Buffalo Creek @ Zatta** Brooke Owner: **Edward Zatta**

Max. daily purchase (gal) Intake Latitude: 40.253588 Intake Longitude: -80.600254

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 2,520 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Source **Cross Creek @ Bullock Withdrawal Site** Brooke Owner: **Isabelle Bullock**

Max. daily purchase (gal) Intake Latitude: 40.30735 Intake Longitude: -80.569317

☐ Regulated Stream? Ref. Gauge ID: 3110830 KINGS CREEK AT WEIRTON, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Cross Creek @ DNR** Brooke Owner: **WVDNR**

Max. daily purchase (gal) | Intake Latitude: 40.300536 | Intake Longitude: -80.542229

☐ Regulated Stream? Ref. Gauge ID: 3110830 KINGS CREEK AT WEIRTON, WV

Max. Pump rate (gpm): 3,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Cross Creek @ Norfolk and Western Railway** Brooke Owner: **Wheeling & Lake Erie Railway Company**

Max. daily purchase (gal) | Intake Latitude: 40.30802 | Intake Longitude: -80.599193

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Cross Creek @ Palizzi** Brooke Owner: **Campbell Palizzi**

Max. daily purchase (gal) | Intake Latitude: 40.302427 | Intake Longitude: -80.582753

☐ Regulated Stream? Ref. Gauge ID: 3110830 KINGS CREEK AT WEIRTON, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Source **Fish Creek @ Gribben** Marshall Owner: **Revocable Living Trust of M. Peggy Gribben**

Max. daily purchase (gal) Intake Latitude: 39.753271 Intake Longitude: -80.597913

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Fish Creek @ Guzek** Marshall Owner: **Walter A. Guzek**

Max. daily purchase (gal) Intake Latitude: 39.753021 Intake Longitude: -80.613941

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Little Wheeling Creek @ Edge Withdrawal Site** Ohio Owner: **Alice Mae Edge**

Max. daily purchase (gal) Intake Latitude: 40.098 Intake Longitude: -80.5558

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Little Wheeling Creek @ Main Street Bank** Ohio Owner: **Main Street Bank**

Max. daily purchase (gal) Intake Latitude: 40.064076 Intake Longitude: -80.614406

☐ Regulated Stream? Ref. Gauge ID: 3111955 Wheeling Creek near Majorsville, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Source **Little Wheeling Creek @ Rt. 40 Staging Area** Ohio Owner: **JDS Investments, LLC**

Max. daily purchase (gal) Intake Latitude: 40.078324 Intake Longitude: -80.591145

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Middle Wheeling Creek @ Gribben** Ohio Owner: **Lawrence Kevin Gribber**

Max. daily purchase (gal) Intake Latitude: 40.036777 Intake Longitude: -80.598008

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Middle Wheeling Creek @ Supler** Ohio Owner: **Gregory and Peggy Supler**

Max. daily purchase (gal) | Intake Latitude: 40.04409 | Intake Longitude: -80.55348

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Ohio River @ Extraction B Panhandle** Brooke Owner: **SWN Production Company, LLC**

Max. daily purchase (gal) | Intake Latitude: 40.233469 | Intake Longitude: -80.654359

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 4,375 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ Proctor Peacemaker** Wetzel Owner: **SWN Production Company, LLC**

Max. daily purchase (gal) | Intake Latitude: 39.714299 | Intake Longitude: -80.825862

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 6,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Paw Paw Creek @ Horizon Ventures** Marion Owner: **Horizon Ventures of WV, Inc**

Max. daily purchase (gal) | Intake Latitude: 39.552426 | Intake Longitude: -80.166833

☐ Regulated Stream? Ref. Gauge ID: 3061500 BUFFALO CREEK AT BARRACKVILLE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Source **Short Creek @ Cain** Ohio Owner: **Susan L. Cain**

Max. daily purchase (gal) | Intake Latitude: 40.155061 | Intake Longitude: -80.651431

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,360 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **West Virginia Fork of Fish Creek @ Van Scyoc Withdrawal** Wetzel Owner: **Israel D Van Scyoc**

Max. daily purchase (gal) | Intake Latitude: 39.6908 | Intake Longitude: -80.4762

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Wheeling Creek @ Iskon** Marshall Owner: **Iskcon New Vrindaban, Inc.**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
	39.967973	-80.599241

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or the Wheeling Creek @ Sligar site

- Source **Wheeling Creek @ Schafer** Marshall Owner: **Betty Jane Schafer**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
	39.99257	-80.634912

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Wheeling Creek @ Sligar** Marshall Owner: **Terry Sligar**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
	40.013185	-80.652863

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 3,360 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or Wheeling Creek @ Iskcon site.

- Source **Whiteday Creek @ Sorine Withdrawal Site** Marion Owner: **Andrew Sorine, Jr.**

Max. daily purchase (gal) Intake Latitude: 39.472311 Intake Longitude: -79.977123

☐ Regulated Stream? Ref. Gauge ID: 3061500 BUFFALO CREEK AT BARRACKVILLE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **WV Fork Fish Creek @ Derby** Wetzel Owner: **Steven Derby**

Max. daily purchase (gal) Intake Latitude: 39.709329 Intake Longitude: -80.536079

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **WV Fork Fish Creek @ Francis** Marshall Owner: **Loretta J. Francis**

Max. daily purchase (gal) Intake Latitude: 39.733295 Intake Longitude: -80.579415

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 3,000 **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

WMP 02104 | API Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Purchased Water

- Source **Adrian Public Service District** Upshur Owner: **Adrian Public Service District**

Max. daily purchase (gal): 144,000 | Intake Latitude: 38.9775 | Intake Longitude: -80.22083

☐ Regulated Stream? Ref. Gauge ID: 3054500 TYGART VALLEY RIVER AT PHILIPPI, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **American Petroleum Partners (Wheeling Creek @ Wilson)** Marshall Owner: **American Petroleum Partners, LLC**

Max. daily purchase (gal): 3,500,000 | Intake Latitude: 39.975882 | Intake Longitude: -80.62967

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): **4,200** **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Covestro, LLC** Marshall Owner: **Covestro, LLC**

Max. daily purchase (gal): 1,050,000 | Intake Latitude: 39.7218 | Intake Longitude: -80.830231

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Elite Gasfield Services** Brooke Owner: **Elite Gasfield Services**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,000,000	40.32667	-80.59861

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Grandview-Doolin PSD** Marshall Owner: **Grandview-Doolin Public Service District**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
60,480	39.71361	-80.82583

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Marshall County Public Service District 3** Marshall Owner: **Marshall County Public Service District #4**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
144,000	39.93556	-80.75833

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Tap Location is: (39.906400, -80.586200)

- Source **Marshall County Public Service District 4** Marshall Owner: **Marshall County Public Service District #4**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
80,000	39.93556	-80.75833

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Source **Ohio County PSD** Ohio Owner: **Ohio county PSD**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
720,000	40.14972	-80.70167

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ 4K Industrial Park** Belmont, OH Owner: **4K Industrial Park, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,982,000	40.098805	-80.711328

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ J&R Excavating** Marshall Owner: **J&R Excavating**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,890,000	39.998509	-80.737336

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ Oasis Transport Withdrawal Site** Brooke Owner: **Oasis Transport, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,890,000	40.331551	-80.601034

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Range Tap @ Corbin Withdrawal Site** Brooke Owner: **Range Resources Corp.**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,100,000	40.229983	-80.521067

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **The Village of Valley Grove** Ohio Owner: **The Village of Valley Grove**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
720,000	40.14972	-80.70167

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Valley Falls PSD** Marion Owner: **Valley Falls PSD**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
144,000	39.45889	-80.15583

☐ Regulated Stream? Ref. Gauge ID: 3057000 TYGART VALLEY RIVER AT COLFAX, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Wheeling Creek #1 @ HG Energy** Marshall Owner: **HG Energy, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,440,000	39.95205	-80.56189

☐ Regulated Stream? Ref. Gauge ID: 3111955 Wheeling Creek near Majorsville, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Wheeling Creek # 2 @ HG Energy** Marshall Owner: **HG Energy, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,880,000	39.949577	-80.531255

☐ Regulated Stream? Ref. Gauge ID: 3111955 Wheeling Creek near Majorsville, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments:

- Source **Wheeling Water Department** Ohio Owner: **Wheeling Water Department**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
720,000	40.14972	-80.70167

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: Refer to the specified sation on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Source Summary **MODIFICATION** **Effective: 11/3/2021**

WMP 02104 API Number see overview Operator: SWN Production Company, LLC

Plan Type Well Pad Betty Schafer MSH Well Pad

Groundwater

- Source **Shoemaker Groundwater Wells @ HG Energy** Marshall Owner: **HG Energy, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
576,000	40.0222	-80.733888

☐ Regulated Stream? Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **800** **Min. Gauge Reading (cfs):** **Min. Passby (cfs):**

DEP Comments: This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals. https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81609 | Source Name: Shoemaker Groundwater Wells @ HG Energy / HG Energy, LLC

Source Latitude: 40.0222

Source Longitude: -80.733888

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Marshall

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 800

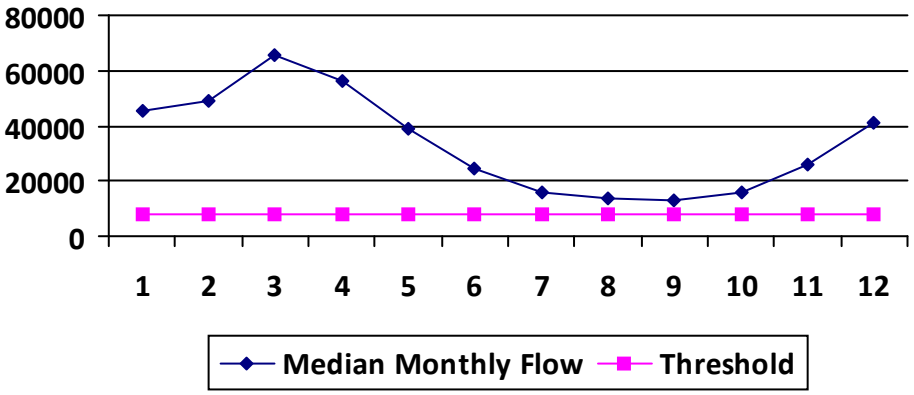
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	1.78
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81590 | Source Name: Adrian Public Service District / Adrian Public Service District

Source Latitude: 38.9775

Source Longitude: -80.22083

HUC-8 Code: 5020001

Drainage Area (sq. mi.): 197.33 | County: Upshur

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

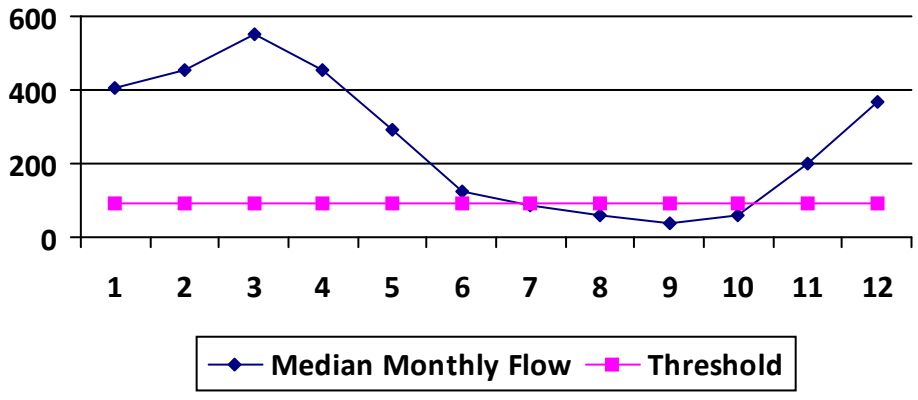
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3054500 TYGART VALLEY RIVER AT PHILIPPI, WV

Drainage Area (sq. mi.): 914.00 | Gauge Threshold (cfs): 341

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	402.75		
2	456.66		
3	551.03		
4	451.73		
5	291.41		
6	124.17		
7	85.17		
8	59.44		
9	37.59		
10	60.75		
11	201.45		
12	368.28		



Water Availability Assessment of Location

Base Threshold (cfs)	73.62
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	18.41
Ungauged Stream Safety (cfs):	18.41
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81591 | Source Name: American Petroleum Partners (Wheeling Creek @ W / American Petroleum Partners, LLC

Source Latitude: 39.975882

Source Longitude: -80.62967

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 192.96 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

Max. Simultaneous Trucks:

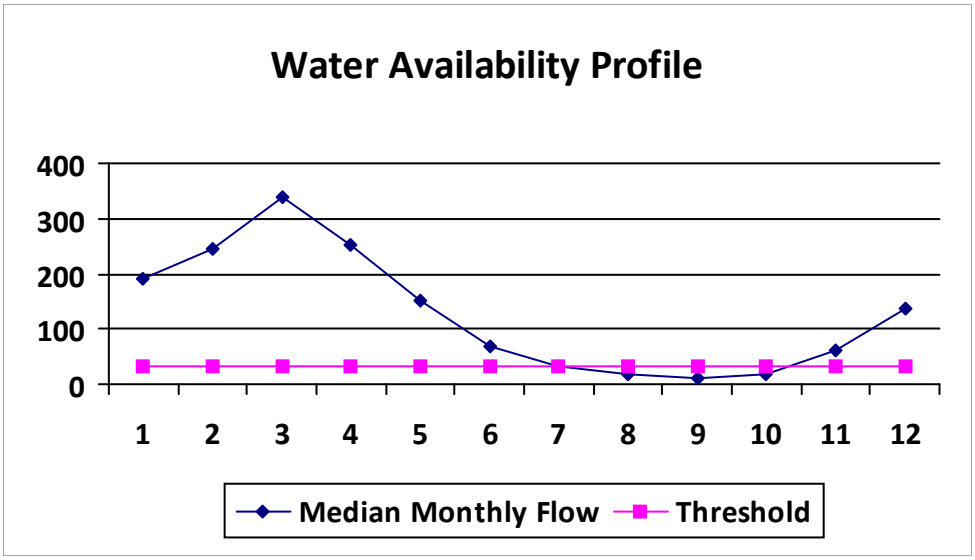
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	191.17		
2	243.94		
3	338.32		
4	251.15		
5	153.09		
6	69.68		
7	30.79		
8	18.01		
9	11.44		
10	18.96		
11	59.65		
12	135.26		



Water Availability Assessment of Location

Base Threshold (cfs)	26.09
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	6.52
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81592 Source Name: Covestro, LLC
Covestro, LLC

Source Latitude: 39.7218
Source Longitude: -80.830231

HUC-8 Code: 5030201

Drainage Area (sq. mi.) 25000 County: Marshall

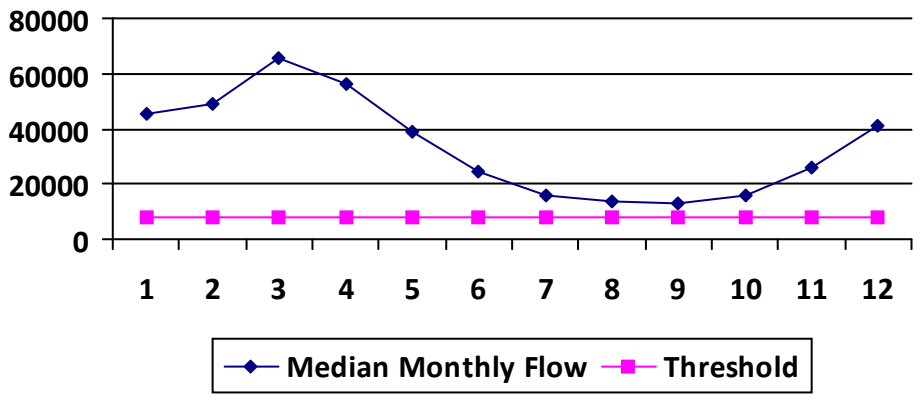
☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC
☐ Trout Stream? ☐ Tier 3? ☐ WH
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

Max. Pump rate (gpm):
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81594 | Source Name: Elite Gasfield Services / Elite Gasfield Services

Source Latitude: 40.32667

Source Longitude: -80.59861

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 25000 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

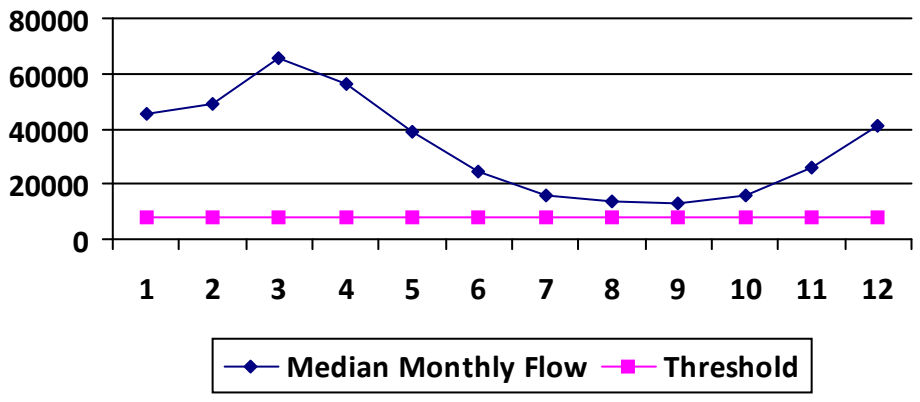
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81596 | Source Name: Grandview-Doolin PSD / Grandview-Doolin Public Service District

Source Latitude: 39.71361

Source Longitude: -80.82583

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 | County: Marshall

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

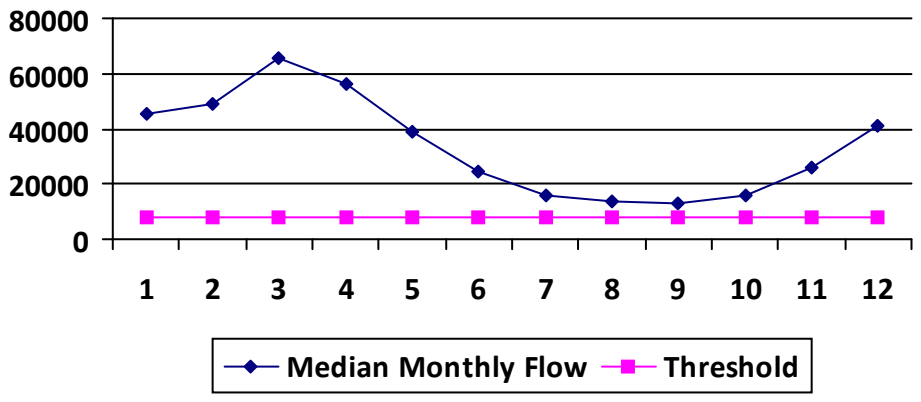
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81599 | Source Name: Marshall County Public Service District 3 / Marshall County Public Service District #4

Source Latitude: 39.93556

Source Longitude: -80.75833

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

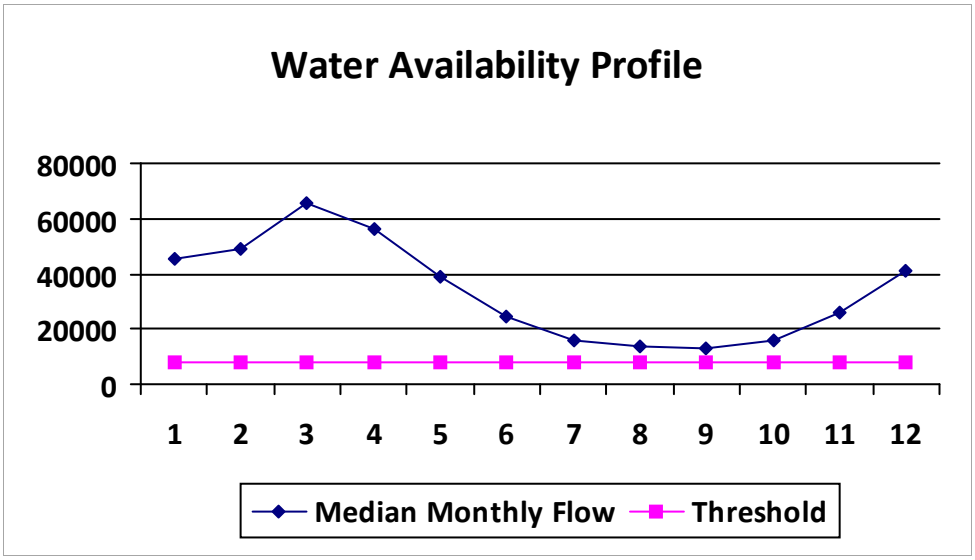
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81600 | Source Name: Marshall County Public Service District 4 / Marshall County Public Service District #4

Source Latitude: 39.93556

Source Longitude: -80.75833

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
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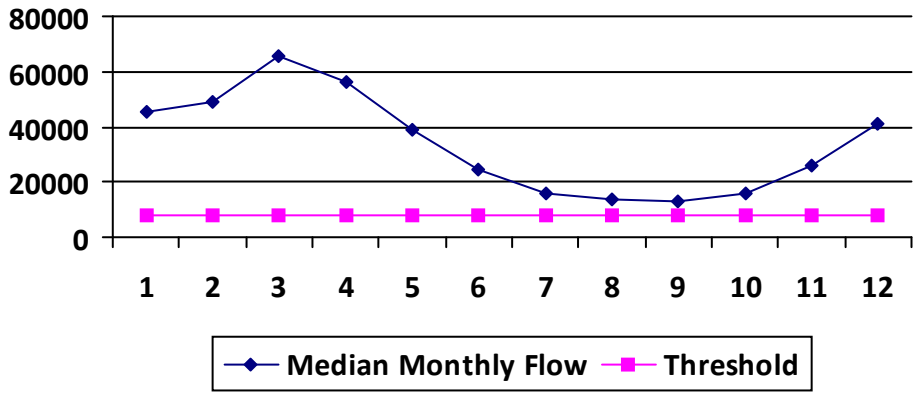
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81601 | Source Name: Ohio County PSD / Ohio county PSD

Source Latitude: 40.14972

Source Longitude: -80.70167

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

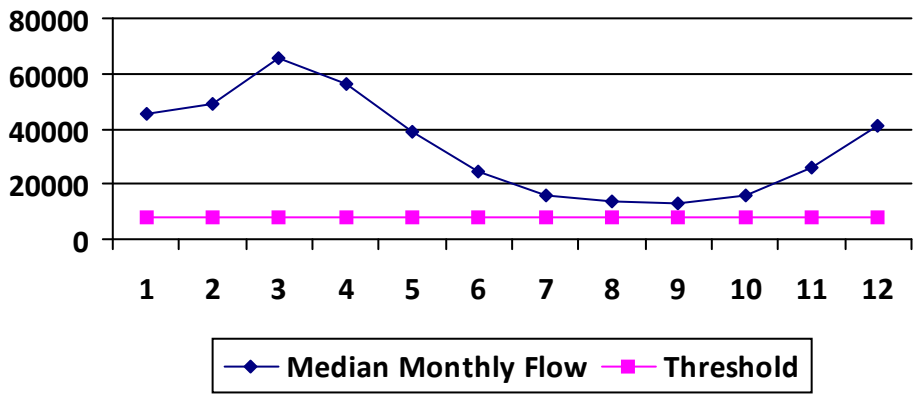
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81602 | Source Name: Ohio River @ 4K Industrial Park / 4K Industrial Park, LLC

Source Latitude: 40.098805

Source Longitude: -80.711328

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Belmont, OH

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

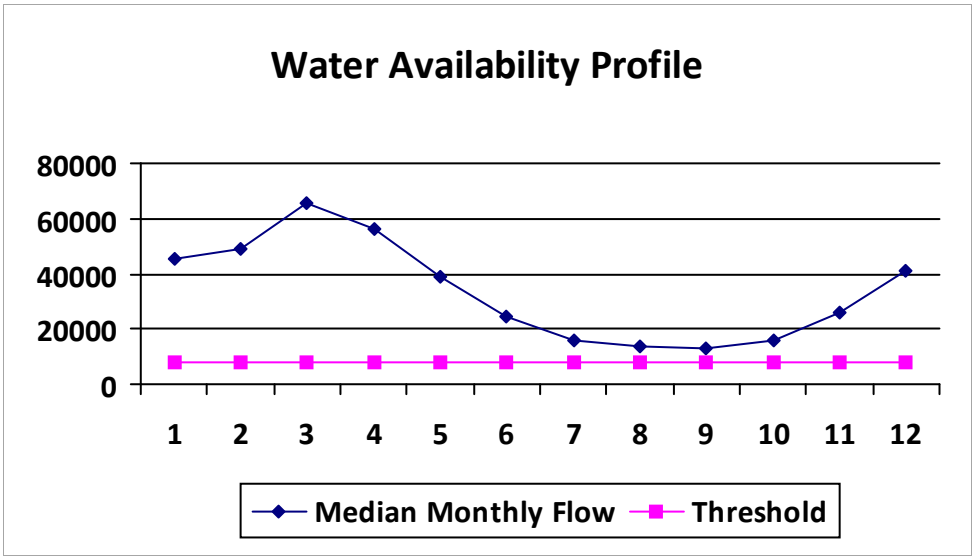
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81603 | Source Name: Ohio River @ J&R Excavating / J&R Excavating

Source Latitude: 39.998509

Source Longitude: -80.737336

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
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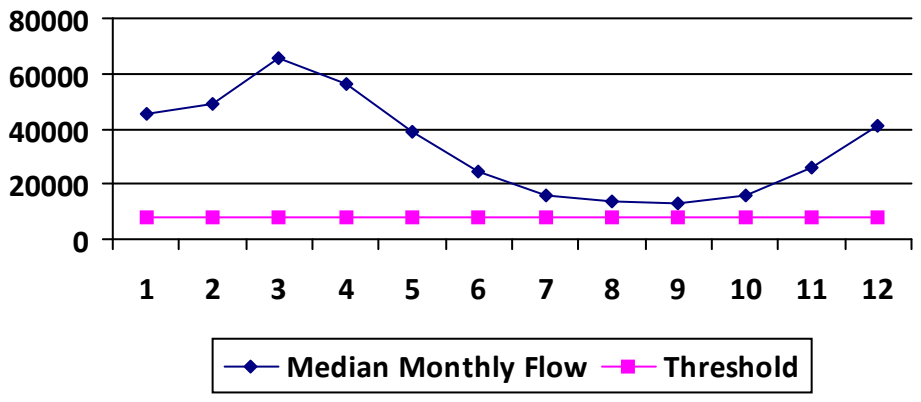
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81604 | Source Name: Ohio River @ Oasis Transport Withdrawal Site

Oasis Transport, LLC

Source Latitude: 40.331551

Source Longitude: -80.601034

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

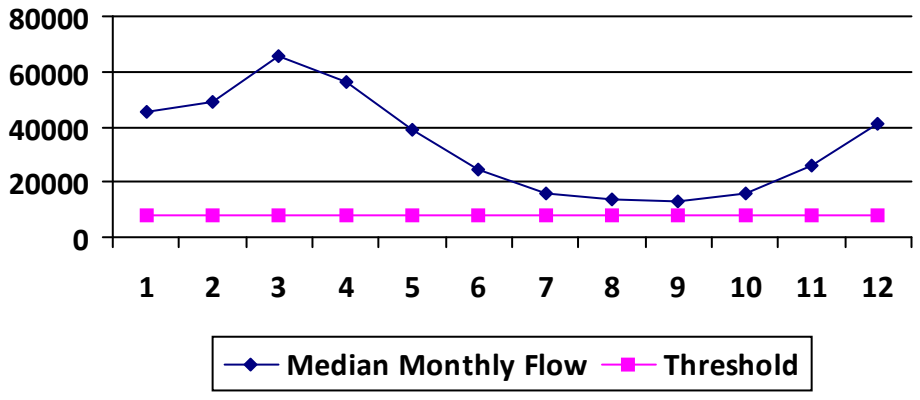
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81606 | Source Name: Range Tap @ Corbin Withdrawal Site

Range Resources Corp.

Source Latitude: 40.229983

Source Longitude: -80.521067

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

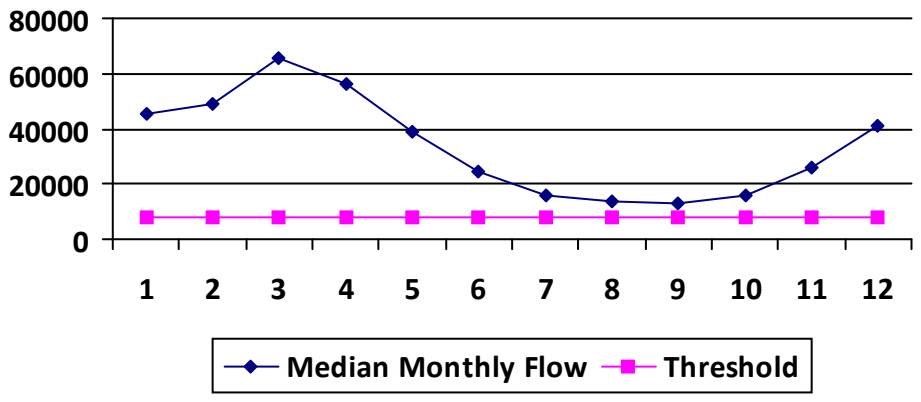
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81610 | Source Name: The Village of Valley Grove / The Village of Valley Grove

Source Latitude: 40.14972

Source Longitude: -80.70167

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

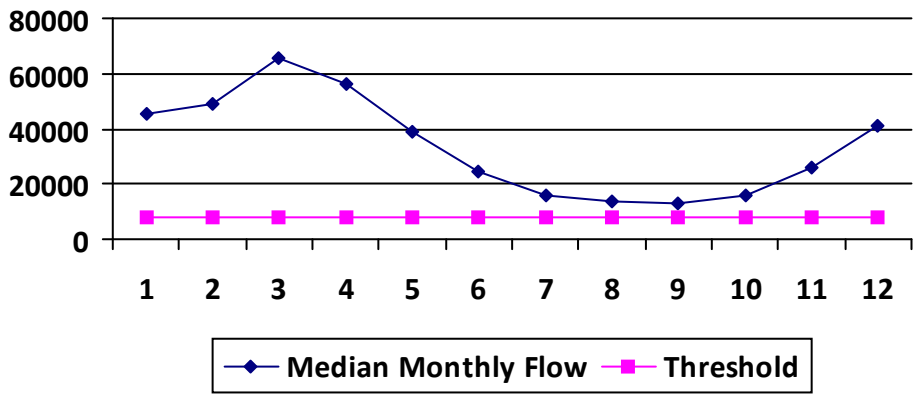
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81611 | Source Name: Valley Falls PSD / Valley Falls PSD

Source Latitude: 39.45889

Source Longitude: -80.15583

HUC-8 Code: 5020001

Drainage Area (sq. mi.): 1367.05 | County: Marion

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

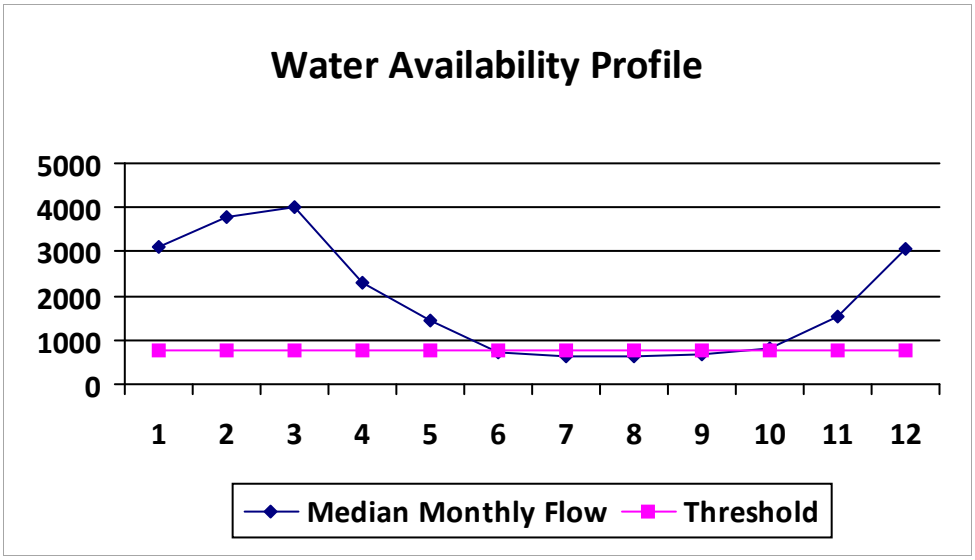
Max. Truck pump rate (gpm)

Reference Gauge: 3057000 TYGART VALLEY RIVER AT COLFAX, WV

Drainage Area (sq. mi.): 1,363.00

Gauge Threshold (cfs): 624

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	3,116.33	-	-
2	3,762.53	-	-
3	4,020.62	-	-
4	2,297.81	-	-
5	1,441.95	-	-
6	729.86	-	-
7	613.75	-	-
8	623.01	-	-
9	694.86	-	-
10	793.38	-	-
11	1,551.03	-	-
12	3,049.68	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	156.46
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81615 | Source Name: Wheeling Creek #1 @ HG Energy / HG Energy, LLC

Source Latitude: 39.95205

Source Longitude: -80.56189

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 156.06 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

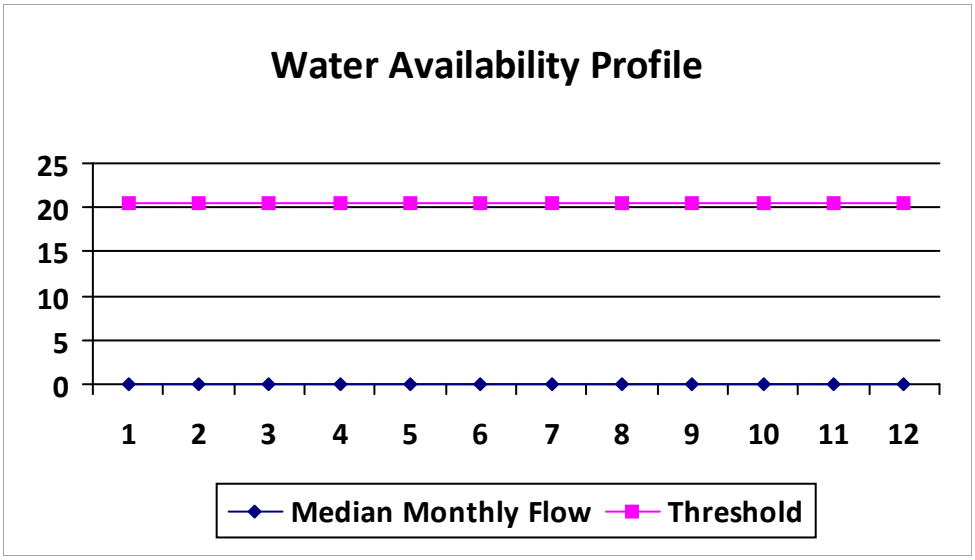
Max. Truck pump rate (gpm)

Reference Gauge: 3111955 | Wheeling Creek near Majorsville, WV

Drainage Area (sq. mi.): 152.00

Gauge Threshold (cfs): 16

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	0.00		-
2	0.00		-
3	0.00		-
4	0.00		-
5	0.00		-
6	0.00		-
7	0.00		-
8	0.00		-
9	0.00		-
10	0.00		-
11	0.00		-
12	0.00		-



Water Availability Assessment of Location

Base Threshold (cfs)	16.43
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.11
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81616 | Source Name: Wheeling Creek # 2 @ HG Energy

HG Energy, LLC

Source Latitude: 39.949577

Source Longitude: -80.531255

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 152.4 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

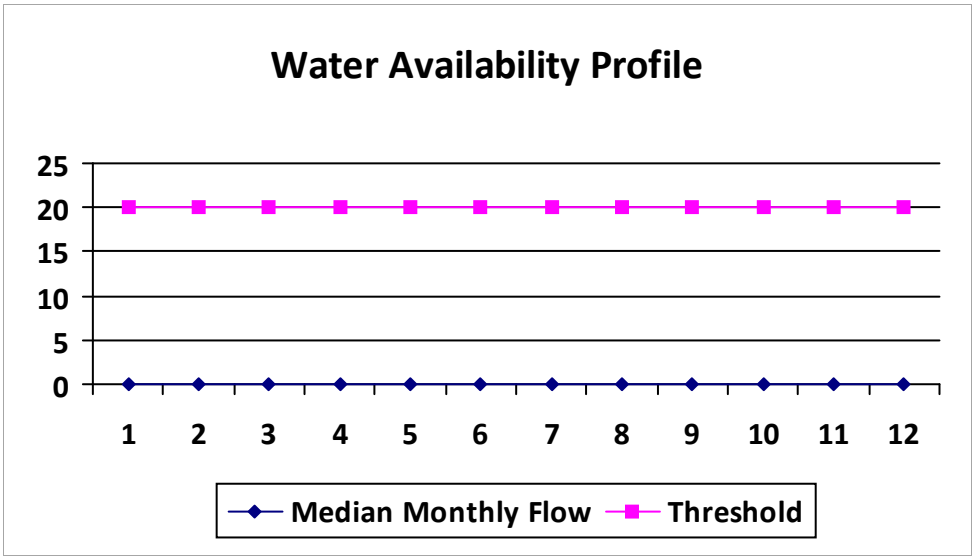
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3111955 | Wheeling Creek near Majorsville, WV

Drainage Area (sq. mi.): 152.00 | Gauge Threshold (cfs): 16

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	0.00		-
2	0.00		-
3	0.00		-
4	0.00		-
5	0.00		-
6	0.00		-
7	0.00		-
8	0.00		-
9	0.00		-
10	0.00		-
11	0.00		-
12	0.00		-



Water Availability Assessment of Location

Base Threshold (cfs)	16.04
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.01
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81617 | Source Name: Wheeling Water Department

Wheeling Water Department

Source Latitude: 40.14972

Source Longitude: -80.70167

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Ohio

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm):

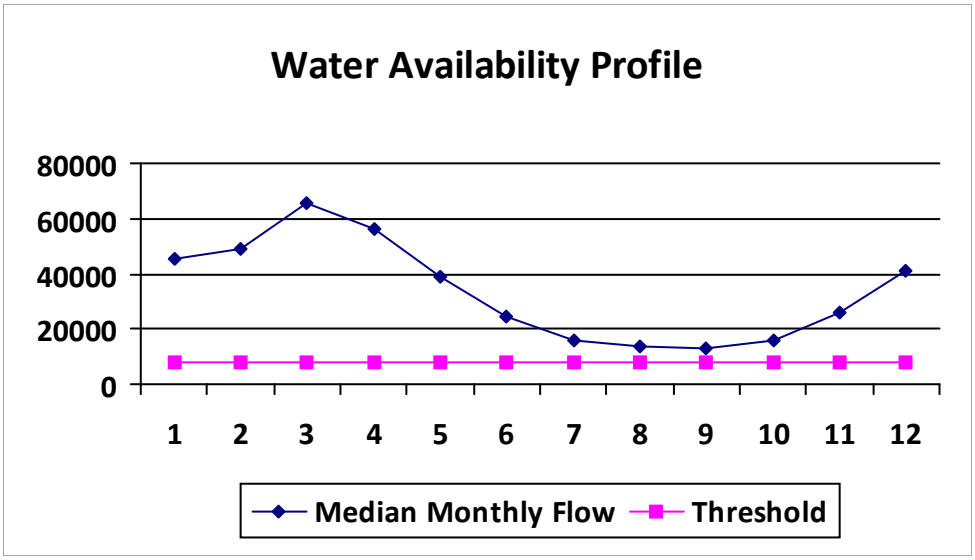
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81547 | Source Name: Big Wheeling Creek @ Wheeling Staging Area
Fulton Storage, LLC

Source Latitude: 40.077019
Source Longitude: -80.713866

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 296.04 | County: Ohio

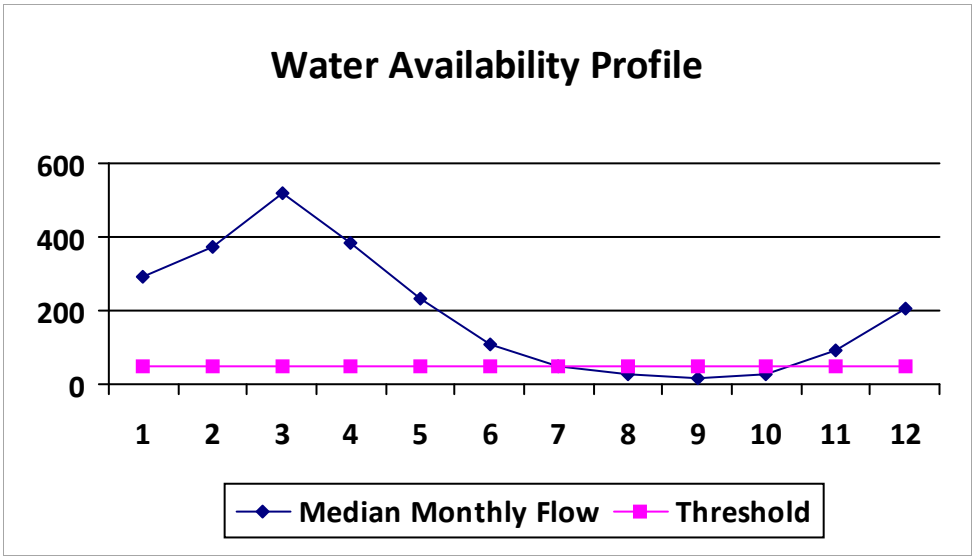
☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC
☐ Trout Stream? ☐ Tier 3? ☐ WH
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

Max. Pump rate (gpm): 2,500
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	293.29		
2	374.26		
3	519.05		
4	385.31		
5	234.87		
6	106.90		
7	47.24		
8	27.63		
9	17.56		
10	29.09		
11	91.52		
12	207.51		



Water Availability Assessment of Location

Base Threshold (cfs)	40.03
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	10.01
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81548 | Source Name: Booths Creek @ Reliance Minerals / Reliance Minerals, Inc.

Source Latitude: 39.530405

Source Longitude: -79.978079

HUC-8 Code: 5020003

Drainage Area (sq. mi.): 1.79 | County: Monongalia

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

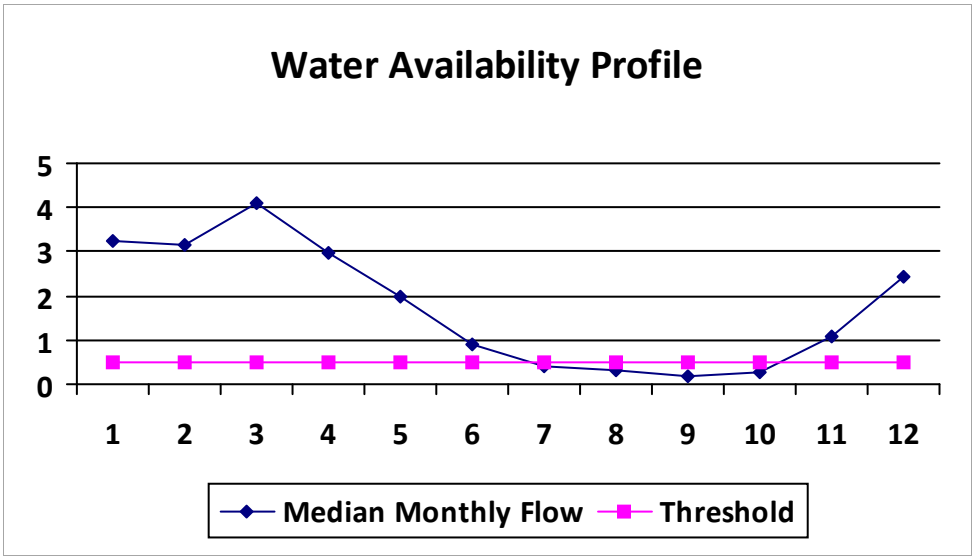
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3062500 DECKERS CREEK AT MORGANTOWN, WV

Drainage Area (sq. mi.): 63.20 | Gauge Threshold (cfs): 14

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	3.25		
2	3.16		
3	4.12		
4	2.98		
5	1.97		
6	0.89		
7	0.41		
8	0.30		
9	0.17		
10	0.29		
11	1.08		
12	2.43		



Water Availability Assessment of Location

Base Threshold (cfs)	0.40
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.10
Ungauged Stream Safety (cfs):	0.10
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81549 | Source Name: Buffalo Creek @ Bethany VFD Withdrawal Site
Bethany Pike Volunteer Fire Department

Source Latitude: 40.253422
Source Longitude: -80.600319

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 158.69 | County: Brooke

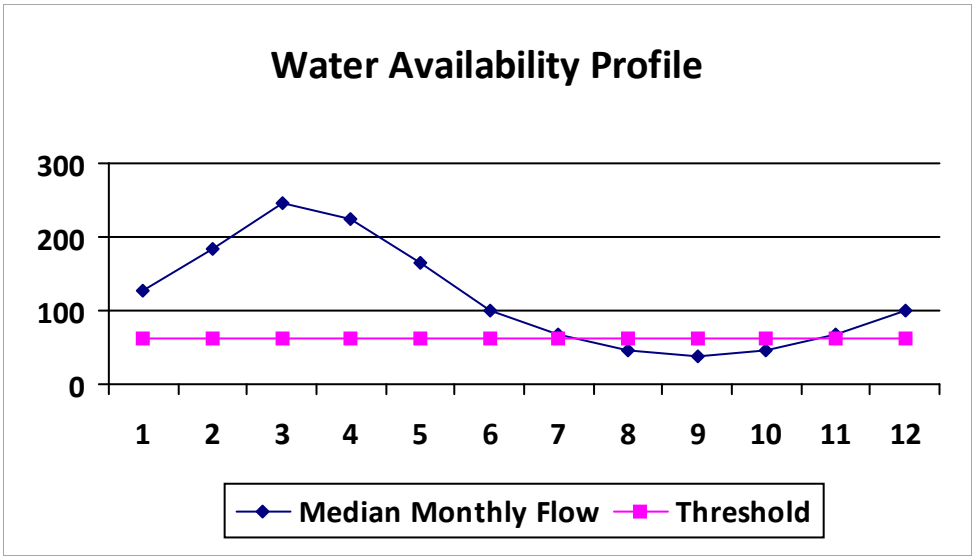
- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 3,100
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	128.18		
2	183.60		
3	245.67		
4	224.32		
5	165.56		
6	101.06		
7	66.76		
8	46.57		
9	38.15		
10	45.11		
11	66.70		
12	101.01		



Water Availability Assessment of Location

Base Threshold (cfs)	49.03
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	6.91
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	12.26
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81550 | Source Name: Buffalo Creek @ DNR WVDNR

Source Latitude: 40.19386

Source Longitude: -80.525796

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 98.28 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 3,200

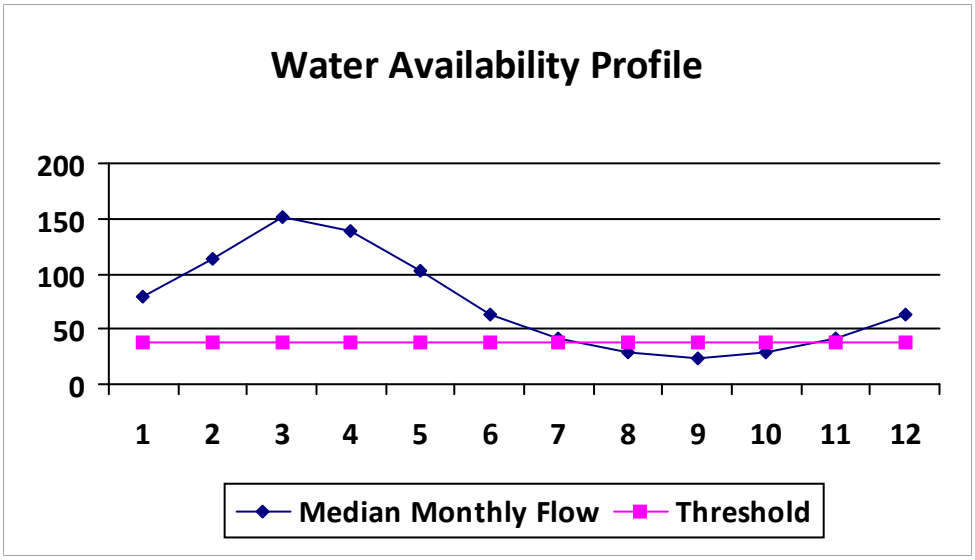
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	79.39		
2	113.71		
3	152.15		
4	138.92		
5	102.53		
6	62.59		
7	41.34		
8	28.84		
9	23.62		
10	27.94		
11	41.31		
12	62.56		



Water Availability Assessment of Location

Base Threshold (cfs)	30.36
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	7.13
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	7.59
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81551 | Source Name: Buffalo Creek @ Forney

Forney & Sons Holding Company, LLC

Source Latitude: 40.193453

Source Longitude: -80.52175

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 98.28 | County: Brooke

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,500

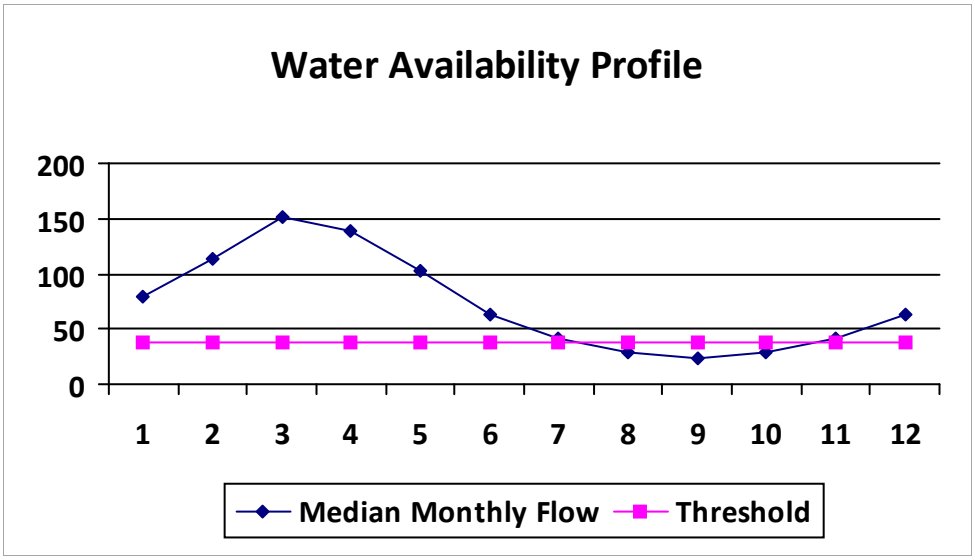
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	79.39		
2	113.71		
3	152.15		
4	138.92		
5	102.53		
6	62.59		
7	41.34		
8	28.84		
9	23.62		
10	27.94		
11	41.31		
12	62.56		



Water Availability Assessment of Location

Base Threshold (cfs)	30.36
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	7.59
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81552 | Source Name: Buffalo Creek @ Fuchs / Beverly Fuchs

Source Latitude: 40.258863

Source Longitude: -80.60337

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 163.22 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 5,250

Max. Simultaneous Trucks:

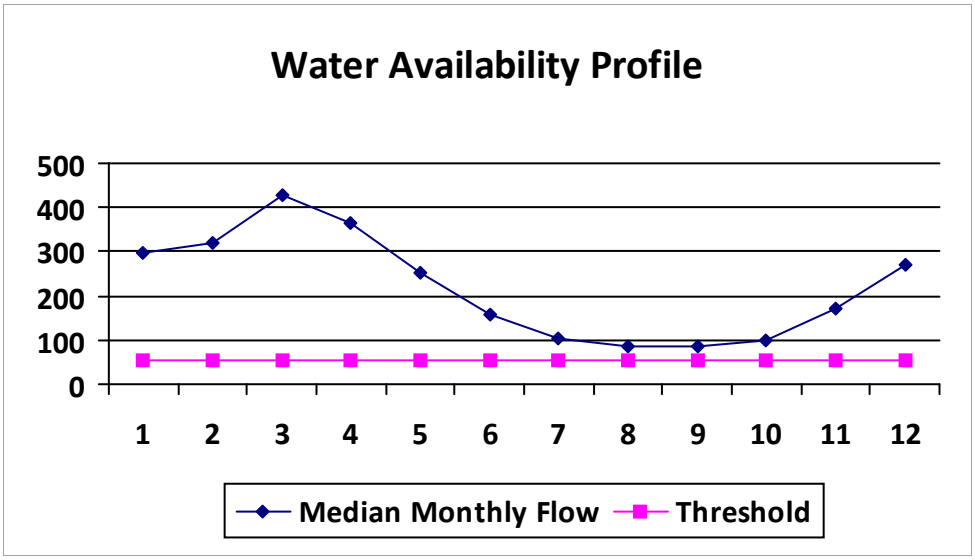
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	298.37	-	-
2	321.22	-	-
3	428.94	-	-
4	366.27	-	-
5	252.66	-	-
6	158.65	-	-
7	104.46	-	-
8	87.49	-	-
9	83.57	-	-
10	101.20	-	-
11	171.71	-	-
12	269.64	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	11.70
Headwater Safety (cfs):	10.56
Ungauged Stream Safety (cfs):	10.56
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81553 | Source Name: Buffalo Creek @ Greathouse Withdrawal Site / Linda Greathouse

Source Latitude: 40.20895

Source Longitude: -80.60105

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 138.56 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 3,300

Max. Simultaneous Trucks:

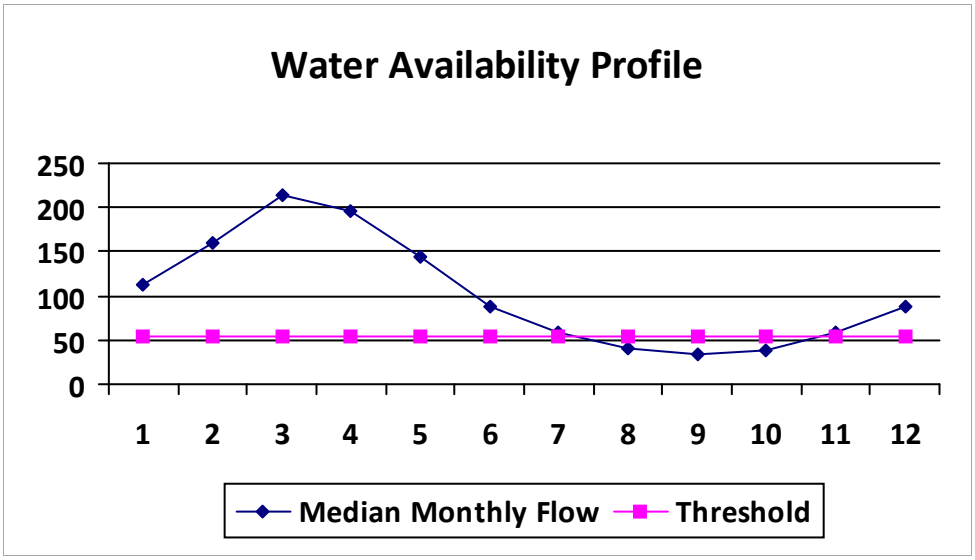
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	111.92		
2	160.31		
3	214.51		
4	195.86		
5	144.56		
6	88.24		
7	58.29		
8	40.66		
9	33.31		
10	39.39		
11	58.24		
12	88.19		



Water Availability Assessment of Location

Base Threshold (cfs)	42.81
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	7.35
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	10.70
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81554 | Source Name: Buffalo Creek @ Labelle Farms

Steve Paul

Source Latitude: 40.204444

Source Longitude: -80.598645

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 136.79 | County: Brooke

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 5,250

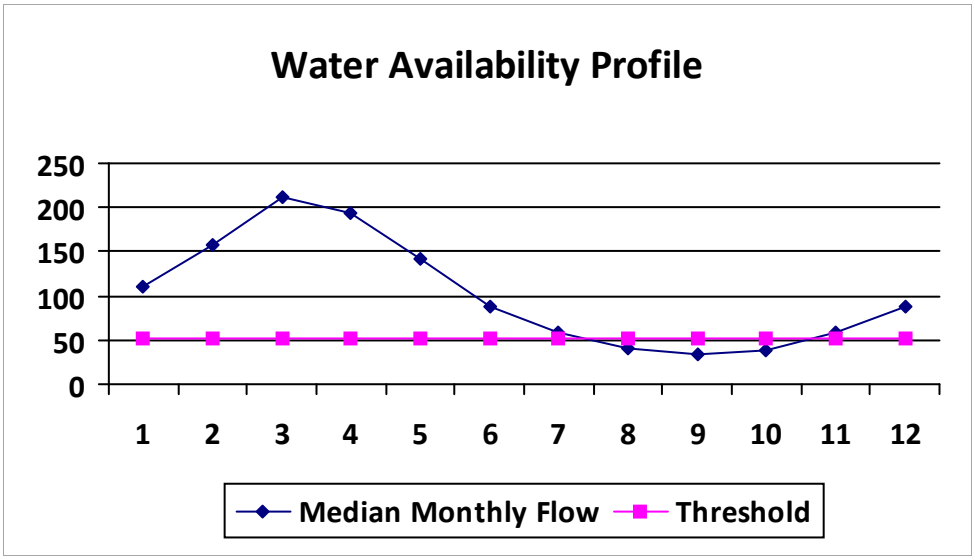
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	110.49		
2	158.27		
3	211.77		
4	193.36		
5	142.71		
6	87.12		
7	57.54		
8	40.14		
9	32.88		
10	38.89		
11	57.50		
12	87.07		



Water Availability Assessment of Location

Base Threshold (cfs)	42.26
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	11.70
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	10.57
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81555 | Source Name: Buffalo Creek @ Worthley Withdrawal Site
Kimberly C. Worthley

Source Latitude: 40.210978
Source Longitude: -80.548779

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 113.49 | County: Brooke

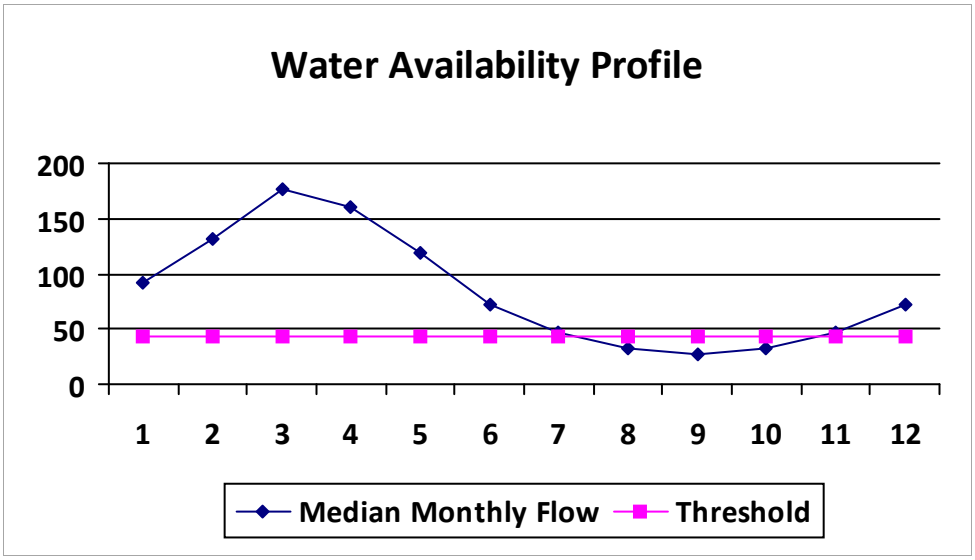
- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,500
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	91.67		
2	131.31		
3	175.70		
4	160.42		
5	118.40		
6	72.28		
7	47.74		
8	33.31		
9	27.28		
10	32.26		
11	47.70		
12	72.24		



Water Availability Assessment of Location

Base Threshold (cfs)	35.06
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	8.77
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81556 | Source Name: Buffalo Creek @ WVDOH
West Virginia Division of Highways

Source Latitude: 40.258863
Source Longitude: -80.60337

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 163.22 | County: Brooke

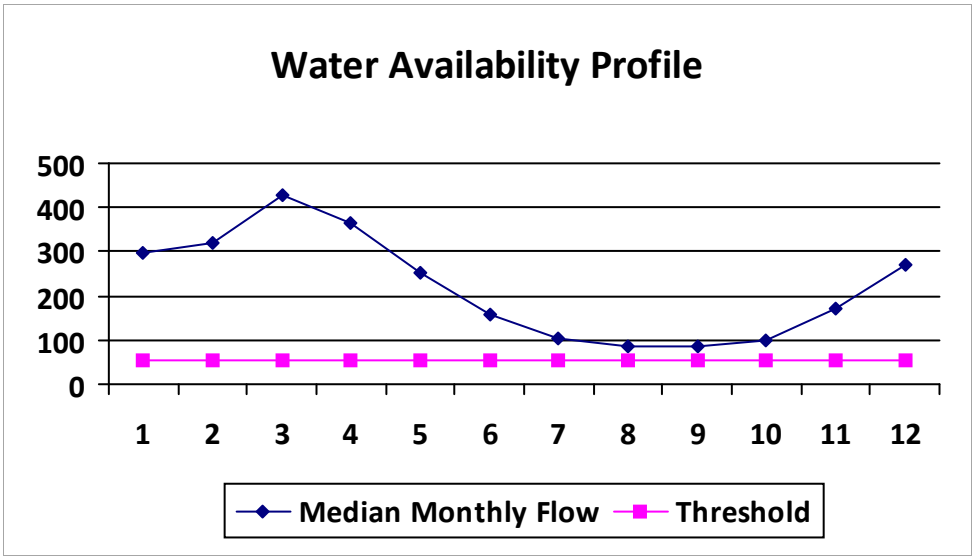
☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC
☐ Trout Stream? ☐ Tier 3? ☐ WH
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

Max. Pump rate (gpm): 3,360
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	298.37	-	-
2	321.22	-	-
3	428.94	-	-
4	366.27	-	-
5	252.66	-	-
6	158.65	-	-
7	104.46	-	-
8	87.49	-	-
9	83.57	-	-
10	101.20	-	-
11	171.71	-	-
12	269.64	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	7.49
Headwater Safety (cfs):	10.56
Ungauged Stream Safety (cfs):	10.56
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81557 | Source Name: Buffalo Creek @ Zatta / Edward Zatta

Source Latitude: 40.253588

Source Longitude: -80.600254

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 158.69 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,520

Max. Simultaneous Trucks:

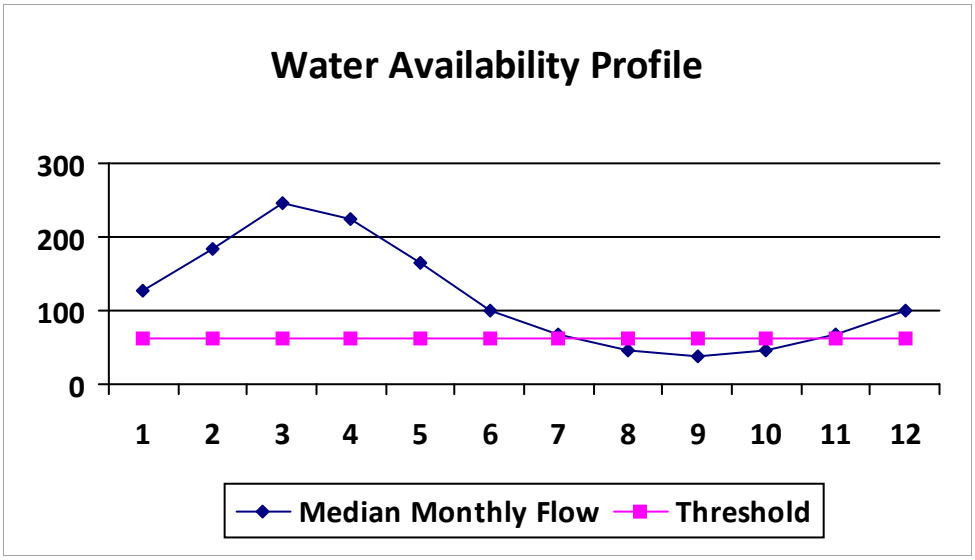
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	128.18		
2	183.60		
3	245.67		
4	224.32		
5	165.56		
6	101.06		
7	66.76		
8	46.57		
9	38.15		
10	45.11		
11	66.70		
12	101.01		



Water Availability Assessment of Location

Base Threshold (cfs)	49.03
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.61
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	12.26
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81558 | Source Name: Cross Creek @ Bullock Withdrawal Site / Isabelle Bullock

Source Latitude: 40.30735

Source Longitude: -80.569317

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 74.66 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,500

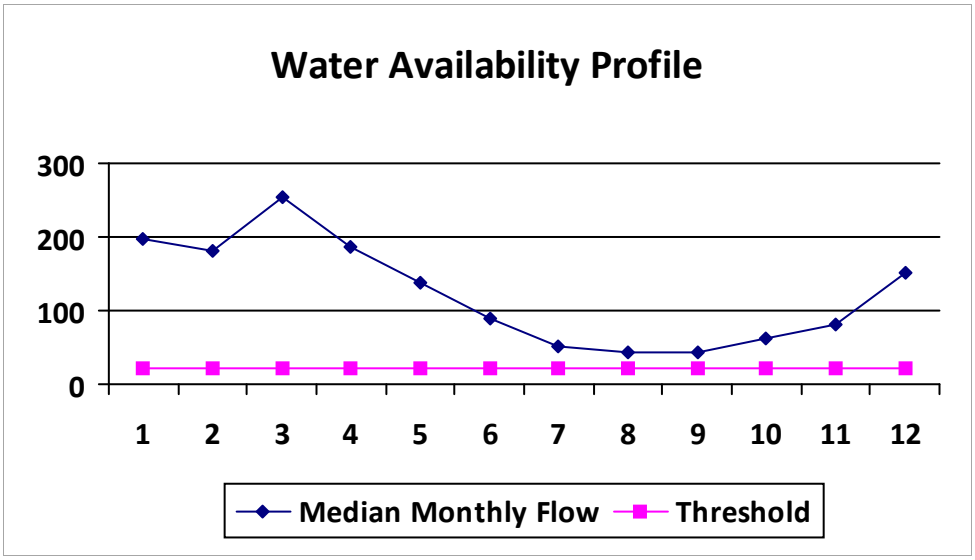
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3110830 KINGS CREEK AT WEIRTON, WV

Drainage Area (sq. mi.): 48.90 | Gauge Threshold (cfs): 11

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	195.97		
2	180.05		
3	253.89		
4	186.52		
5	138.84		
6	89.57		
7	50.78		
8	42.06		
9	43.77		
10	61.47		
11	81.23		
12	151.05		



Water Availability Assessment of Location

Base Threshold (cfs)	16.79
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.20
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81559 | Source Name: Cross Creek @ DNR / WVDNR

Source Latitude: 40.300536

Source Longitude: -80.542229

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 68.58 | County: Brooke

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 3,000

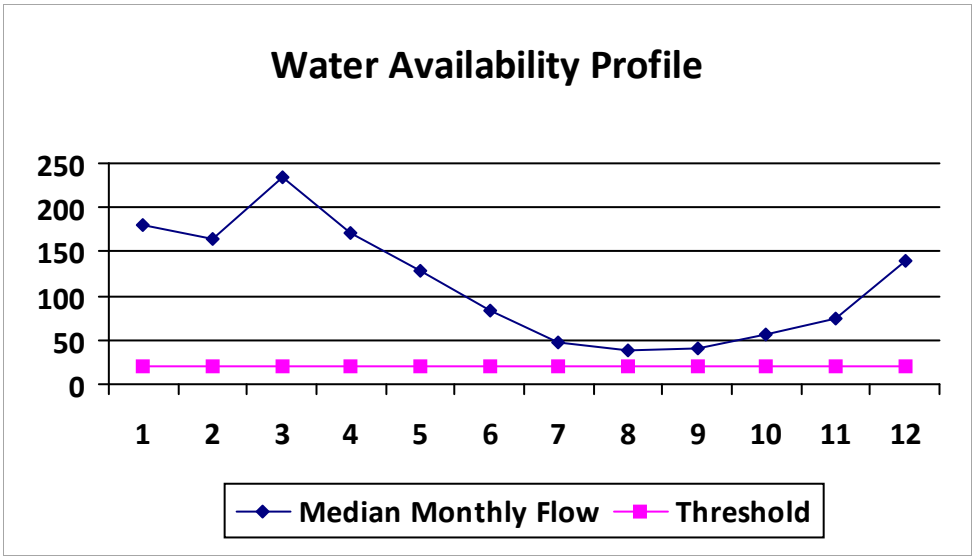
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3110830 KINGS CREEK AT WEIRTON, WV

Drainage Area (sq. mi.): 48.90 | Gauge Threshold (cfs): 11

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	180.01		
2	165.39		
3	233.21		
4	171.33		
5	127.53		
6	82.28		
7	46.64		
8	38.64		
9	40.20		
10	56.46		
11	74.61		
12	138.75		



Water Availability Assessment of Location

Base Threshold (cfs)	15.43
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	6.68
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	3.86
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81560 | Source Name: Cross Creek @ Norfolk and Western Railway / Wheeling & Lake Erie Railway Company

Source Latitude: 40.30802

Source Longitude: -80.599193

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 79.78 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 5,250

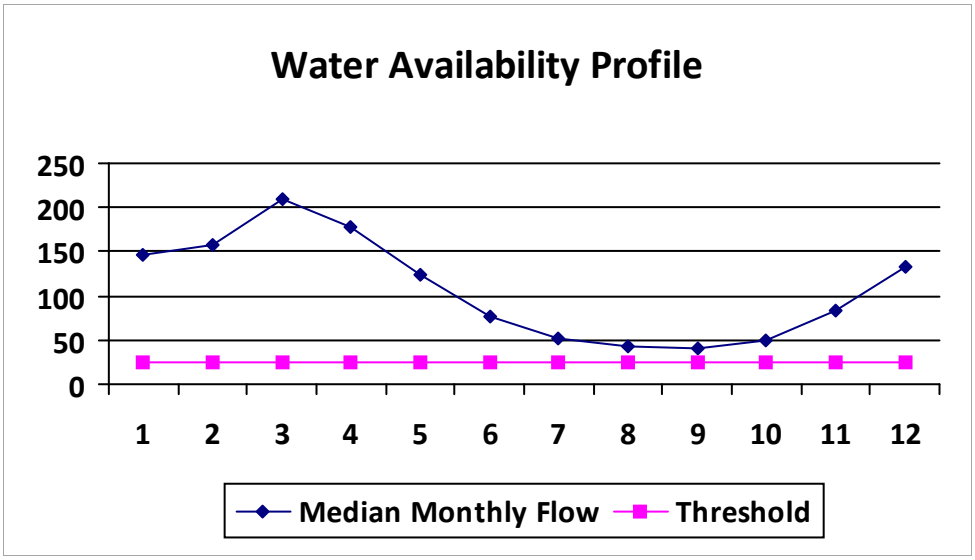
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	145.84	-	-
2	157.01	-	-
3	209.66	-	-
4	179.03	-	-
5	123.50	-	-
6	77.55	-	-
7	51.06	-	-
8	42.76	-	-
9	40.85	-	-
10	49.46	-	-
11	83.93	-	-
12	131.80	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	11.70
Headwater Safety (cfs):	5.16
Ungauged Stream Safety (cfs):	5.16
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81561 Source Name: Cross Creek @ Palizzi / Campbell Palizzi

Source Latitude: 40.302427

Source Longitude: -80.582753

HUC-8 Code: 5030101

Drainage Area (sq. mi.) 79.78 County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

Max. Simultaneous Trucks:

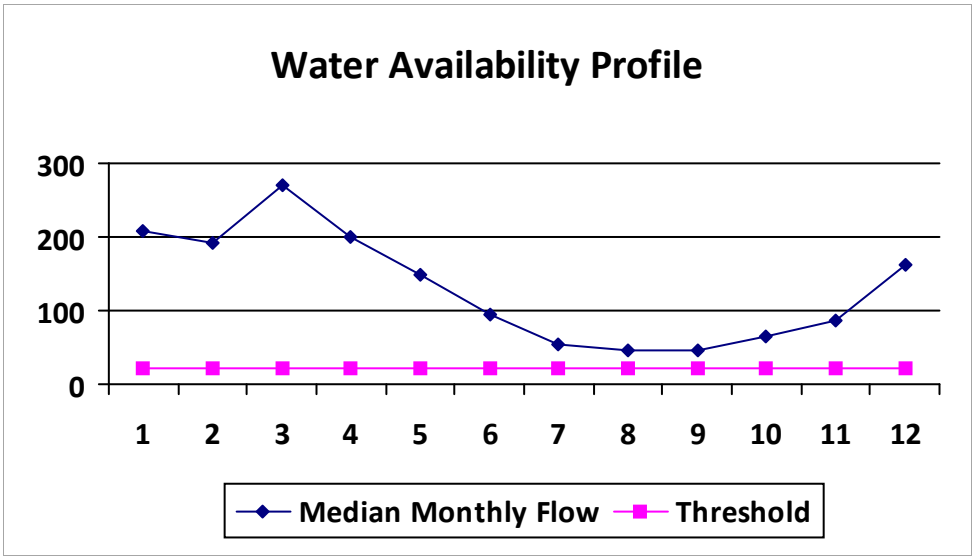
Max. Truck pump rate (gpm)

Reference Gauge: 3110830 KINGS CREEK AT WEIRTON, WV

Drainage Area (sq. mi.): 48.90

Gauge Threshold (cfs): 11

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	209.41		
2	192.40		
3	271.30		
4	199.31		
5	148.36		
6	95.71		
7	54.26		
8	44.94		
9	46.77		
10	65.68		
11	86.80		
12	161.41		



Water Availability Assessment of Location

Base Threshold (cfs)	17.95
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.49
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81562 | Source Name: Fish Creek @ Gribben

Revocable Living Trust of M. Peggy Gribben

Source Latitude: 39.753271

Source Longitude: -80.597913

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 141.61 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

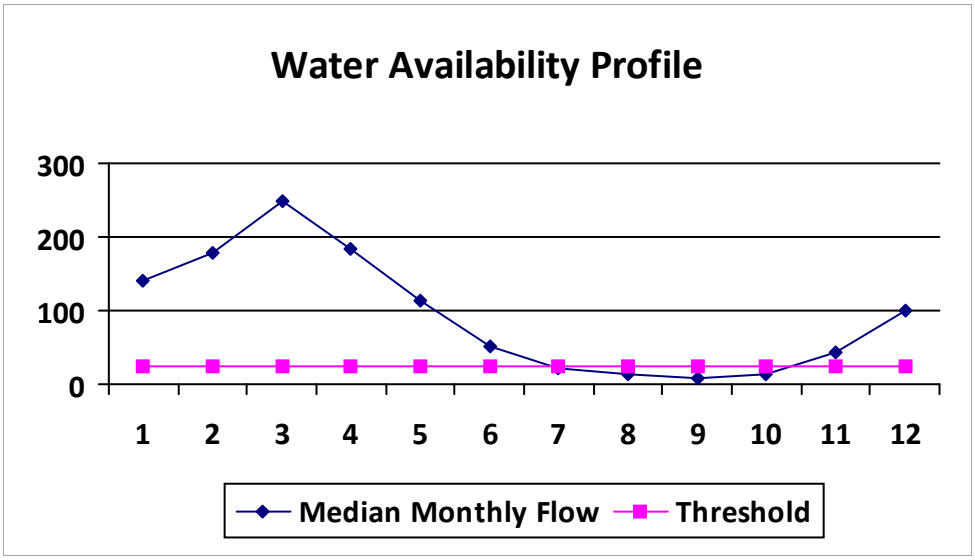
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	140.29		
2	179.02		
3	248.28		
4	184.31		
5	112.35		
6	51.13		
7	22.60		
8	13.22		
9	8.40		
10	13.92		
11	43.78		
12	99.26		



Water Availability Assessment of Location

Base Threshold (cfs)	19.15
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.79
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81563 | Source Name: Fish Creek @ Guzek / Walter A. Guzek

Source Latitude: 39.753021

Source Longitude: -80.613941

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 144.57 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

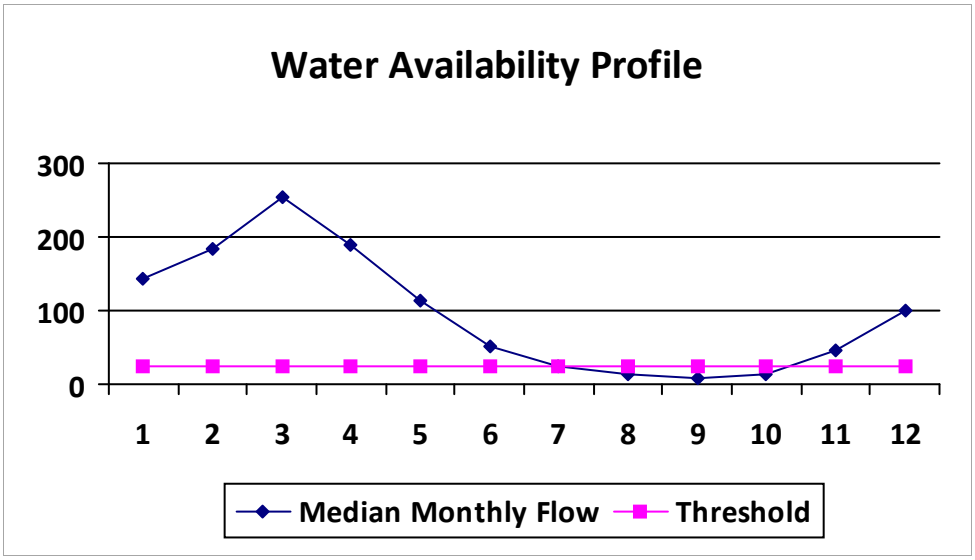
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	143.23		
2	182.77		
3	253.47		
4	188.16		
5	114.70		
6	52.20		
7	23.07		
8	13.49		
9	8.57		
10	14.21		
11	44.69		
12	101.34		



Water Availability Assessment of Location

Base Threshold (cfs)	19.55
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.89
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81564 | Source Name: Little Wheeling Creek @ Edge Withdrawal Site / Alice Mae Edge

Source Latitude: 40.098

Source Longitude: -80.5558

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 4.26 | County: Ohio

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

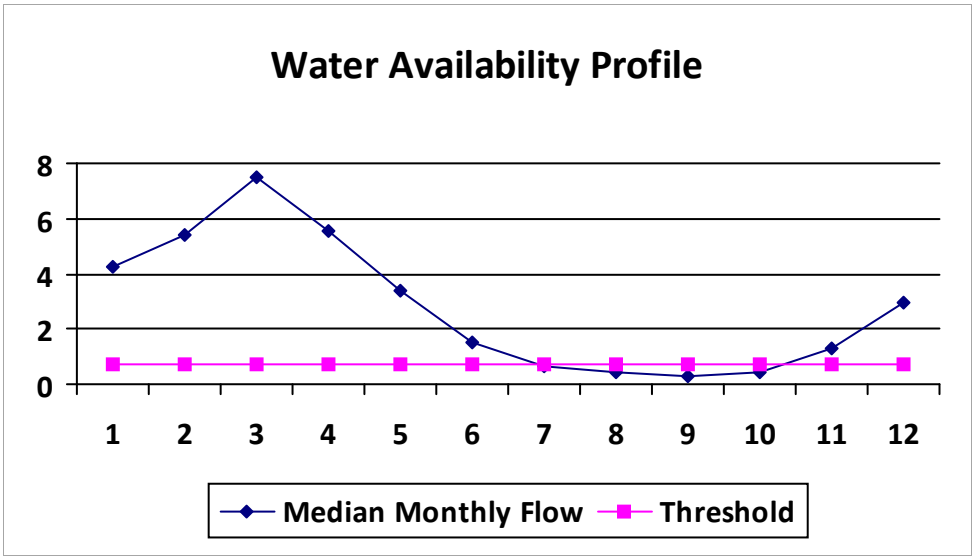
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	4.22		
2	5.39		
3	7.47		
4	5.54		
5	3.38		
6	1.54		
7	0.68		
8	0.40		
9	0.25		
10	0.42		
11	1.32		
12	2.99		



Water Availability Assessment of Location

Base Threshold (cfs)	0.58
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.14
Ungauged Stream Safety (cfs):	0.14
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81565 | Source Name: Little Wheeling Creek @ Main Street Bank / Main Street Bank

Source Latitude: 40.064076

Source Longitude: -80.614406

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 13.94 | County: Ohio

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

Max. Simultaneous Trucks:

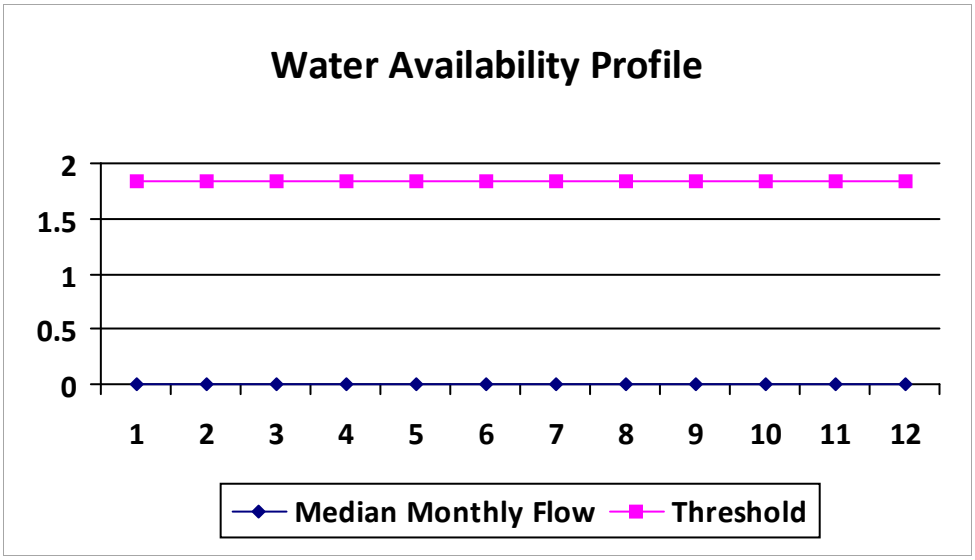
Max. Truck pump rate (gpm)

Reference Gauge: 3111955 | Wheeling Creek near Majorsville, WV

Drainage Area (sq. mi.): 152.00

Gauge Threshold (cfs): 16

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	0.00		-
2	0.00		-
3	0.00		-
4	0.00		-
5	0.00		-
6	0.00		-
7	0.00		-
8	0.00		-
9	0.00		-
10	0.00		-
11	0.00		-
12	0.00		-



Water Availability Assessment of Location

Base Threshold (cfs)	1.47
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.37
Ungauged Stream Safety (cfs):	0.37
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81566 | Source Name: Little Wheeling Creek @ Rt. 40 Staging Area

JDS Investments, LLC

Source Latitude: 40.078324

Source Longitude: -80.591145

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 13.94 | County: Ohio

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

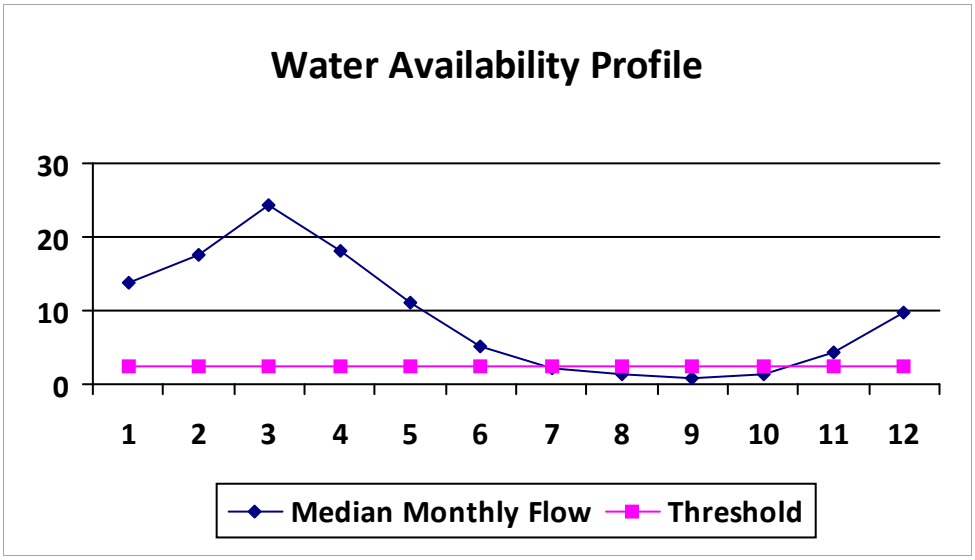
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	13.81		
2	17.62		
3	24.44		
4	18.14		
5	11.06		
6	5.03		
7	2.22		
8	1.30		
9	0.83		
10	1.37		
11	4.31		
12	9.77		



Water Availability Assessment of Location

Base Threshold (cfs)	1.89
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.47
Ungauged Stream Safety (cfs):	0.47
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81567 | Source Name: Middle Wheeling Creek @ Gribben / Lawrence Kevin Gribber

Source Latitude: 40.036777

Source Longitude: -80.598008

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 30.81 | County: Ohio

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

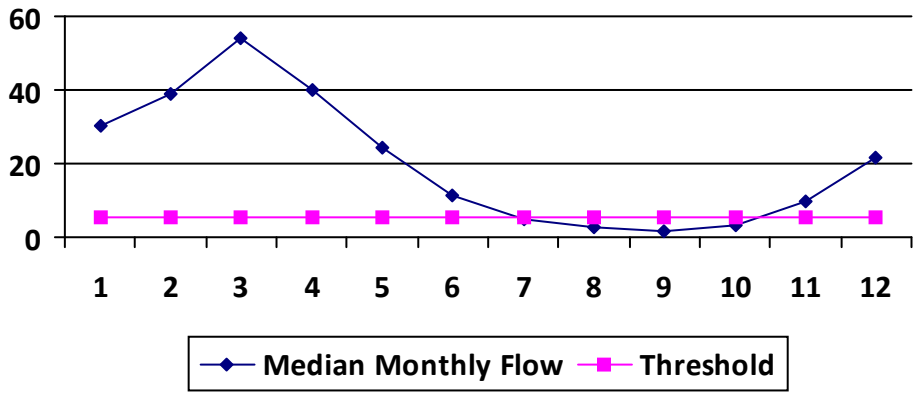
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	30.52		
2	38.95		
3	54.02		
4	40.10		
5	24.44		
6	11.13		
7	4.92		
8	2.88		
9	1.83		
10	3.03		
11	9.52		
12	21.60		



Water Availability Assessment of Location

Base Threshold (cfs)	4.17
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	1.04
Ungauged Stream Safety (cfs):	1.04
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81568 | Source Name: Middle Wheeling Creek @ Supler / Gregory and Peggy Supler

Source Latitude: 40.04409

Source Longitude: -80.55348

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 20.54 | County: Ohio

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,500

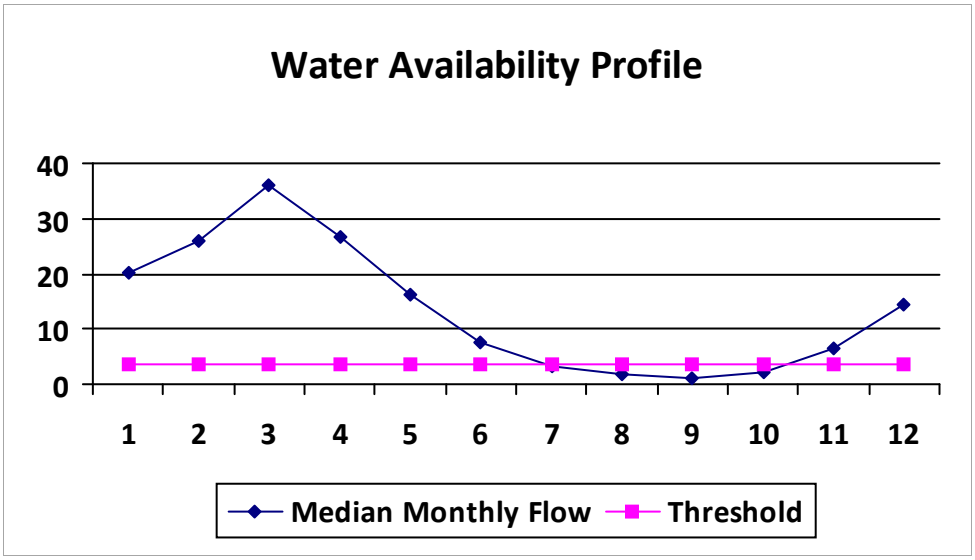
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	20.35		
2	25.97		
3	36.01		
4	26.73		
5	16.30		
6	7.42		
7	3.28		
8	1.92		
9	1.22		
10	2.02		
11	6.35		
12	14.40		



Water Availability Assessment of Location

Base Threshold (cfs)	2.78
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.69
Ungauged Stream Safety (cfs):	0.69
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81569 | Source Name: Ohio River @ Extraction B Panhandle

SWN Production Company, LLC

Source Latitude: 40.233469

Source Longitude: -80.654359

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Brooke

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 4,375

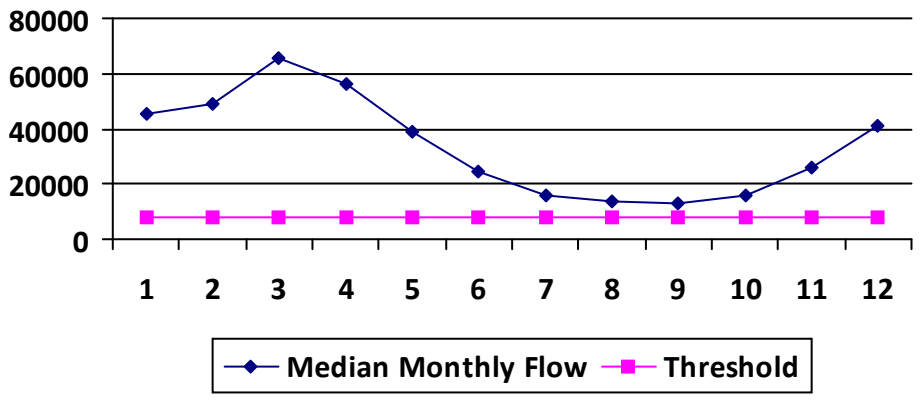
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	9.75
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81570 | Source Name: Ohio River @ Proctor Peacemaker

SWN Production Company, LLC

Source Latitude: 39.714299

Source Longitude: -80.825862

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 25000 | County: Wetzel

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 6,000

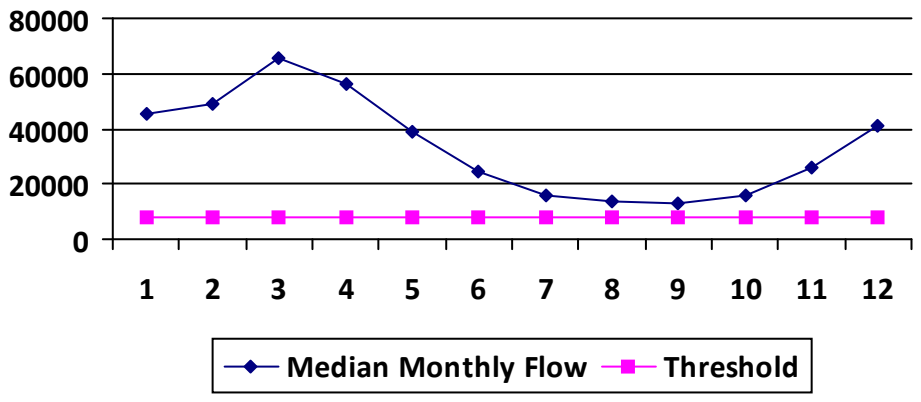
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	13.37
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81571 | Source Name: Paw Paw Creek @ Horizon Ventures

Horizon Ventures of WV, Inc

Source Latitude: 39.552426

Source Longitude: -80.166833

HUC-8 Code: 5020003

Drainage Area (sq. mi.) 28.34 | County: Marion

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

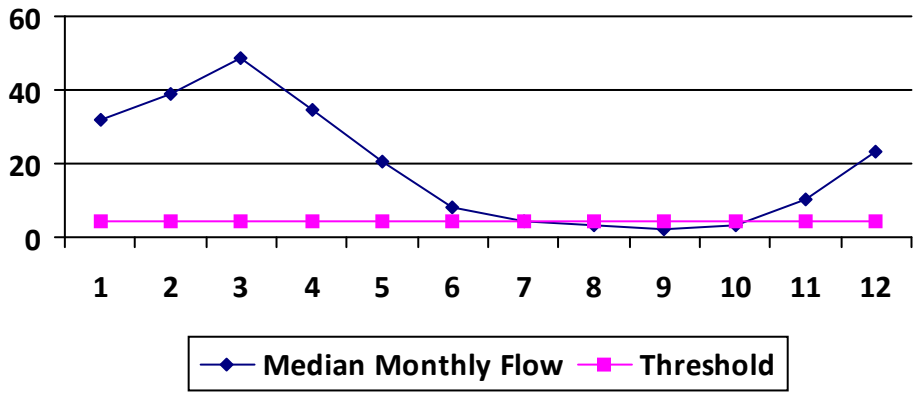
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3061500 BUFFALO CREEK AT BARRACKVILLE, WV

Drainage Area (sq. mi.): 116.00 | Gauge Threshold (cfs): 15

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	31.74		
2	39.11		
3	48.41		
4	34.37		
5	20.75		
6	8.19		
7	4.57		
8	3.18		
9	2.35		
10	3.03		
11	10.46		
12	23.48		



Water Availability Assessment of Location

Base Threshold (cfs)	3.66
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.92
Ungauged Stream Safety (cfs):	0.92
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81572 Source Name: Short Creek @ Cain

Susan L. Cain

Source Latitude: 40.155061

Source Longitude: -80.651431

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 16.58 County: Ohio

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 3,360

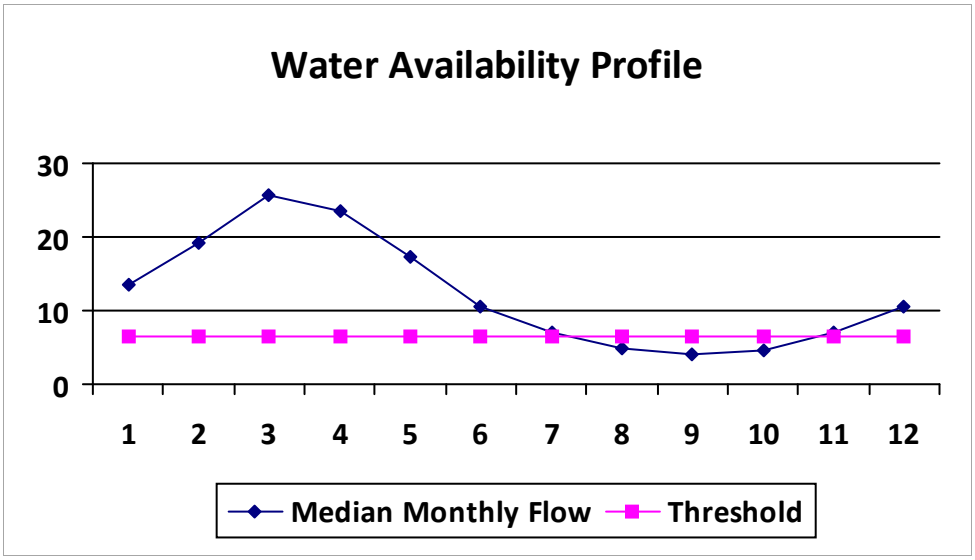
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	13.39		
2	19.18		
3	25.67		
4	23.44		
5	17.30		
6	10.56		
7	6.97		
8	4.87		
9	3.99		
10	4.71		
11	6.97		
12	10.55		



Water Availability Assessment of Location

Base Threshold (cfs)	5.12
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	7.49
Headwater Safety (cfs):	1.28
Ungauged Stream Safety (cfs):	1.28
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81573 | Source Name: West Virginia Fork of Fish Creek @ Van Scyoc With Israel D Van Scyoc

Source Latitude: 39.6908

Source Longitude: -80.4762

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 21.96 | County: Wetzel

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

Max. Simultaneous Trucks:

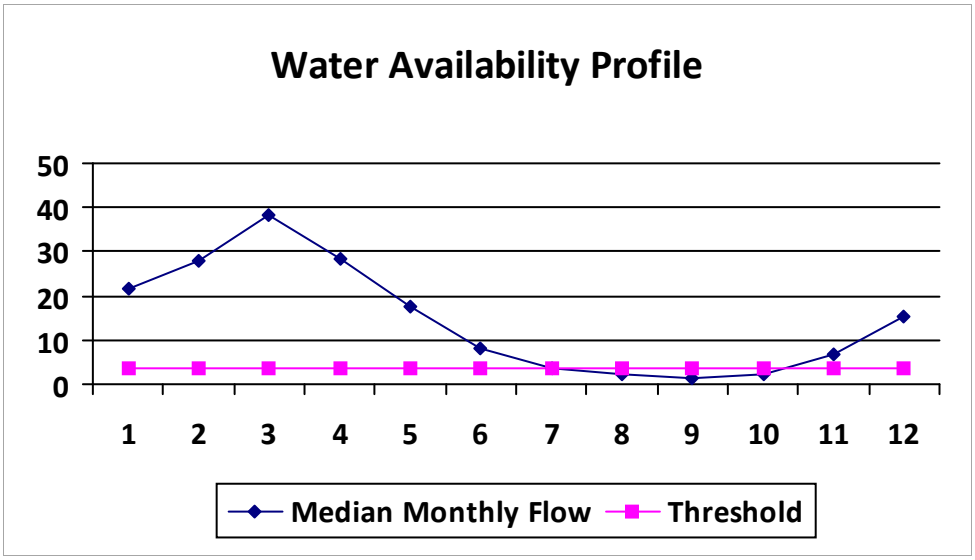
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	21.76		
2	27.76		
3	38.50		
4	28.58		
5	17.42		
6	7.93		
7	3.50		
8	2.05		
9	1.30		
10	2.16		
11	6.79		
12	15.39		



Water Availability Assessment of Location

Base Threshold (cfs)	2.97
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.74
Ungauged Stream Safety (cfs):	0.74
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81574 | Source Name: Wheeling Creek @ Iskon / Iskcon New Vrindaban, Inc.

Source Latitude: 39.967973

Source Longitude: -80.599241

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 189.6 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,500

Max. Simultaneous Trucks:

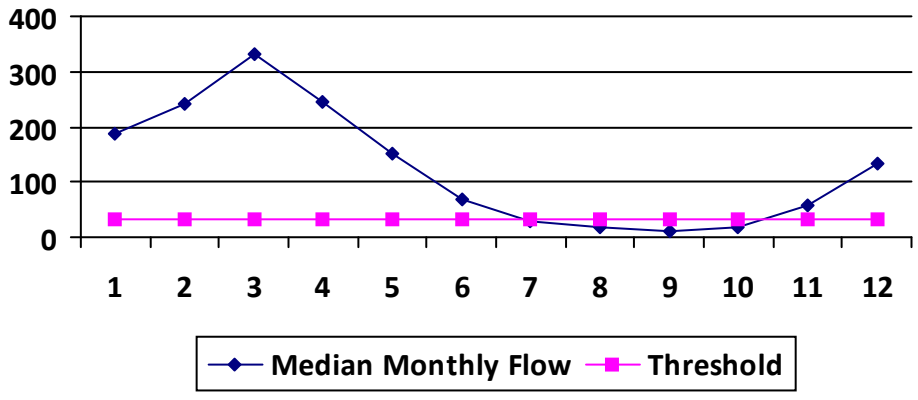
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	187.84		
2	239.69		
3	332.43		
4	246.77		
5	150.42		
6	68.46		
7	30.25		
8	17.70		
9	11.25		
10	18.63		
11	58.61		
12	132.90		



Water Availability Assessment of Location

Base Threshold (cfs)	25.64
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	6.41
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81575 | Source Name: Wheeling Creek @ Schafer / Betty Jane Schafer

Source Latitude: 39.99257

Source Longitude: -80.634912

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 203.38 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 5,250

Max. Simultaneous Trucks:

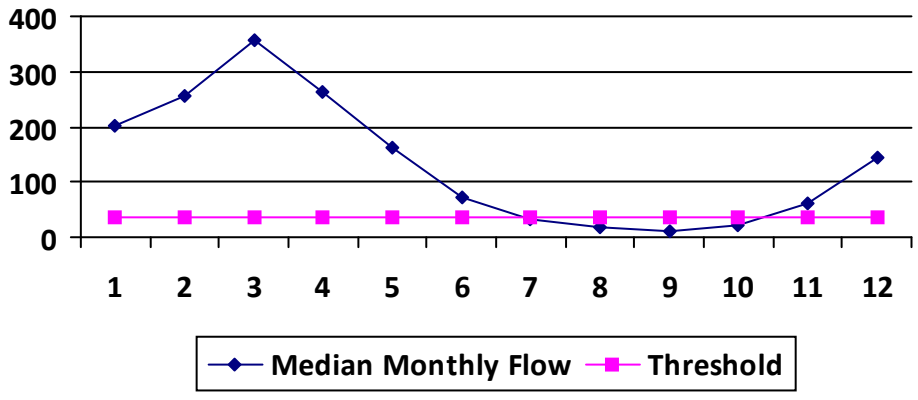
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	201.49		
2	257.11		
3	356.59		
4	264.71		
5	161.35		
6	73.44		
7	32.45		
8	18.98		
9	12.06		
10	19.99		
11	62.87		
12	142.56		



Water Availability Assessment of Location

Base Threshold (cfs)	27.50
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	11.70
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	6.88
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81576 | Source Name: Wheeling Creek @ Sligar / Terry Sligar

Source Latitude: 40.013185

Source Longitude: -80.652863

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 211.8 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 3,360

Max. Simultaneous Trucks:

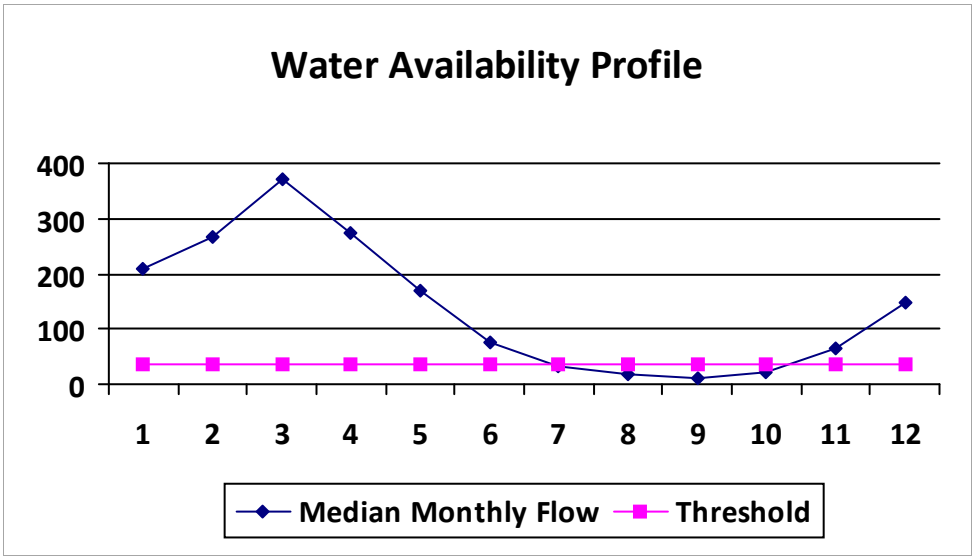
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	209.83		
2	267.76		
3	371.35		
4	275.67		
5	168.03		
6	76.48		
7	33.80		
8	19.77		
9	12.56		
10	20.81		
11	65.47		
12	148.46		



Water Availability Assessment of Location

Base Threshold (cfs)	28.64
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	7.49
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	7.16
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81577 | Source Name: Whiteday Creek @ Sorine Withdrawal Site

Andrew Sorine, Jr.

Source Latitude: 39.472311

Source Longitude: -79.977123

HUC-8 Code: 5020003

Drainage Area (sq. mi.): 12.29 | County: Marion

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

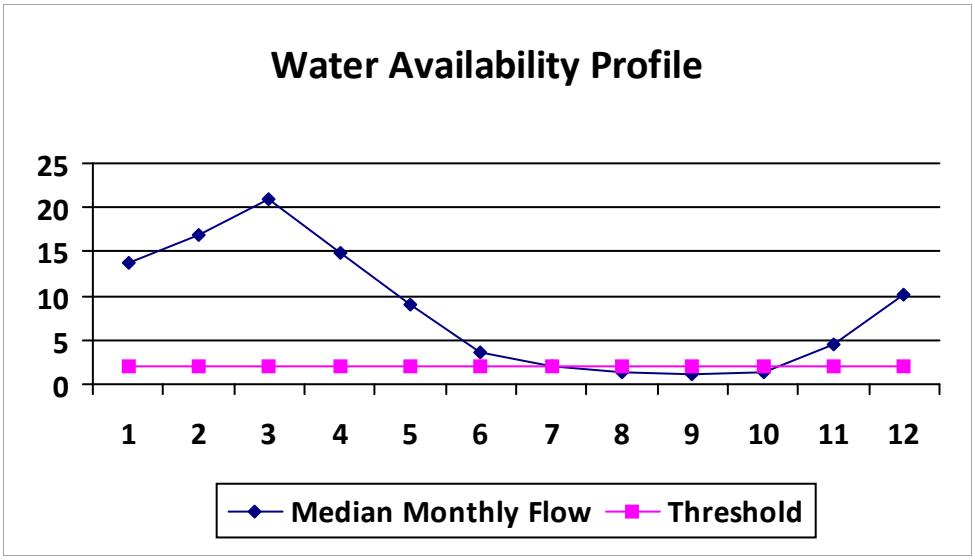
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3061500 | BUFFALO CREEK AT BARRACKVILLE, WV

Drainage Area (sq. mi.): 116.00 | Gauge Threshold (cfs): 15

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	13.77		
2	16.96		
3	20.99		
4	14.90		
5	9.00		
6	3.55		
7	1.98		
8	1.38		
9	1.02		
10	1.31		
11	4.54		
12	10.18		



Water Availability Assessment of Location

Base Threshold (cfs)	1.59
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.40
Ungauged Stream Safety (cfs):	0.40
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81578 | Source Name: WV Fork Fish Creek @ Derby / Steven Derby

Source Latitude: 39.709329

Source Longitude: -80.536079

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 48.62 | County: Wetzel

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

Max. Simultaneous Trucks:

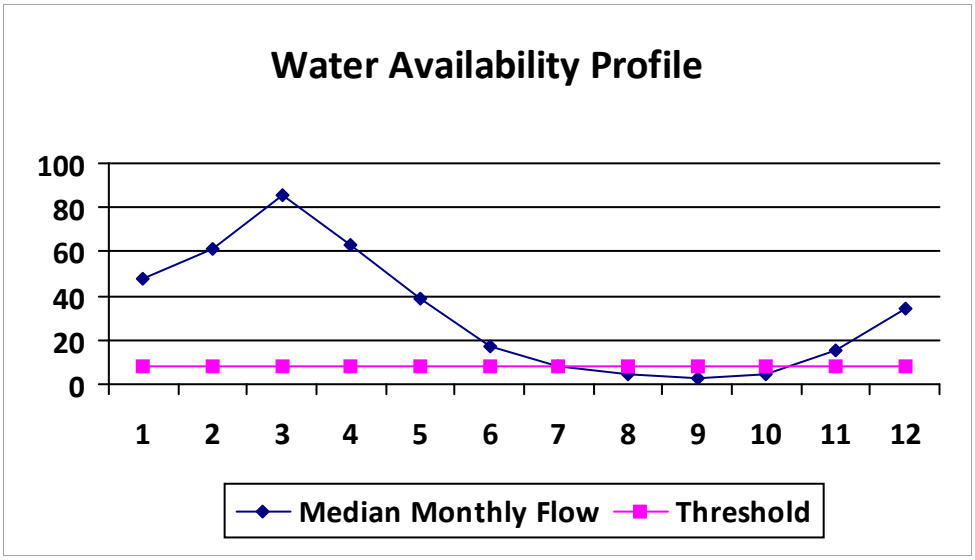
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	48.17		
2	61.47		
3	85.25		
4	63.28		
5	38.57		
6	17.56		
7	7.76		
8	4.54		
9	2.88		
10	4.78		
11	15.03		
12	34.08		



Water Availability Assessment of Location

Base Threshold (cfs)	6.57
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	9.36
Headwater Safety (cfs):	1.64
Ungauged Stream Safety (cfs):	1.64
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 11/3/2021**

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

Source ID: 81579 | Source Name: WV Fork Fish Creek @ Francis

Loretta J. Francis

Source Latitude: 39.733295

Source Longitude: -80.579415

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 86.51 | County: Marshall

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 3,000

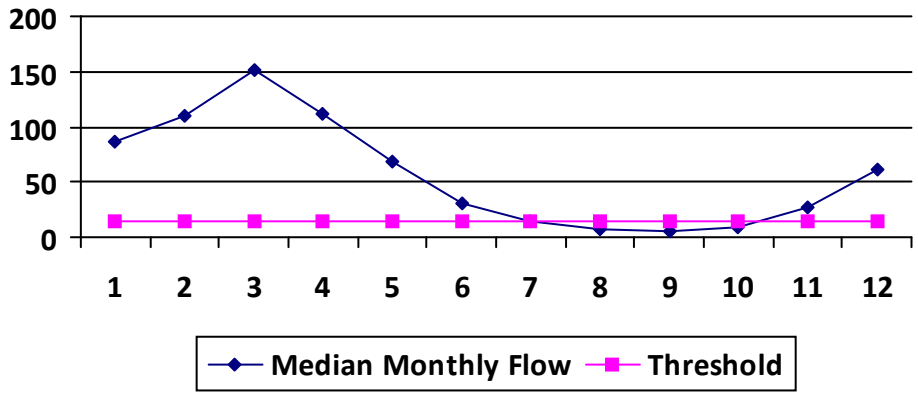
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	85.71		
2	109.37		
3	151.68		
4	112.60		
5	68.63		
6	31.24		
7	13.80		
8	8.07		
9	5.13		
10	8.50		
11	26.74		
12	60.64		



Water Availability Assessment of Location

Base Threshold (cfs)	11.70
Upstream Demand (cfs):	
Downstream Demand (cfs):	
Pump rate (cfs):	6.68
Headwater Safety (cfs):	2.92
Ungauged Stream Safety (cfs):	2.92
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Water Management Plan:
Secondary Water Sources

WMP 02104 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Betty Schafer MSH Well Pad

MODIFICATION **Effective: 11/3/2021**

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Centralized Freshwater Impoundment

Source ID: 81618 Source Name: Ballato Freshwater Impoundment

Source Lat: 40.308611 Source Long: -80.565028 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81619 Source Name: Barry Greathouse Freshwater Impoundment

Source Lat: 40.18831 Source Long: -80.63714 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81621 Source Name: Corbin Freshwater Impoundment

Source Lat: 40.233122 Source Long: -80.524025 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81622 Source Name: Durig A Freshwater Impoundment

Source Lat: 39.715905 Source Long: -80.636785 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81623 Source Name: Durig B Freshwater Impoundment

Source Lat: 38.8022 Source Long: -80.638491 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81624 Source Name: Elmer Freshwater Impoundment

Source Lat: 38.831351 Source Long: -80.276326 County: Upshur

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81625 Source Name: Farmer Freshwater Impoundment

Source Lat: 40.146183 Source Long: -80.573857 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81626 Source Name: Ferrell Freshwater Impoundment

Source Lat: 40.04445 Source Long: -80.53023 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81627 Source Name: Heartwood Forestland Freshwater Impoundment

Source Lat: 39.123961 Source Long: -81.098573 County: Ritchie

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81628 Source Name: Helen Miller Freshwater Impoundment

Source Lat: 40.085722 Source Long: -80.623333 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81629 Source Name: Hickman Freshwater Impoundment

Source Lat: 40.041361 Source Long: -80.548944 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81634 Source Name: Hupp 1 Freshwater Impoundment

Source Lat: 40.175058 Source Long: -80.567622 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81635 Source Name: Hupp 2 Freshwater Impoundment

Source Lat: 40.175069 Source Long: -80.578206 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81636 Source Name: Kelley #2 Freshwater Impoundment

Source Lat: 39.681388 Source Long: -80.701113 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81637 Source Name: Kestner Freshwater Impoundment

Source Lat: 40.147904 Source Long: -80.539568 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81638 Source Name: Linda Greathouse Freshwater Impoundment

Source Lat: 40.205416 Source Long: -80.608805 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81639 Source Name: Lipps Freshwater Impoundment

Source Lat: 38.8446 Source Long: -80.3413 County: Upshur

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81640 Source Name: McGlumphy Freshwater Impoundment

Source Lat: 40.152588 Source Long: -80.587667 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81641 Source Name: Messenger Freshwater Impoundment

Source Lat: 393674857 Source Long: -80.689887 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81642 Source Name: Reliance Minerals A Freshwater Impoundment

Source Lat: 39.521316 Source Long: -79.973907 County: Monongalia

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81643 Source Name: Reliance Minerals B Freshwater Impoundment

Source Lat: 39.524571 Source Long: -79.974529 County: Monongalia

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81644 Source Name: Ross #2 Freshwater Impoundment

Source Lat: 38.9839 Source Long: -80.2628 County: Upshur

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81645 Source Name: Stern Freshwater Impoundment

Source Lat: 39.733943 Source Long: -80.64695 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81646 Source Name: Worthley Freshwater Impoundment

Source Lat: 40.216869 Source Long: -80.548592 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Purchased Water

Source ID: 81589 Source Name: 4K Industrial Park, LLC

Source Lat: 40.100395 Source Long: -80.71269 County: Belmont, OH

Max. Daily Purchase (gal) 588,000

DEP Comments: Treated and recycled flowback/produced water

Source ID: 81593 Source Name: Elite Gasfield Services, Midland Borough

Source Lat: 40.644598 Source Long: -80.469382 County:

Max. Daily Purchase (gal) 2,000,000

DEP Comments: Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81595 Source Name: Equitrans Water Services, LLC Cook Impoundment

Source Lat: 39.817197 Source Long: -80.477956 County: Greene, PA

Max. Daily Purchase (gal) 2,100,000

DEP Comments: PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.

Source ID: 81597 Source Name: Grant Town Water

Source Lat: 39.559407 Source Long: -80.172893 County: Marion

Max. Daily Purchase (gal) 100,000

DEP Comments: @ Horizon Ventures Withdrawal Location

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 81598 Source Name: Hydro Recovery, LP

Source Lat: 40.419251 Source Long: -80.422684 County: Washington, MD

Max. Daily Purchase (gal) 1,000,000

DEP Comments: Treated and recycled flowback/produced water

Source ID: 81605 Source Name: Pennsylvania American Water

Source Lat: Source Long: County:

Max. Daily Purchase (gal) 864,000

DEP Comments: Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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Source ID: 81607 Source Name: Raw Water Pond @ Horizon Ventures

Source Lat: 39.5535 Source Long: -80.16742 County: Marion

Max. Daily Purchase (gal) 1,008,000

DEP Comments:

Source ID: 81608 Source Name: Robinson Fork @ HG Energy

Source Lat: 39.979222 Source Long: -80.487472 County: Washington, MD

Max. Daily Purchase (gal) 1,600,000

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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Source ID: 81612 Source Name: Washington Pike PSD @ Brook Hills Park

Source Lat: 40.26632 Source Long: -80.543592 County: Brooke

Max. Daily Purchase (gal) 1,000,000

DEP Comments:

Source ID: 81613 Source Name: WFN Impoundment A @ HG Energy

Source Lat: 39.991417 Source Long: -80.488694 County: Washington, PA

Max. Daily Purchase (gal) 1,600,000

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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Source ID: 81614 Source Name: WFN Impoundment B @ HG Energy

Source Lat: 39.991917 Source Long: -80.4965 County: Washington, PA

Max. Daily Purchase (gal) 1,600,000

DEP Comments:

Source ID: 81620 Source Name: Columbia Gas Transmission (TCO Elson) FWI

Source Lat: 39.75398 Source Long: -80.613604 County: Marshall

Max. Daily Purchase (gal)

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important:

MODIFICATION Effective: 11/3/2021

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Source ID: 81630 Source Name: Hieronimus #1 Freshwater Impoundment

Source Lat: 39.811 Source Long: -80.5212 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81631 Source Name: Hieronimus #2 Freshwater Impoundment

Source Lat: 39.8149 Source Long: -80.5233 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important:

MODIFICATION Effective: 11/3/2021

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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Source ID: 81632 Source Name: Hieronimus #3 Freshwater Impoundment

Source Lat: 39.8162 Source Long: -80.5266 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

Source ID: 81633 Source Name: Hieronimus #4 Freshwater Impoundment

Source Lat: 39.8198 Source Long: -80.5295 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

WMP 02104	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Betty Schafer MSH Well Pad	

Important: **MODIFICATION** **Effective: 11/3/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Recycled Frac Water

Source ID: 81647 Source Name:

Source Lat: Source Long: County:

Max. Daily Purchase (gal)

DEP Comments: Various sources include, but are not limited to, the Brownlee Land Ventures well pad.

Water Management Plan

Action: Modified **Effective Date:** 1/26/2022
Operator: SWN Production Company, LLC
WMP ID: 2288
Plan Type: Well Pad
Facility Name: Edward Dremak OHI Well Pad
County: Ohio
Lat: 40.158763
Long: -80.651491

Dawn Newell

Digitally signed by Dawn Newell
Date: 2022.01.26 13:45:13 -05'00'

This Water Management Plan governs all water withdrawls associated with the identified well pad. This plan supercedes any previouly approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

Api	Wellname
047-069-00213	Edward Dremak OHI 3H
047-069-00219	Edward Dremak OHI 5H
047-069-00226	Edward Dremak OHI 1H
047-069-00227	Edward Dremak OHI 205H
047-069-00228	Edward Dremak OHI 405H
047-069-00291	Edward Dremak OHI 605H
047-069-00300	Edward Dremak UP OHI 2H
047-069-00316	Edward Dremak OHI 6H
047-069-00317	Edward Dremak OHI 8H
047-069-00318	Edward Dremak OHI 10H
047-069-00319	Edward Dremak OHI 410H
047-069-00320	Edward Dremak OHI 210H
047-069-00332	Edward Dremak UP OHI 2H
047-069-00333	Edward Dremak UP OH 2H

The following water consumption estimates (in gallons) have been reported for this plan.

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	13,020,000
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activities:	210,000
Total for Well Pad:	14,070,000

Primary Sources

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and enforceable as such.

For any source identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this Water Management Plan.

- Big Wheeling Creek @ Wheeling Staging Area

Type:	Stream/River	Gauged Stream:	YES
County:	Ohio	Ref Gauge ID:	3112000
Owner:	Fulton Storage, LLC	Ref Gauge Name:	WHEELING CREEK AT ELM

Intake Latitude:	40.077019		GROVE, WV
Intake Longitude:	-80.713866	Minimum Gauge Reading (cfs):	43.57
HUC-8 Code:	5030106	Minimum Passby (cfs):	40.03
Drainage Area (sq miles):	296.04	Endangered Species:	NO
Regulated Stream:	NO	Mussel Stream:	YES
PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	2500

Comments:

- Booths Creek @ Reliance Minerals

Type:	Stream/River	Gauged Stream:	NO
County:	Monongalia	Ref Gauge ID:	3062500
Owner:	Reliance Minerals, Inc.	Ref Gauge Name:	DECKERS CREEK AT MORGANTOWN, WV
Intake Latitude:	39.530405	Minimum Gauge Reading (cfs):	18.65
Intake Longitude:	-79.978079	Minimum Passby (cfs):	.48
HUC-8 Code:	5020003	Endangered Species:	NO
Drainage Area (sq miles):	1.79	Mussel Stream:	NO
Regulated Stream:	NO	Maximum Pump Rate (gpm):	2000
PWS Within 1 Mile:	YES Morgantown Utility Board		

Comments:

- Buffalo Creek @ Bethany VFD Withdrawal Site

Type:	Stream/River	Gauged Stream:	NO
County:	Brooke	Ref Gauge ID:	3111500
Owner:	Bethany Pike Volunteer Fire Department	Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Intake Latitude:	40.253422	Minimum Gauge Reading (cfs):	67.66
Intake Longitude:	-80.600319	Minimum Passby (cfs):	61.29
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	158.69	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	3100
PWS Within 1 Mile:	NO		

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Buffalo Creek @ DNR

Type:	Stream/River	Gauged Stream:	NO
County:	Brooke	Ref Gauge ID:	3111500

Owner:	WVDNR	Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Intake Latitude:	40.19386		
Intake Longitude:	-80.525796	Minimum Gauge Reading (cfs):	54.63
HUC-8 Code:	5030106	Minimum Passby (cfs):	43.52
Drainage Area (sq miles):	98.28	Endangered Species:	NO
Regulated Stream:	NO	Mussel Stream:	YES
PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	3200

Comments:

- Buffalo Creek @ Forney

Type:	Stream/River	Gauged Stream:	NO
County:	Brooke	Ref Gauge ID:	3111500
Owner:	Forney & Sons Holding Company, LLC	Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Intake Latitude:	40.193453	Minimum Gauge Reading (cfs):	53.07
Intake Longitude:	-80.52175	Minimum Passby (cfs):	43.52
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	98.28	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	2500
PWS Within 1 Mile:	NO		

Comments:

- Buffalo Creek @ Fuchs

		Gauged Stream:	NO
		Ref Gauge ID:	9999999
Type:	Stream/River	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
County:	Brooke		
Owner:	Beverly Fuchs	Minimum Gauge Reading (cfs):	6468
Intake Latitude:	40.258863	Minimum Passby (cfs):	
Intake Longitude:	-80.60337		
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	163.22		
Regulated Stream:	YES Ohio River Min. Flow	Mussel Stream:	YES
PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	5250

Comments:

- Buffalo Creek @ Greathouse Withdrawal Site

Type:	Stream/River	Gauged Stream:	NO

County:	Brooke	Ref Gauge ID:	3111500
Owner:	Linda Greathouse	Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Intake Latitude:	40.20895	Minimum Gauge Reading (cfs):	60.42
Intake Longitude:	-80.60105	Minimum Passby (cfs):	54.51
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	138.56	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	3300
PWS Within 1 Mile:	NO		

Comments:

- Buffalo Creek @ Labelle Farms

Type:	Stream/River	Gauged Stream:	NO
County:	Brooke	Ref Gauge ID:	3111500
Owner:	Steve Paul	Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Intake Latitude:	40.204444	Minimum Gauge Reading (cfs):	59.2
Intake Longitude:	-80.598645	Minimum Passby (cfs):	53.8
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	136.79	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	5250
PWS Within 1 Mile:	NO		

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Buffalo Creek @ WVDOH

Type:	Stream/River	Gauged Stream:	NO
County:	Brooke	Ref Gauge ID:	9999999
Owner:	West Virginia Division of Highways	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	40.258863	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.60337	Minimum Passby (cfs):	
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	163.22	Mussel Stream:	YES
Regulated Stream:	YES Ohio River Min. Flow	Maximum Pump Rate (gpm):	3360
PWS Within 1 Mile:	NO		

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Buffalo Creek @ Worthley Withdrawal Site

Type:	Stream/River	Gauged Stream:	NO
County:	Brooke	Ref Gauge ID:	3111500
Owner:	Kimberly C. Worthley	Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Intake Latitude:	40.210978	Minimum Gauge Reading (cfs):	53.07
Intake Longitude:	-80.548779	Minimum Passby (cfs):	44.83
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	113.49	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	2500
PWS Within 1 Mile:	YES Hammond PSD		

Comments:

- Buffalo Creek @ Zatta

Type:	Stream/River	Gauged Stream:	NO
County:	Brooke	Ref Gauge ID:	3111500
Owner:	Edward Zatta	Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Intake Latitude:	40.253588	Minimum Gauge Reading (cfs):	66.37
Intake Longitude:	-80.600254	Minimum Passby (cfs):	61.29
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	158.69	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	3100
PWS Within 1 Mile:	NO		

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Cross Creek @ Bullock Withdrawal Site

Type:	Stream/River	Gauged Stream:	NO
County:	Brooke	Ref Gauge ID:	3110830
Owner:	Isabelle Bullock	Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Intake Latitude:	40.30735	Minimum Gauge Reading (cfs):	19.32
Intake Longitude:	-80.569317	Minimum Passby (cfs):	20.99
HUC-8 Code:	5030101	Endangered Species:	NO
Drainage Area (sq miles):	74.66	Mussel Stream:	YES
Regulated Stream:	NO		
PWS Within 1 Mile:	NO		

		Maximum Pump Rate (gpm):	2500

Comments:

- Cross Creek @ DNR

		Gauged Stream:	NO
Type:	Stream/River	Ref Gauge ID:	3110830
County:	Brooke	Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Owner:	WVDNR		
Intake Latitude:	40.300536	Minimum Gauge Reading (cfs):	22.44
Intake Longitude:	-80.542229		
HUC-8 Code:	5030101	Minimum Passby (cfs):	22.44
Drainage Area (sq miles):	68.58	Endangered Species:	NO
Regulated Stream:	NO	Mussel Stream:	YES
PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Cross Creek @ Norfolk and Western Railway

		Gauged Stream:	NO
Type:	Stream/River	Ref Gauge ID:	9999999
County:	Brooke	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Owner:	Wheeling & Lake Erie Railway Company		
Intake Latitude:	40.30802	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.599193		
HUC-8 Code:	5030101	Minimum Passby (cfs):	
Drainage Area (sq miles):	79.78	Endangered Species:	NO
Regulated Stream:	YES Ohio River Min. Flow	Mussel Stream:	YES
PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	5250

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Cross Creek @ Palizzi

Type:	Stream/River	Gauged Stream:	NO
County:	Brooke	Ref Gauge ID:	3110830
Owner:	Campbell Palizzi	Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Intake Latitude:	40.302427		

Intake Longitude:	-80.582753	Minimum Gauge Reading (cfs):	23.11
HUC-8 Code:	5030101	Minimum Passby (cfs):	22.44
Drainage Area (sq miles):	79.78	Endangered Species:	NO
Regulated Stream:	NO	Mussel Stream:	YES
PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	4200

Comments:
May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Fish Creek @ Gribben

Type:	Stream/River	Gauged Stream:	NO
County:	Marshall	Ref Gauge ID:	3112000
Owner:	Revocable Living Trust of M. Peggy Gribben	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Intake Latitude:	39.753271	Minimum Gauge Reading (cfs):	56.96
Intake Longitude:	-80.597913	Minimum Passby (cfs):	23.94
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	141.61	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	4200
PWS Within 1 Mile:	NO		

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Fish Creek @ Guzek

Type:	Stream/River	Gauged Stream:	NO
County:	Marshall	Ref Gauge ID:	3112000
Owner:	Walter A. Guzek	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Intake Latitude:	39.753021	Minimum Gauge Reading (cfs):	56.96
Intake Longitude:	-80.613941	Minimum Passby (cfs):	24.44
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	144.57	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	4200
PWS Within 1 Mile:	NO		

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Little Wheeling Creek @ Edge Withdrawal Site

Type:	Stream/River	Gauged Stream:	NO
County:	Ohio	Ref Gauge ID:	3112000
Owner:	Alice Mae Edge	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Intake Latitude:	40.098	Minimum Gauge Reading (cfs):	61.46
Intake Longitude:	-80.5558	Minimum Passby (cfs):	
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	4.26	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	2000
PWS Within 1 Mile:	NO		

Comments:

- Little Wheeling Creek @ Main Street Bank

Type:	Stream/River	Gauged Stream:	NO
County:	Ohio	Ref Gauge ID:	3111955
Owner:	Main Street Bank	Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Intake Latitude:	40.064076	Minimum Gauge Reading (cfs):	23
Intake Longitude:	-80.614406	Minimum Passby (cfs):	2.83
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	13.94	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	2000
PWS Within 1 Mile:	NO		

Comments:
This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Little Wheeling Creek @ Rt. 40 Staging Area

Type:	Stream/River	Gauged Stream:	NO
County:	Ohio	Ref Gauge ID:	3112000
Owner:	JDS Investments, LLC	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Intake Latitude:	40.078324	Minimum Gauge Reading (cfs):	64.8
Intake Longitude:	-80.591145	Minimum Passby (cfs):	2.83
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	13.94	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	2000
PWS Within 1 Mile:	NO		

Comments:

- Middle Wheeling Creek @ Gribben

Type:	Stream/River	Gauged Stream:	NO
County:	Ohio	Ref Gauge ID:	3112000
Owner:	Lawrence Kevin Gribber	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Intake Latitude:	40.036777	Minimum Gauge Reading (cfs):	61.46
Intake Longitude:	-80.598008	Minimum Passby (cfs):	6.26
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	30.81	Mussel Stream:	NO
Regulated Stream:	NO	Maximum Pump Rate (gpm):	2000
PWS Within 1 Mile:	NO		

Comments:

- Middle Wheeling Creek @ Supler

Type:	Stream/River	Gauged Stream:	NO
County:	Ohio	Ref Gauge ID:	3112000
Owner:	Gregory and Peggy Supler	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Intake Latitude:	40.04409	Minimum Gauge Reading (cfs):	62.57
Intake Longitude:	-80.55348	Minimum Passby (cfs):	4.17
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	20.54	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	2500
PWS Within 1 Mile:	NO		

Comments:

- Ohio River @ Extraction B Panhandle

Type:	Stream/River	Gauged Stream:	YES
County:	Brooke	Ref Gauge ID:	9999999
Owner:	SWN Production Company, LLC	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	40.233469	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.654359	Minimum Passby (cfs):	
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	25000	Mussel Stream:	YES
Regulated Stream:	YES Ohio River Min. Flow	Maximum Pump Rate (gpm):	4375
PWS Within 1 Mile:	YES Beech Bottom Water Dept.		

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Proctor Peacemaker

Type:	Stream/River	Gauged Stream:	YES
County:	Wetzel	Ref Gauge ID:	9999999
Owner:	SWN Production Company, LLC	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	39.714299	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.825862	Minimum Passby (cfs):	
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	25000	Mussel Stream:	YES
Regulated Stream:	YES Ohio River Min. Flow	Maximum Pump Rate (gpm):	6000
PWS Within 1 Mile:	YES Beech Bottom Water Dept.		

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Paw Paw Creek @ Horizon Ventures

Type:	Stream/River	Gauged Stream:	NO
County:	Marion	Ref Gauge ID:	3061500
Owner:	Horizon Ventures of WV, Inc	Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Intake Latitude:	39.552426	Minimum Gauge Reading (cfs):	26.96
Intake Longitude:	-80.166833	Minimum Passby (cfs):	4.57
HUC-8 Code:	5020003	Endangered Species:	NO
Drainage Area (sq miles):	28.34	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	2000
PWS Within 1 Mile:	NO		

Comments:
This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Short Creek @ Cain

Type:	Stream/River	Gauged Stream:	NO
County:	Ohio	Ref Gauge ID:	3111500
Owner:	Susan L. Cain	Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Intake Latitude:	40.155061		
Intake Longitude:	-80.651431	Minimum Gauge	64.49

HUC-8 Code:	5030106	Reading (cfs):	
Drainage Area (sq miles):	16.58	Minimum Passby (cfs):	7.68
Regulated Stream:	NO	Endangered Species:	NO
PWS Within 1 Mile:	NO	Mussel Stream:	NO
		Maximum Pump Rate (gpm):	3360

Comments:

- WV Fork Fish Creek @ Derby

		Gauged Stream:	NO
Type:	Stream/River	Ref Gauge ID:	3112000
County:	Wetzel	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Owner:	Steven Derby		
Intake Latitude:	39.709329	Minimum Gauge Reading (cfs):	52.24
Intake Longitude:	-80.536079		
HUC-8 Code:	5030106	Minimum Passby (cfs):	8.21
Drainage Area (sq miles):	48.62	Endangered Species:	NO
Regulated Stream:	NO	Mussel Stream:	YES
PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	4200

Comments:

- WV Fork Fish Creek @ Francis

		Gauged Stream:	NO
Type:	Stream/River	Ref Gauge ID:	3112000
County:	Marshall	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Owner:	Loretta J. Francis		
Intake Latitude:	39.733295	Minimum Gauge Reading (cfs):	63.69
Intake Longitude:	-80.579415		
HUC-8 Code:	5030106	Minimum Passby (cfs):	17.55
Drainage Area (sq miles):	86.51	Endangered Species:	NO
Regulated Stream:	NO	Mussel Stream:	YES
PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	3000

Comments:

- WV Fork of Fish Creek @ Van Scyoc Withdrawal Site

Type:	Stream/River	Gauged Stream:	NO
County:	Wetzel	Ref Gauge ID:	3112000
Owner:	Israel D Van Scyoc	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Intake Latitude:	39.6908		
Intake Longitude:	-80.4762	Minimum Gauge Reading (cfs):	61.46
HUC-8 Code:	5030106		

Drainage Area (sq miles):	21.96	Minimum Passby (cfs):	5.45
Regulated Stream:	NO	Endangered Species:	NO
PWS Within 1 Mile:	NO	Mussel Stream:	YES
		Maximum Pump Rate (gpm):	2000

Comments:

- Wheeling Creek @ Iskon

Type:	Stream/River	Gauged Stream:	YES
County:	Marshall	Ref Gauge ID:	3112000
Owner:	Iskcon New Vrindaban, Inc.	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Intake Latitude:	39.967973	Minimum Gauge Reading (cfs):	47.36
Intake Longitude:	-80.599241		
HUC-8 Code:	5030106	Minimum Passby (cfs):	27.5
Drainage Area (sq miles):	189.6	Endangered Species:	NO
		Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	2500
PWS Within 1 Mile:	NO		

Comments:
This site shall not be operated concurrently with the Wheeling Creek @ Schafer location or the Wheeling Creek @ Sligar site.

- Wheeling Creek @ Schafer

		Gauged Stream:	YES
Type:	Stream/River	Ref Gauge ID:	3112000
County:	Marshall	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Owner:	Betty Jane Schafer		
Intake Latitude:	39.99257	Minimum Gauge Reading (cfs):	49.7
Intake Longitude:	-80.634912		
HUC-8 Code:	5030106	Minimum Passby (cfs):	27.5
Drainage Area (sq miles):	203.38	Endangered Species:	NO
Regulated Stream:	NO	Mussel Stream:	YES
PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Wheeling Creek @ Sligar

Type:	Stream/River	Gauged Stream:	YES
County:	Marshall	Ref Gauge ID:	3112000

Owner:	Terry Sligar	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Intake Latitude:	40.013185		
Intake Longitude:	-80.652863	Minimum Gauge Reading (cfs):	47.36
HUC-8 Code:	5030106	Minimum Passby (cfs):	28.64
Drainage Area (sq miles):	211.8	Endangered Species:	NO
Regulated Stream:	NO	Mussel Stream:	YES
PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	3360

Comments:
This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or Wheeling Creek @ Iskcon site.

- Whiteday Creek @ Sorine Withdrawal Site

		Gauged Stream:	NO
Type:	Stream/River	Ref Gauge ID:	3061500
County:	Marion	Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Owner:	Andrew Sorine, Jr.		
Intake Latitude:	39.472311	Minimum Gauge Reading (cfs):	20.25
Intake Longitude:	-79.977123	Minimum Passby (cfs):	2.29
HUC-8 Code:	5020003	Endangered Species:	NO
Drainage Area (sq miles):	12.29	Mussel Stream:	NO
Regulated Stream:	NO	Maximum Pump Rate (gpm):	2000
PWS Within 1 Mile:	NO		

Comments:

- Adrian Public Service District

Type:	Purchased Water	Gauged Stream:	YES
County:	Upshur	Ref Gauge ID:	3054500
Owner:	Adrian Public Service District	Ref Gauge Name:	TYGART VALLEY RIVER AT PHILIPPI, WV
Intake Latitude:	38.9775		
Intake Longitude:	-80.22083	Minimum Gauge Reading (cfs):	155.85
HUC-8 Code:	5020001	Minimum Passby (cfs):	75.51
Drainage Area (sq miles):	197.33	Endangered Species:	NO
Regulated Stream:	YES	Mussel Stream:	NO
PWS Within 1 Mile:	YES City of Buckhannon Water Plant	Maximum Pump Rate (gpm):	

Comments:

- American Petroleum Partners (Wheeling Creek @ Wilson)

Type:	Purchased Water	Gauged Stream:	NO
County:	Marshall	Ref Gauge ID:	3112000
Owner:	Phillip Wilson	Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Intake Latitude:	39.975882		
Intake Longitude:	-80.62967	Minimum Gauge Reading (cfs):	47.36
HUC-8 Code:	5030106	Minimum Passby (cfs):	26.09
Drainage Area (sq miles):	192.96	Endangered Species:	NO
Regulated Stream:	NO	Mussel Stream:	YES
PWS Within 1 Mile:	NO	Maximum Pump Rate (gpm):	4200

Comments:

- Covestro, LLC

Type:	Purchased Water	Gauged Stream:	YES
County:	Marshall	Ref Gauge ID:	9999999
Owner:	Covestro, LLC	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	39.7218		
Intake Longitude:	-80.830231	Minimum Gauge Reading (cfs):	6468
HUC-8 Code:	5030201	Minimum Passby (cfs):	
Drainage Area (sq miles):	25000	Endangered Species:	NO
Regulated Stream:	YES Ohio River Min. Flow	Mussel Stream:	NO
PWS Within 1 Mile:	YES Grandview-Doolin PSD	Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Elite Gasfield Services

Type:	Purchased Water	Gauged Stream:	YES
County:	Brooke	Ref Gauge ID:	9999999
Owner:	Elite Gasfield Services	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	40.32667		
Intake Longitude:	-80.59861	Minimum Gauge Reading (cfs):	6468
HUC-8 Code:	5030101	Minimum Passby (cfs):	
Drainage Area (sq miles):	25000	Endangered Species:	NO
Regulated Stream:	YES Ohio River Min. Flow	Mussel Stream:	YES
PWS Within 1 Mile:	YES City of Follansbee	Maximum Pump	

Rate (gpm):

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Grandview-Doolin PSD

Type:	Purchased Water	Gauged Stream:	YES
County:	Wetzel	Ref Gauge ID:	9999999
Owner:	Grandview-Doolin Public Service District	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	39.71361	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.82583	Minimum Passby (cfs):	
HUC-8 Code:	5030201	Endangered Species:	NO
Drainage Area (sq miles):	25000	Mussel Stream:	YES
Regulated Stream:	YES Ohio River Min. Flow	Maximum Pump Rate (gpm):	
PWS Within 1 Mile:	YES Grandview-Doolin PSD		

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Marshall County Public Service District 3

Type:	Purchased Water	Gauged Stream:	NO
County:	Marshall	Ref Gauge ID:	9999999
Owner:	Marshall County Public Service District #3	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	39.93556	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.75833	Minimum Passby (cfs):	
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	25000	Mussel Stream:	YES
Regulated Stream:	YES Ohio River Min. Flow	Maximum Pump Rate (gpm):	
PWS Within 1 Mile:	YES Moundsville Water Department		

Comments:
Tap Location is: (39.906400, -80.586200)

- Marshall County Public Service District 4

Type:	Purchased Water	Gauged Stream:	NO
County:	Marshall	Ref Gauge ID:	9999999
Owner:	Marshall County Public Service	Ref Gauge Name:	Ohio River Station: Willow

	District #4		Island Lock & Dam
Intake Latitude:	39.93556	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.75833		
HUC-8 Code:	5030106	Minimum Passby (cfs):	
Drainage Area (sq miles):	25000	Endangered Species:	NO
Regulated Stream:	YES Ohio River Min. Flow	Mussel Stream:	YES
PWS Within 1 Mile:	YES Moundsville Water Department	Maximum Pump Rate (gpm):	

Comments:
Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Ohio County PSD

		Gauged Stream:	YES
Type:	Purchased Water	Ref Gauge ID:	9999999
County:	Ohio	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Owner:	Ohio county PSD		
Intake Latitude:	40.14972	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.70167		
HUC-8 Code:	5030106	Minimum Passby (cfs):	
Drainage Area (sq miles):	25000	Endangered Species:	NO
Regulated Stream:	YES Ohio River Min. Flow	Mussel Stream:	YES
PWS Within 1 Mile:	YES Wheeling Water Department	Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ 4K Industrial Park

Type:	Purchased Water	Gauged Stream:	YES
County:	Belmont, OH	Ref Gauge ID:	9999999
Owner:	4K Industrial Park, LLC	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	40.098805		
Intake Longitude:	-80.711328	Minimum Gauge Reading (cfs):	6468
HUC-8 Code:	5030106		
Drainage Area (sq miles):	25000	Minimum Passby (cfs):	
Regulated Stream:	YES Ohio River Min. Flow	Endangered Species:	NO
PWS Within 1 Mile:	NO	Mussel Stream:	YES

Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ J&R Excavating

		Gauged Stream:	YES
		Ref Gauge ID:	9999999
Type:	Purchased Water	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
County:	Marshall	Minimum Gauge Reading (cfs):	6468
Owner:	J&R Excavating	Minimum Passby (cfs):	
Intake Latitude:	39.998509	Endangered Species:	NO
Intake Longitude:	-80.737336	Mussel Stream:	YES
HUC-8 Code:	5030106	Maximum Pump Rate (gpm):	
Drainage Area (sq miles):	25000		
Regulated Stream:	YES Ohio River Min. Flow		
PWS Within 1 Mile:	NO		

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Oasis Transport Withdrawal Site

		Gauged Stream:	YES
		Ref Gauge ID:	9999999
Type:	Purchased Water	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
County:	Brooke	Minimum Gauge Reading (cfs):	6468
Owner:	Oasis Transport, LLC	Minimum Passby (cfs):	
Intake Latitude:	40.331551	Endangered Species:	YES
Intake Longitude:	-80.601034	Mussel Stream:	YES
HUC-8 Code:	5030106	Maximum Pump Rate (gpm):	
Drainage Area (sq miles):	25000		
Regulated Stream:	YES Ohio River Min. Flow		
PWS Within 1 Mile:	NO		

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Range Tap @ Corbin Withdrawal Site

Type:	Purchased Water	Gauged Stream:	YES

County:	Brooke	Ref Gauge ID:	9999999
Owner:	Range Resources Corp.	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	40.229983	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.521067	Minimum Passby (cfs):	
HUC-8 Code:	5030106	Endangered Species:	YES
Drainage Area (sq miles):	25000	Mussel Stream:	YES
Regulated Stream:	YES Ohio River Min. Flow	Maximum Pump Rate (gpm):	
PWS Within 1 Mile:	NO		

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- The Village of Valley Grove

Type:	Purchased Water	Gauged Stream:	YES
County:	Ohio	Ref Gauge ID:	9999999
Owner:	The Village of Valley Grove	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	40.14972	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.70167	Minimum Passby (cfs):	
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	25000	Mussel Stream:	YES
Regulated Stream:	YES Ohio River Min. Flow	Maximum Pump Rate (gpm):	
PWS Within 1 Mile:	YES Wheeling Water Department		

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Valley Falls PSD

Type:	Purchased Water	Gauged Stream:	YES
County:	Marion	Ref Gauge ID:	3057000
Owner:	Valley Falls PSD	Ref Gauge Name:	TYGART VALLEY RIVER AT COLFAX, WV
Intake Latitude:	39.45889	Minimum Gauge Reading (cfs):	397.39
Intake Longitude:	-80.15583	Minimum Passby (cfs):	
HUC-8 Code:	5020001	Endangered Species:	NO
Drainage Area (sq miles):	1367.05	Mussel Stream:	YES
Regulated Stream:	YES Tygart Valley Dam		
PWS Within 1 Mile:	YES City of Fairmont		

		Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek # 2 @ HG Energy

Type:	Purchased Water	Gauged Stream:	YES
County:	Marshall	Ref Gauge ID:	3111955
Owner:	HG Energy, LLC	Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Intake Latitude:	39.949577	Minimum Gauge Reading (cfs):	18.23
Intake Longitude:	-80.531255	Minimum Passby (cfs):	16.24
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	152.4	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	
PWS Within 1 Mile:	NO		

Comments:

- Wheeling Creek #1 @ HG Energy

Type:	Purchased Water	Gauged Stream:	YES
County:	Marshall	Ref Gauge ID:	3111955
Owner:	HG Energy, LLC	Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Intake Latitude:	39.95205	Minimum Gauge Reading (cfs):	18.23
Intake Longitude:	-80.56189	Minimum Passby (cfs):	16.63
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	156.06	Mussel Stream:	YES
Regulated Stream:	NO	Maximum Pump Rate (gpm):	
PWS Within 1 Mile:	NO		

Comments:

- Wheeling Water Department

Type:	Purchased Water	Gauged Stream:	YES
County:	Ohio	Ref Gauge ID:	9999999
Owner:	Wheeling Water Department	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Intake Latitude:	40.14972	Minimum Gauge Reading (cfs):	6468
Intake Longitude:	-80.70167	Minimum Passby (cfs):	
HUC-8 Code:	5030106	Endangered Species:	NO
Drainage Area (sq miles):	25000		
Regulated Stream:	YES Ohio River Min. Flow		
PWS Within 1 Mile:	YES Wheeling Water		

	Department	Mussel Stream:	YES
		Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Shoemaker Groundwater Wells @ HG Energy

		Gauged Stream:	YES
		Ref Gauge ID:	9999999
Type:	Groundwater	Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
County:	Marshall		
Owner:	HG Energy, LLC	Minimum Gauge Reading (cfs):	6468
Intake Latitude:	40.0222		
Intake Longitude:	-80.733888	Minimum Passby (cfs):	
HUC-8 Code:	5030106		
Drainage Area (sq miles):	25000	Endangered Species:	NO
Regulated Stream:	YES Ohio River Min. Flow		
PWS Within 1 Mile:	NO	Mussel Stream:	NO
		Maximum Pump Rate (gpm):	800

Comments:
This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals.
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Secondary Sources

For each proposed secondary water source identified in your water management plan (i.e. groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow and quality-tested by the operator at the request of the drinking well owner prior to the operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.
- The use of recycled frac water is always encouraged.

- 4K Industrial Park, LLC

Type:	Purchased Water

County: Belmont, OH
Owner: 4K Industrial Park, LLC
Source Latitude: 40.100395
Source Longitude: -80.71269
Reference WMP:

Comments:
Treated and recycled flowback/produced water

- Ballato Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Brooke
  Owner: Nick Ballato and Christopher Ballato
  Source Latitude: 40.308611
  Source Longitude: -80.565028
  Reference WMP: 1877

  Comments:

- Barry Greathouse Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Brooke
  Owner: Barry Greathouse
  Source Latitude: 40.18831
  Source Longitude: -80.63714
  Reference WMP: 1869

  Comments:

- Columbia Gas Transmission (TCO Elson) FWI

  Type: Purchased Water
  County: Marshall
  Owner: Columbia Gas Transmission, LLC.
  Source Latitude: 39.75398
  Source Longitude: -80.613604
  Reference WMP: 547

  Comments:

- Corbin Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Brooke
  Owner: Margaret Corbin
  Source Latitude: 40.233122
  Source Longitude: -80.524025
  Reference WMP: 1870

Comments:

- Durig A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	39.715905
Source Longitude:	-80.636785
Reference WMP:	1862

Comments:

- Durig B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	38.8022
Source Longitude:	-80.638491
Reference WMP:	1863

Comments:

- Elite Gasfield Services, Midland Borough

Type:	Purchased Water
County:	Beaver, PA
Owner:	Elite Gasfield Services
Source Latitude:	40.644598
Source Longitude:	-80.469382
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Elmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Charles and Thomas Elmer
Source Latitude:	38.831351
Source Longitude:	-80.276326
Reference WMP:	1847

Comments:

- Equitrans Water Services, LLC Cook Impoundment

Type:	Purchased Water
County:	Greene, PA

Owner: Equitrans Water Services, LLC
Source Latitude: 39.817197
Source Longitude: -80.477956
Reference WMP:

Comments:
PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.

- Farmer Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Ohio
  Owner: Clarence Farmer
  Source Latitude: 40.146183
  Source Longitude: -80.573857
  Reference WMP: 1871

  Comments:

- Ferrell Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Ohio
  Owner: Kevin Ferrell
  Source Latitude: 40.04445
  Source Longitude: -80.53023
  Reference WMP: 1874

  Comments:

- Grant Town Water

  Type: Purchased Water
  County: Marion
  Owner: Town of Grant Town
  Source Latitude: 39.559407
  Source Longitude: -80.172893
  Reference WMP:

  Comments:
  @ Horizon Ventures Withdrawal Location

- Heartwood Forestland Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Ritchie
  Owner: Wanda Bartlett
  Source Latitude: 39.123961
  Source Longitude: -81.098573

Reference WMP: 1878

Comments:

- Helen Miller Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Ohio
  Owner: Helen J. Miller
  Source Latitude: 40.085722
  Source Longitude: -80.623333
  Reference WMP: 1059

  Comments:

- Hickman Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Ohio
  Owner: Mark Hickman et al
  Source Latitude: 40.041361
  Source Longitude: -80.548944
  Reference WMP: 1875

  Comments:

- Hieronimus #1 Freshwater Impoundment

  Type: Purchased Water
  County: Marshall
  Owner: Paul and Sandra Hieronimus
  Source Latitude: 39.811
  Source Longitude: -80.5212
  Reference WMP: 1856

  Comments:

- Hieronimus #2 Freshwater Impoundment

  Type: Purchased Water
  County: Marshall
  Owner: Paul and Sandra Hieronimus
  Source Latitude: 39.8149
  Source Longitude: -80.5233
  Reference WMP: 1857

  Comments:

- Hieronimus #3 Freshwater Impoundment

  Type: Purchased Water
  County: Marshall

Owner: Paul and Sandra Hieronimus
Source Latitude: 39.8162
Source Longitude: -80.5266
Reference WMP: 1761
Comments:

- Hieronimus #4 Freshwater Impoundment

  Type: Purchased Water
  County: Marshall
  Owner: Paul and Sandra Hieronimus
  Source Latitude: 39.8198
  Source Longitude: -80.5295
  Reference WMP: 1858
  Comments:

- Hupp 1 Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Brooke
  Owner: John Hupp
  Source Latitude: 40.175058
  Source Longitude: -80.567622
  Reference WMP: 1873
  Comments:

- Hupp 2 Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Brooke
  Owner: John Wylie Hupp
  Source Latitude: 40.175069
  Source Longitude: -80.578206
  Reference WMP: 1058
  Comments:

- Hydro Recovery, LP

  Type: Purchased Water
  County: Washington, PA
  Owner: Hydro Recovery, LP - Burgettstown
  Source Latitude: 40.419251
  Source Longitude: -80.422684
  Reference WMP:
  Comments:
  Treated and recycled flowback/produced water

- Kelley #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Margaret Sue Kelley
Source Latitude:	39.681388
Source Longitude:	-80.701113
Reference WMP:	1865

  Comments:

- Kestner Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Gary Kestner
Source Latitude:	40.147904
Source Longitude:	-80.539568
Reference WMP:	1872

  Comments:

- Linda Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Linda Greathouse
Source Latitude:	40.205416
Source Longitude:	-80.608805
Reference WMP:	1876

  Comments:

- Lipps Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Ralph and Opal Lipps
Source Latitude:	38.8446
Source Longitude:	-80.3413
Reference WMP:	1850

  Comments:

- McGlumphy Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Steven M. McGlumphy
Source Latitude:	40.152588
Source Longitude:	-80.587667

Reference WMP: 1060

Comments:

- Messenger Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Wetzel
  Owner: Chesapeake Energy
  Source Latitude: 393674857
  Source Longitude: -80.689887
  Reference WMP: 1859

  Comments:

- Pennsylvania American Water

  Type: Purchased Water
  County:
  Owner: Pennsylvania American Water
  Source Latitude:
  Source Longitude:
  Reference WMP:

  Comments:
  Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Raw Water Pond @ Horizon Ventures

  Type: Purchased Water
  County: Marion
  Owner: Horizon Ventures of WV, Inc
  Source Latitude: 39.5535
  Source Longitude: -80.16742
  Reference WMP:

  Comments:

- Recycled Frac Water

  Type: Recycled Frac Water
  County:
  Owner:
  Source Latitude:
  Source Longitude:
  Reference WMP:

  Comments:
  Treated and recycled flowback/produced water sources may include, but are not limited to this well pad.

- Reliance Minerals A Freshwater Impoundment

  Type: Centralized Freshwater Impoundment

County: Monongalia
Owner: Reliance Minerals, Inc.
Source Latitude: 39.521316
Source Longitude: -79.973907
Reference WMP: 1868
Comments:

- Reliance Minerals B Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Monongalia
  Owner: Reliance Minerals, Inc.
  Source Latitude: 39.524571
  Source Longitude: -79.974529
  Reference WMP: 1867
  Comments:

- Robinson Fork @ HG Energy

  Type: Purchased Water
  County: Washington, PA
  Owner: HG Energy II Appalachia, LLC.
  Source Latitude: 39.979222
  Source Longitude: -80.487472
  Reference WMP:
  Comments:

- Ross #2 Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Upshur
  Owner: Mike Ross
  Source Latitude: 38.9839
  Source Longitude: -80.2628
  Reference WMP: 1851
  Comments:

- Stern Freshwater Impoundment

  Type: Centralized Freshwater Impoundment
  County: Marshall
  Owner: Alton and Mary Stern
  Source Latitude: 39.733943
  Source Longitude: -80.64695
  Reference WMP: 1826
  Comments:

- WFN Impoundment A @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy, LLC
Source Latitude:	39.991417
Source Longitude:	-80.488694
Reference WMP:	

Comments:

- WFN Impoundment B @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy
Source Latitude:	39.991917
Source Longitude:	-80.4965
Reference WMP:	

Comments:

- Washington Pike PSD @ Brook Hills Park

Type:	Purchased Water
County:	Brooke
Owner:	Washington Pike PSD
Source Latitude:	40.26632
Source Longitude:	-80.543592
Reference WMP:	

Comments:

- Worthley Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Kimberly Worthley
Source Latitude:	40.216869
Source Longitude:	-80.548592
Reference WMP:	1061

Comments:

Water Management Plan

Action: Modified **Effective Date:** 3/21/2022
Operator: SWN Production Company, LLC
WMP ID: 2334
Plan Type: Well Pad
Facility Name: Mike Ryniawec BRK Well Pad
County: Brooke
Lat: 40.190648
Long: -80.609239

APPROVED
By Dawn Newell at 11:20 am, 3/21/22

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supersedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

Api	Wellname
047-009-00202	Mike Ryniawec BRK 201H
047-009-00214	Mike Ryniawec BRK 6H
047-009-00237	Mike Ryniawec BRK 3H
047-009-00242	Mike Ryniawec BRK 1H
047-009-00329	Mike Ryniawec BRK 6H
047-009-00330	Mike Ryniawec BRK 206H

The following water consumption estimates (in gallons) have been reported for this plan.

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	27,147,960
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activities:	210,000
Total for Well Pad:	28,197,960

Primary Sources

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);

- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and enforceable as such.

For any source identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this Water Management Plan.

- Big Wheeling Creek @ Wheeling Staging Area

Type:	Stream/River
County:	Ohio
Owner:	Fulton Storage, LLC
Intake Latitude:	40.077019
Intake Longitude:	-80.713866
HUC-8 Code:	5030106
Drainage Area (sq miles):	296.04
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	43.57
Minimum Passby (cfs):	40.03
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Booths Creek @ Reliance Minerals

Type:	Stream/River

Gauged Stream:	NO

County:	Monongalia
Owner:	Reliance Minerals, Inc.
Intake Latitude:	39.530405
Intake Longitude:	-79.978079
HUC-8 Code:	5020003
Drainage Area (sq miles):	1.79
Regulated Stream:	NO
PWS Within 1 Mile:	YES Morgantown Utility Board

Ref Gauge ID:	3062500
Ref Gauge Name:	DECKERS CREEK AT MORGANTOWN, WV
Minimum Gauge Reading (cfs):	18.65
Minimum Passby (cfs):	.48
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Buffalo Creek @ Bethany VFD Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Bethany Pike Volunteer Fire Department
Intake Latitude:	40.253422
Intake Longitude:	-80.600319
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	67.66
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Buffalo Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.19386
Intake Longitude:	-80.525796
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	54.63
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3200

Comments:

- Buffalo Creek @ Forney

Type:	Stream/River
County:	Brooke

Gauged Stream:	NO
Ref Gauge ID:	3111500

Owner:	Forney & Sons Holding Company, LLC
Intake Latitude:	40.193453
Intake Longitude:	-80.52175
HUC-8 Code:	5030106
Drainage Area (sq miles):	98.28
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	43.52
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Fuchs

Type:	Stream/River
County:	Brooke
Owner:	Beverly Fuchs
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:

- Buffalo Creek @ Greathouse Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Linda Greathouse
Intake Latitude:	40.20895
Intake Longitude:	-80.60105
HUC-8 Code:	5030106
Drainage Area (sq miles):	138.56
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	60.42
Minimum Passby (cfs):	54.51
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3300

Comments:

- Buffalo Creek @ Labelle Farms

Type:	Stream/River
County:	Brooke
Owner:	Steve Paul

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR

Intake Latitude:	40.204444
Intake Longitude:	-80.598645
HUC-8 Code:	5030106
Drainage Area (sq miles):	136.79
Regulated Stream:	NO
PWS Within 1 Mile:	NO

	DILLONVALE, OH
Minimum Gauge Reading (cfs):	59.2
Minimum Passby (cfs):	53.8
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Buffalo Creek @ WVDOH

Type:	Stream/River
County:	Brooke
Owner:	West Virginia Division of Highways
Intake Latitude:	40.258863
Intake Longitude:	-80.60337
HUC-8 Code:	5030106
Drainage Area (sq miles):	163.22
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Buffalo Creek @ Worthley Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Kimberly C. Worthley
Intake Latitude:	40.210978
Intake Longitude:	-80.548779
HUC-8 Code:	5030106
Drainage Area (sq miles):	113.49
Regulated Stream:	NO
PWS Within 1 Mile:	YES Hammond PSD

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	53.07
Minimum Passby (cfs):	44.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Buffalo Creek @ Zatta

Type:	Stream/River
County:	Brooke
Owner:	Edward Zatta
Intake Latitude:	40.253588
Intake Longitude:	-80.600254
HUC-8 Code:	5030106
Drainage Area (sq miles):	158.69
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	66.37
Minimum Passby (cfs):	61.29
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3100

Comments:
This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Cross Creek @ Bullock Withdrawal Site

Type:	Stream/River
County:	Brooke
Owner:	Isabelle Bullock
Intake Latitude:	40.30735
Intake Longitude:	-80.569317
HUC-8 Code:	5030101
Drainage Area (sq miles):	74.66
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	19.32
Minimum Passby (cfs):	20.99
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Cross Creek @ DNR

Type:	Stream/River
County:	Brooke
Owner:	WVDNR
Intake Latitude:	40.300536
Intake Longitude:	-80.542229
HUC-8 Code:	5030101
Drainage Area (sq miles):	68.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	22.44
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Cross Creek @ Norfolk and Western Railway

Type:	Stream/River
County:	Brooke
Owner:	Wheeling & Lake Erie Railway Company
Intake Latitude:	40.30802
Intake Longitude:	-80.599193
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Cross Creek @ Palizzi

Type:	Stream/River
County:	Brooke
Owner:	Campbell Palizzi
Intake Latitude:	40.302427
Intake Longitude:	-80.582753
HUC-8 Code:	5030101
Drainage Area (sq miles):	79.78
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3110830
Ref Gauge Name:	KINGS CREEK AT WEIRTON, WV
Minimum Gauge Reading (cfs):	23.11
Minimum Passby (cfs):	22.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Fish Creek @ Gribben

Type:	Stream/River
County:	Marshall
Owner:	Revocable Living Trust of M. Peggy Gribben
Intake Latitude:	39.753271
Intake Longitude:	-80.597913
HUC-8 Code:	5030106
Drainage Area (sq miles):	141.61
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	23.94
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Fish Creek @ Guzek

Type:	Stream/River
County:	Marshall
Owner:	Walter A. Guzek
Intake Latitude:	39.753021
Intake Longitude:	-80.613941
HUC-8 Code:	5030106
Drainage Area (sq miles):	144.57
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	56.96
Minimum Passby (cfs):	24.44
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:
Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Little Wheeling Creek @ Edge Withdrawal Site

Type:	Stream/River
County:	Ohio
Owner:	Alice Mae Edge
Intake Latitude:	40.098
Intake Longitude:	-80.5558
HUC-8 Code:	5030106
Drainage Area (sq miles):	4.26
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Little Wheeling Creek @ Main Street Bank

Type:	Stream/River
County:	Ohio
Owner:	Main Street Bank
Intake Latitude:	40.064076
Intake Longitude:	-80.614406
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94

Gauged Stream:	NO
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	23
Minimum Passby (cfs):	2.83
Endangered Species:	NO

Regulated Stream:	NO
PWS Within 1 Mile:	NO

Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Little Wheeling Creek @ Rt. 40 Staging Area

Type:	Stream/River
County:	Ohio
Owner:	JDS Investments, LLC
Intake Latitude:	40.078324
Intake Longitude:	-80.591145
HUC-8 Code:	5030106
Drainage Area (sq miles):	13.94
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	64.8
Minimum Passby (cfs):	2.83
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Gribben

Type:	Stream/River
County:	Ohio
Owner:	Lawrence Kevin Gribber
Intake Latitude:	40.036777
Intake Longitude:	-80.598008
HUC-8 Code:	5030106
Drainage Area (sq miles):	30.81
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	6.26
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Middle Wheeling Creek @ Supler

Type:	Stream/River
County:	Ohio
Owner:	Gregory and Peggy Supler
Intake Latitude:	40.04409
Intake Longitude:	-80.55348
HUC-8 Code:	5030106
Drainage Area (sq miles):	20.54

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	62.57
Minimum Passby (cfs):	4.17
Endangered Species:	NO
Mussel Stream:	YES

Regulated Stream:	NO
PWS Within 1 Mile:	NO

Maximum Pump Rate (gpm):	2500

Comments:

- Ohio River @ Extraction B Panhandle

Type:	Stream/River
County:	Brooke
Owner:	SWN Production Company, LLC
Intake Latitude:	40.233469
Intake Longitude:	-80.654359
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4375

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Proctor Peacemaker

Type:	Stream/River
County:	Wetzel
Owner:	SWN Production Company, LLC
Intake Latitude:	39.714299
Intake Longitude:	-80.825862
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Beech Bottom Water Dept.

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	6000

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Paw Paw Creek @ Horizon Ventures

Type:	Stream/River
County:	Marion
Owner:	Horizon Ventures of WV, Inc

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV

Intake Latitude:	39.552426
Intake Longitude:	-80.166833
HUC-8 Code:	5020003
Drainage Area (sq miles):	28.34
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Minimum Gauge Reading (cfs):	26.96
Minimum Passby (cfs):	4.57
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:
This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Short Creek @ Cain

Type:	Stream/River
County:	Ohio
Owner:	Susan L. Cain
Intake Latitude:	40.155061
Intake Longitude:	-80.651431
HUC-8 Code:	5030106
Drainage Area (sq miles):	16.58
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3111500
Ref Gauge Name:	SHORT CREEK NEAR DILLONVALE, OH
Minimum Gauge Reading (cfs):	64.49
Minimum Passby (cfs):	7.68
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	3360

Comments:

- WV Fork Fish Creek @ Derby

Type:	Stream/River
County:	Wetzel
Owner:	Steven Derby
Intake Latitude:	39.709329
Intake Longitude:	-80.536079
HUC-8 Code:	5030106
Drainage Area (sq miles):	48.62
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	52.24
Minimum Passby (cfs):	8.21
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- WV Fork Fish Creek @ Francis

Type:	Stream/River
County:	Marshall
Owner:	Loretta J. Francis
Intake Latitude:	39.733295
Intake Longitude:	-80.579415

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading	63.69

HUC-8 Code:	5030106
Drainage Area (sq miles):	86.51
Regulated Stream:	NO
PWS Within 1 Mile:	NO

(cfs):	
Minimum Passby (cfs):	17.55
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3000

Comments:

- WV Fork of Fish Creek @ Van Scyoc Withdrawal Site

Type:	Stream/River
County:	Wetzel
Owner:	Israel D Van Scyoc
Intake Latitude:	39.6908
Intake Longitude:	-80.4762
HUC-8 Code:	5030106
Drainage Area (sq miles):	21.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	61.46
Minimum Passby (cfs):	5.45
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2000

Comments:

- Wheeling Creek @ Iskcon

Type:	Stream/River
County:	Marshall
Owner:	Iskcon New Vrindaban, Inc.
Intake Latitude:	39.967973
Intake Longitude:	-80.599241
HUC-8 Code:	5030106
Drainage Area (sq miles):	189.6
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	27.5
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	2500

Comments:

- Wheeling Creek @ Schafer

Type:	Stream/River
County:	Marshall
Owner:	Betty Jane Schafer
Intake Latitude:	39.99257
Intake Longitude:	-80.634912
HUC-8 Code:	5030106
Drainage Area (sq	203.38

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	49.7
Minimum Passby (cfs):	27.5

miles):	
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	5250

Comments:
Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Wheeling Creek @ Sligar

Type:	Stream/River
County:	Marshall
Owner:	Terry Sligar
Intake Latitude:	40.013185
Intake Longitude:	-80.652863
HUC-8 Code:	5030106
Drainage Area (sq miles):	211.8
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	28.64
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	3360

Comments:
This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or Wheeling Creek @ Iskcon site.

- Whiteday Creek @ Sorine Withdrawal Site

Type:	Stream/River
County:	Marion
Owner:	Andrew Sorine, Jr.
Intake Latitude:	39.472311
Intake Longitude:	-79.977123
HUC-8 Code:	5020003
Drainage Area (sq miles):	12.29
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3061500
Ref Gauge Name:	BUFFALO CREEK AT BARRACKVILLE, WV
Minimum Gauge Reading (cfs):	20.25
Minimum Passby (cfs):	2.29
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	2000

Comments:

- Adrian Public Service District

Type:	Purchased Water
County:	Upshur
Owner:	Adrian Public Service District
Intake Latitude:	38.9775

Gauged Stream:	YES
Ref Gauge ID:	3054500
Ref Gauge Name:	TYGART VALLEY RIVER AT PHILIPPI, WV
Minimum Gauge Reading	155.85

Intake Longitude:	-80.22083
HUC-8 Code:	5020001
Drainage Area (sq miles):	197.33
Regulated Stream:	YES
PWS Within 1 Mile:	YES City of Buckhannon Water Plant

(cfs):	
Minimum Passby (cfs):	75.51
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:

- American Petroleum Partners (Wheeling Creek @ Wilson)

Type:	Purchased Water
County:	Marshall
Owner:	American Petroleum Partners, LLC
Intake Latitude:	39.975882
Intake Longitude:	-80.62967
HUC-8 Code:	5030106
Drainage Area (sq miles):	192.96
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	NO
Ref Gauge ID:	3112000
Ref Gauge Name:	WHEELING CREEK AT ELM GROVE, WV
Minimum Gauge Reading (cfs):	47.36
Minimum Passby (cfs):	26.09
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	4200

Comments:

- Covestro, LLC

Type:	Purchased Water
County:	Marshall
Owner:	Covestro, LLC
Intake Latitude:	39.7218
Intake Longitude:	-80.830231
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Elite Gasfield Services

Type:	Purchased Water
County:	Brooke

Gauged Stream:	YES
Ref Gauge ID:	9999999

Owner:	Elite Gasfield Services
Intake Latitude:	40.32667
Intake Longitude:	-80.59861
HUC-8 Code:	5030101
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES City of Follansbee

Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Grandview-Doolin PSD

Type:	Purchased Water
County:	Wetzel
Owner:	Grandview-Doolin Public Service District
Intake Latitude:	39.71361
Intake Longitude:	-80.82583
HUC-8 Code:	5030201
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Grandview-Doolin PSD

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Marshall County Public Service District 3

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #3
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

	Department

Comments:
Tap Location is: (39.906400, -80.586200)

- Marshall County Public Service District 4

Type:	Purchased Water
County:	Marshall
Owner:	Marshall County Public Service District #4
Intake Latitude:	39.93556
Intake Longitude:	-80.75833
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Moundsville Water Department

Gauged Stream:	NO
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Ohio County PSD

Type:	Purchased Water
County:	Ohio
Owner:	Ohio county PSD
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ 4K Industrial Park

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Intake Latitude:	40.098805
Intake Longitude:	-80.711328

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam

HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ J&R Excavating

Type:	Purchased Water
County:	Marshall
Owner:	J&R Excavating
Intake Latitude:	39.998509
Intake Longitude:	-80.737336
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Ohio River @ Oasis Transport Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Oasis Transport, LLC
Intake Latitude:	40.331551
Intake Longitude:	-80.601034
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Range Tap @ Corbin Withdrawal Site

Type:	Purchased Water
County:	Brooke
Owner:	Range Resources Corp.
Intake Latitude:	40.229983
Intake Longitude:	-80.521067
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	YES
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- The Village of Valley Grove

Type:	Purchased Water
County:	Ohio
Owner:	The Village of Valley Grove
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	YES Wheeling Water Department

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Valley Falls PSD

Type:	Purchased Water
County:	Marion
Owner:	Valley Falls PSD
Intake Latitude:	39.45889
Intake Longitude:	-80.15583
HUC-8 Code:	5020001
Drainage Area (sq miles):	1367.05

Gauged Stream:	YES
Ref Gauge ID:	3057000
Ref Gauge Name:	TYGART VALLEY RIVER AT COLFAX, WV
Minimum Gauge Reading (cfs):	397.39
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES

Regulated Stream:	YES Tygart Valley Dam
PWS Within 1 Mile:	YES City of Fairmont

Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek # 2 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.949577
Intake Longitude:	-80.531255
HUC-8 Code:	5030106
Drainage Area (sq miles):	152.4
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.24
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Creek #1 @ HG Energy

Type:	Purchased Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	39.95205
Intake Longitude:	-80.56189
HUC-8 Code:	5030106
Drainage Area (sq miles):	156.06
Regulated Stream:	NO
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	3111955
Ref Gauge Name:	Wheeling Creek near Majorsville, WV
Minimum Gauge Reading (cfs):	18.23
Minimum Passby (cfs):	16.63
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate (gpm):	

Comments:

- Wheeling Water Department

Type:	Purchased Water
County:	Ohio
Owner:	Wheeling Water Department
Intake Latitude:	40.14972
Intake Longitude:	-80.70167
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	YES
Maximum Pump Rate	

PWS Within 1 Mile:	YES Wheeling Water Department

(gpm):	

Comments:
Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Shoemaker Groundwater Wells @ HG Energy

Type:	Ground Water
County:	Marshall
Owner:	HG Energy, LLC
Intake Latitude:	40.0222
Intake Longitude:	-80.733888
HUC-8 Code:	5030106
Drainage Area (sq miles):	25000
Regulated Stream:	YES Ohio River Min. Flow
PWS Within 1 Mile:	NO

Gauged Stream:	YES
Ref Gauge ID:	9999999
Ref Gauge Name:	Ohio River Station: Willow Island Lock & Dam
Minimum Gauge Reading (cfs):	6468
Minimum Passby (cfs):	
Endangered Species:	NO
Mussel Stream:	NO
Maximum Pump Rate (gpm):	800

Comments:
This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals.
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Secondary Sources

For each proposed secondary water source identified in your water management plan (i.e. groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow and quality-tested by the operator at the request of the drinking well owner prior to the operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.
- The use of recycled frac water is always encouraged.

- 4K Industrial Park, LLC

Type:	Purchased Water
County:	Belmont, OH
Owner:	4K Industrial Park, LLC
Source Latitude:	40.100395

Source Longitude:	-80.71269
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Ballato Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Nick Ballato and Christopher Ballato
Source Latitude:	40.308611
Source Longitude:	-80.565028
Reference WMP:	1877

Comments:

- Barry Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Barry Greathouse
Source Latitude:	40.18831
Source Longitude:	-80.63714
Reference WMP:	1869

Comments:

- Columbia Gas Transmission (TCO Elson) FWI

Type:	Purchased Water
County:	Marshall
Owner:	Columbia Gas Transmission, LLC.
Source Latitude:	39.75398
Source Longitude:	-80.613604
Reference WMP:	547

Comments:

- Corbin Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Margaret Corbin
Source Latitude:	40.233122
Source Longitude:	-80.524025
Reference WMP:	1870

Comments:

- Durig A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	39.715905
Source Longitude:	-80.636785
Reference WMP:	1862

Comments:

- Durig B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	David and Bonnie Durig
Source Latitude:	38.8022
Source Longitude:	-80.638491
Reference WMP:	1863

Comments:

- Elite Gasfield Services, Midland Borough

Type:	Purchased Water
County:	Beaver, PA
Owner:	Elite Gasfield Services
Source Latitude:	40.644598
Source Longitude:	-80.469382
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Elmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur
Owner:	Charles and Thomas Elmer
Source Latitude:	38.831351
Source Longitude:	-80.276326
Reference WMP:	1847

Comments:

- Equitrans Water Services, LLC Cook Impoundment

Type:	Purchased Water
County:	Greene, PA
Owner:	Equitrans Water Services, LLC
Source Latitude:	39.817197
Source Longitude:	-80.477956
Reference WMP:	

Comments:
PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.

- Farmer Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Clarence Farmer
Source Latitude:	40.146183
Source Longitude:	-80.573857
Reference WMP:	1871

Comments:

- Ferrell Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Kevin Ferrell
Source Latitude:	40.04445
Source Longitude:	-80.53023
Reference WMP:	1874

Comments:

- Grant Town Water

Type:	Purchased Water
County:	Marion
Owner:	Town of Grant Town
Source Latitude:	39.559407
Source Longitude:	-80.172893
Reference WMP:	

Comments:
@ Horizon Ventures Withdrawal Location

- Heartwood Forestland Freshwater Impoundment

Type:	Centralized Freshwater Impoundment

County:	Ritchie
Owner:	Wanda Bartlett
Source Latitude:	39.123961
Source Longitude:	-81.098573
Reference WMP:	1878

Comments:

- Helen Miller Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Helen J. Miller
Source Latitude:	40.085722
Source Longitude:	-80.623333
Reference WMP:	1059

Comments:

- Hickman Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Mark Hickman et al
Source Latitude:	40.041361
Source Longitude:	-80.548944
Reference WMP:	1875

Comments:

- Hieronimus #1 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.811
Source Longitude:	-80.5212
Reference WMP:	1856

Comments:

- Hieronimus #2 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8149
Source Longitude:	-80.5233

Reference WMP:	1857

Comments:

- Hieronimus #3 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8162
Source Longitude:	-80.5266
Reference WMP:	1761

Comments:

- Hieronimus #4 Freshwater Impoundment

Type:	Purchased Water
County:	Marshall
Owner:	Paul and Sandra Hieronimus
Source Latitude:	39.8198
Source Longitude:	-80.5295
Reference WMP:	1858

Comments:

- Hupp 1 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Hupp
Source Latitude:	40.175058
Source Longitude:	-80.567622
Reference WMP:	1873

Comments:

- Hupp 2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	John Wylie Hupp
Source Latitude:	40.175069
Source Longitude:	-80.578206
Reference WMP:	1058

Comments:

- Hydro Recovery, LP

Type:	Purchased Water
County:	Washington, PA
Owner:	Hydro Recovery, LP - Burgettstown
Source Latitude:	40.419251
Source Longitude:	-80.422684
Reference WMP:	

Comments:
Treated and recycled flowback/produced water

- Kelley #2 Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Margaret Sue Kelley
Source Latitude:	39.681388
Source Longitude:	-80.701113
Reference WMP:	1865

Comments:

- Kestner Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Gary Kestner
Source Latitude:	40.147904
Source Longitude:	-80.539568
Reference WMP:	1872

Comments:

- Linda Greathouse Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Linda Greathouse
Source Latitude:	40.205416
Source Longitude:	-80.608805
Reference WMP:	1876

Comments:

- Lipps Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Upshur

Owner:	Ralph and Opal Lipps
Source Latitude:	38.8446
Source Longitude:	-80.3413
Reference WMP:	1850

Comments:

- McGlumphy Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Ohio
Owner:	Steven M. McGlumphy
Source Latitude:	40.152588
Source Longitude:	-80.587667
Reference WMP:	1060

Comments:

- Messenger Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Wetzel
Owner:	Chesapeake Energy
Source Latitude:	393674857
Source Longitude:	-80.689887
Reference WMP:	1859

Comments:

- Pennsylvania American Water

Type:	Purchased Water
County:	
Owner:	Pennsylvania American Water
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

- Range Tap @ Corbin

Type:	Purchased Water
County:	Brooke
Owner:	Range Resources Corp
Source Latitude:	40.229983
Source Longitude:	-80.521067
Reference WMP:	

Comments:

- Raw Water Pond @ Horizon Ventures

Type:	Purchased Water
County:	Marion
Owner:	Horizon Ventures of WV, Inc
Source Latitude:	39.5535
Source Longitude:	-80.16742
Reference WMP:	

Comments:

- Recycled Frac Water

Type:	Recycled Frac Water
County:	
Owner:	
Source Latitude:	
Source Longitude:	
Reference WMP:	

Comments:
Treated and recycled flowback/produced water sources may include, but are not limited to this well pad.

- Reliance Minerals A Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.521316
Source Longitude:	-79.973907
Reference WMP:	1868

Comments:

- Reliance Minerals B Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Monongalia
Owner:	Reliance Minerals, Inc.
Source Latitude:	39.524571
Source Longitude:	-79.974529
Reference WMP:	1867

Comments:

- Ross #2 Freshwater Impoundment

Type:	Centralized Freshwater

	Impoundment
County:	Upshur
Owner:	Mike Ross
Source Latitude:	38.9839
Source Longitude:	-80.2628
Reference WMP:	1851

Comments:

- Stern Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Marshall
Owner:	Alton and Mary Stern
Source Latitude:	39.733943
Source Longitude:	-80.64695
Reference WMP:	1826

Comments:

- WFN Impoundment A @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy, LLC
Source Latitude:	39.991417
Source Longitude:	-80.488694
Reference WMP:	

Comments:

- WFN Impoundment B @ HG Energy

Type:	Purchased Water
County:	Washington, PA
Owner:	HG Energy
Source Latitude:	39.991917
Source Longitude:	-80.4965
Reference WMP:	

Comments:

- Washington Pike PSD @ Brook Hills Park

Type:	Purchased Water
County:	Brooke
Owner:	Washington Pike PSD
Source Latitude:	40.26632
Source Longitude:	-80.543592
Reference WMP:	

Comments:

- Worthley Freshwater Impoundment

Type:	Centralized Freshwater Impoundment
County:	Brooke
Owner:	Kimberly Worthley
Source Latitude:	40.216869
Source Longitude:	-80.548592
Reference WMP:	1061

Comments:

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west virginia department of environmental protection

Water Management Plan:
Well Pad Overview

WMP 02427 | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad | County: Marshall

MODIFICATION **Effective: 12/14/2021**

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supercedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

API Number:	Well Name/Number:	API Number:	Well Name/Number:
047-051-02127	Charles Jamison MSH 8H		
047-051-02294	Charles Jamison MSH 6H		
047-051-02295	Charles Jamison MSH 206H		
047-051-02301	Charles Jamison MSH 10H		
047-051-02302	Charles Jamison MSH 210H		
047-051-02425	Charles Jamison MSH 410H		
047-051-02426	Charles Jamison MSH 610H		
047-051-02427	Charles Jamison MSH 810H		

The following water consumption estimates (in gallons) have been reported for this plan:

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	31,752,000
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activites:	210,000
Total for Well Pad	32,802,000

Est. Construction Start: 7/1/2019

Est. Reclamation End: 10/15/2026

Dawn Newell

Digitally signed by Dawn Newell
Date: 2021.12.14 17:03:38 -05'00'

Water Management Plan:
Primary Water Sources

WMP 02427	API/ID Number	see overview	Operator:	SWN Production Company, LLC	
Plan Type: Well Pad	Charles Jamison MSH Well Pad				

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

For any sources identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for mutiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interepreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this water management plan.

WMP 02427 | API Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Stream/River

- Source **Wheeling Creek @ Iskon** Marshall Owner: **Iskcon New Vrindaban, Inc.**

Max. daily purchase (gal) | Intake Latitude: 39.967973 | Intake Longitude: -80.599241

☐ Regulated Stream? | Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs): 47.36** **Min. Passby (cfs): 27.5**

DEP Comments: This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or the Wheeling Creek @ Sligar site

- Source **Wheeling Creek @ Schafer** Marshall Owner: **Betty Jane Schafer**

Max. daily purchase (gal) | Intake Latitude: 39.99257 | Intake Longitude: -80.634912

☐ Regulated Stream? | Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs): 49.70** **Min. Passby (cfs): 27.5**

DEP Comments: Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Little Wheeling Creek @ Main Street Bank** Ohio Owner: **Main Street Bank**

Max. daily purchase (gal) | Intake Latitude: 40.064076 | Intake Longitude: -80.614406

☐ Regulated Stream? | Ref. Gauge ID: 3111955 Wheeling Creek near Majorsville, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 23.00** **Min. Passby (cfs): 2.83**

DEP Comments: This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Source **Paw Paw Creek @ Horizon Ventures** Marion Owner: **Horizon Ventures of WV, Inc**

Max. daily purchase (gal) | Intake Latitude: 39.552426 | Intake Longitude: -80.166833

☐ Regulated Stream? Ref. Gauge ID: 3061500 BUFFALO CREEK AT BARRACKVILLE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 26.96** **Min. Passby (cfs): 4.57**

DEP Comments: This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Source **Little Wheeling Creek @ Rt. 40 Staging Area** Ohio Owner: **JDS Investments, LLC**

Max. daily purchase (gal) | Intake Latitude: 40.078324 | Intake Longitude: -80.591145

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 64.80** **Min. Passby (cfs): 2.83**

DEP Comments:

- Source **Wheeling Creek @ Sligar** Marshall Owner: **Terry Sligar**

Max. daily purchase (gal) | Intake Latitude: 40.013185 | Intake Longitude: -80.652863

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 3,360 **Min. Gauge Reading (cfs): 47.36** **Min. Passby (cfs): 28.64**

DEP Comments: This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or Wheeling Creek @ Iskcon site.

- Source **Middle Wheeling Creek @ Gribben** Ohio Owner: **Lawrence Kevin Gribber**

Max. daily purchase (gal) | Intake Latitude: 40.036777 | Intake Longitude: -80.598008

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 61.46** **Min. Passby (cfs): 6.26**

DEP Comments:

- Source **Short Creek @ Cain** Ohio Owner: **Susan L. Cain**

Max. daily purchase (gal) | Intake Latitude: 40.155061 | Intake Longitude: -80.651431

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,360 **Min. Gauge Reading (cfs): 64.49** **Min. Passby (cfs): 7.68**

DEP Comments:

- Source **Middle Wheeling Creek @ Supler** Ohio Owner: **Gregory and Peggy Supler**

Max. daily purchase (gal) | Intake Latitude: 40.04409 | Intake Longitude: -80.55348

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs): 62.57** **Min. Passby (cfs): 4.17**

DEP Comments:

- Source **Big Wheeling Creek @ Wheeling Staging Area** Ohio Owner: **Fulton Storage, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
	40.077019	-80.713866

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs): 43.57** **Min. Passby (cfs): 40.03**

DEP Comments:

- Source **Ohio River @ Extraction B Panhandle** Brooke Owner: **SWN Production Company, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
	40.233469	-80.654359

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 4,375 **Min. Gauge Reading (cfs): 6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **WV Fork Fish Creek @ Francis** Marshall Owner: **Loretta J. Francis**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
	39.733295	-80.579415

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 3,000 **Min. Gauge Reading (cfs): 63.69** **Min. Passby (cfs): 17.55**

DEP Comments:

- Source **Ohio River @ Proctor Peacemaker** Wetzel Owner: **SWN Production Company, LLC**

Max. daily purchase (gal) Intake Latitude: 39.714299 Intake Longitude: -80.825862

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 6,000 **Min. Gauge Reading (cfs): 6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Booths Creek @ Reliance Minerals** Monongalia Owner: **Reliance Minerals, Inc.**

Max. daily purchase (gal) Intake Latitude: 39.530405 Intake Longitude: -79.978079

☐ Regulated Stream? Ref. Gauge ID: 3062500 DECKERS CREEK AT MORGANTOWN, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 18.65** **Min. Passby (cfs): 0.48**

DEP Comments:

- Source **West Virginia Fork of Fish Creek @ Van Scyoc Withdrawal** Wetzel Owner: **Israel D Van Scyoc**

Max. daily purchase (gal) Intake Latitude: 39.6908 Intake Longitude: -80.4762

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 61.46** **Min. Passby (cfs): 5.45**

DEP Comments:

- Source **Buffalo Creek @ Bethany VFD Withdrawal Site** Brooke Owner: **Bethany Pike Volunteer Fire Department**

Max. daily purchase (gal) | Intake Latitude: 40.253422 | Intake Longitude: -80.600319

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,100 **Min. Gauge Reading (cfs): 67.66** **Min. Passby (cfs): 61.29**

DEP Comments: This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Source **Whiteday Creek @ Sorine Withdrawal Site** Marion Owner: **Andrew Sorine, Jr.**

Max. daily purchase (gal) | Intake Latitude: 39.472311 | Intake Longitude: -79.977123

☐ Regulated Stream? Ref. Gauge ID: 3061500 BUFFALO CREEK AT BARRACKVILLE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 20.25** **Min. Passby (cfs): 2.29**

DEP Comments:

- Source **Buffalo Creek @ DNR** Brooke Owner: **SWN Water Resources Company, LLC**

Max. daily purchase (gal) | Intake Latitude: 40.19386 | Intake Longitude: -80.525796

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,200 **Min. Gauge Reading (cfs): 54.63** **Min. Passby (cfs): 43.52**

DEP Comments:

- Source **Fish Creek @ Gribben** Marshall Owner: **Revocable Living Trust of M. Peggy Gribben**

Max. daily purchase (gal) Intake Latitude: 39.753271 Intake Longitude: -80.597913

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs): 56.96** **Min. Passby (cfs): 23.94**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Buffalo Creek @ Forney** Brooke Owner: **Forney & Sons Holding Company, LLC**

Max. daily purchase (gal) Intake Latitude: 40.193453 Intake Longitude: -80.52175

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs): 53.07** **Min. Passby (cfs): 43.52**

DEP Comments:

- Source **Buffalo Creek @ Fuchs** Brooke Owner: **Beverly Fuchs**

Max. daily purchase (gal) Intake Latitude: 40.258863 Intake Longitude: -80.60337

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs): 6,468.00** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ Greathouse Withdrawal Site** Brooke Owner: **Linda Greathouse**

Max. daily purchase (gal) | Intake Latitude: 40.20895 | Intake Longitude: -80.60105

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,300 **Min. Gauge Reading (cfs): 60.42** **Min. Passby (cfs): 54.51**

DEP Comments:

- Source **Buffalo Creek @ Labelle Farms** Brooke Owner: **Steve Paul**

Max. daily purchase (gal) | Intake Latitude: 40.204444 | Intake Longitude: -80.598645

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs): 59.20** **Min. Passby (cfs): 53.8**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Source **Buffalo Creek @ Worthley Withdrawal Site** Brooke Owner: **Kimberly C. Worthley**

Max. daily purchase (gal) | Intake Latitude: 40.210978 | Intake Longitude: -80.548779

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs): 53.07** **Min. Passby (cfs): 44.83**

DEP Comments:

- Source **Buffalo Creek @ WVDOH** Brooke Owner: **West Virginia Division of Highways**

Max. daily purchase (gal) Intake Latitude: 40.258863 Intake Longitude: -80.60337

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 3,360 **Min. Gauge Reading (cfs): 6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: http://www.erh.noaa.gov/ohrfc//flows.shtml

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- Source **Buffalo Creek @ Zatta** Brooke Owner: **Edward Zatta**

Max. daily purchase (gal) Intake Latitude: 40.253588 Intake Longitude: -80.600254

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 2,520 **Min. Gauge Reading (cfs): 66.37** **Min. Passby (cfs): 61.29**

DEP Comments: This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Source **Cross Creek @ Bullock Withdrawal Site** Brooke Owner: **Isabelle Bullock**

Max. daily purchase (gal) Intake Latitude: 40.30735 Intake Longitude: -80.569317

☐ Regulated Stream? Ref. Gauge ID: 3110830 KINGS CREEK AT WEIRTON, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs): 19.32** **Min. Passby (cfs): 20.99**

DEP Comments:

- Source **Cross Creek @ DNR** Brooke Owner: **WVDNR**

Max. daily purchase (gal) | Intake Latitude: 40.300536 | Intake Longitude: -80.542229

☐ Regulated Stream? Ref. Gauge ID: 3110830 KINGS CREEK AT WEIRTON, WV

Max. Pump rate (gpm): 3,000 **Min. Gauge Reading (cfs): 22.44** **Min. Passby (cfs): 22.44**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Cross Creek @ Norfolk and Western Railway** Brooke Owner: **Wheeling & Lake Erie Railway Company**

Max. daily purchase (gal) | Intake Latitude: 40.30802 | Intake Longitude: -80.599193

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs): 6,468.00** **Min. Passby (cfs): 0**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Cross Creek @ Palizzi** Brooke Owner: **Campbell Palizzi**

Max. daily purchase (gal) | Intake Latitude: 40.302427 | Intake Longitude: -80.582753

☐ Regulated Stream? Ref. Gauge ID: 3110830 KINGS CREEK AT WEIRTON, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs): 23.11** **Min. Passby (cfs): 22.44**

DEP Comments: May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Source **WV Fork Fish Creek @ Derby** Wetzel Owner: **Steven Derby**

Max. daily purchase (gal) | Intake Latitude: 39.709329 | Intake Longitude: -80.536079

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs): 52.24** **Min. Passby (cfs): 8.21**

DEP Comments:

- Source **Fish Creek @ Guzek** Marshall Owner: **Walter A. Guzek**

Max. daily purchase (gal) | Intake Latitude: 39.753021 | Intake Longitude: -80.613941

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs): 56.96** **Min. Passby (cfs): 24.44**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Little Wheeling Creek @ Edge Withdrawal Site** Ohio Owner: **Alice Mae Edge**

Max. daily purchase (gal) | Intake Latitude: 40.098 | Intake Longitude: -80.5558

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 61.46** **Min. Passby (cfs):**

DEP Comments:

WMP 02427 | API Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Purchased Water

- Source **Adrian Public Service District** Upshur Owner: **Adrian Public Service District**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
144,000	-	-

☑ Regulated Stream? Ref. Gauge ID: 3054500 TYGART VALLEY RIVER AT PHILIPPI, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **155.85** **Min. Passby (cfs):** **75.51**

DEP Comments:

- Source **American Petroleum Partners (Wheeling Creek @ Wilson)** Marshall Owner: **Phillip Wilson**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
3,500,000	39.975882	-80.62967

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): **4,200** **Min. Gauge Reading (cfs):** **47.36** **Min. Passby (cfs):** **26.09**

DEP Comments:

- Source **Covestro, LLC** Marshall Owner: **Covestro, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,050,000	39.7218	-80.830231

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Elite Gasfield Services** Brooke Owner: **Elite Gasfield Services**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,000,000	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Grandview-Doolin PSD** Wetzel Owner: **Grandview-Doolin Public Service District**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
60,480	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Marshall County Public Service District 3** Marshall Owner: **Marshall County Public Service District #4**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
144,000	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Tap Location is: (39.906400, -80.586200)

- Source **Marshall County Public Service District 4** Marshall Owner: **Marshall County Public Service District #4**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
80,000	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Source **Ohio County PSD** Ohio Owner: **Ohio county PSD**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
720,000	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ 4K Industrial Park** Belmont, OH Owner: **4K Industrial Park, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,982,000	40.098805	-80.711328

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ J&R Excavating** Marshall Owner: **J&R Excavating**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,890,000	39.998509	-80.737336

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ Oasis Transport Withdrawal Site** Brooke Owner: **Oasis Transport, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,890,000	40.331551	-80.601034

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Range Tap @ Corbin Withdrawal Site** Brooke Owner: **Range Resources Corp.**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,100,000	40.229983	-80.521067

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **The Village of Valley Grove** Ohio Owner: **The Village of Valley Grove**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
720,000	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Valley Falls PSD** Marion Owner: **Valley Falls PSD**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
144,000	-	-

☑ Regulated Stream? Tygart Valley Dam Ref. Gauge ID: 3057000 TYGART VALLEY RIVER AT COLFAX, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **397.39** **Min. Passby (cfs):**

DEP Comments:

- Source **Wheeling Creek #1 @ HG Energy** Marshall Owner: **HG Energy, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,440,000	39.95205	-80.56189

☐ Regulated Stream? Ref. Gauge ID: 3111955 Wheeling Creek near Majorsville, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **18.23** **Min. Passby (cfs):** **16.63**

DEP Comments:

- Source **Wheeling Creek # 2 @ HG Energy** Marshall Owner: **HG Energy, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,880,000	39.949577	-80.531255

☐ Regulated Stream? Ref. Gauge ID: 3111955 Wheeling Creek near Majorsville, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **18.23** **Min. Passby (cfs):** **16.24**

DEP Comments:

- Source **Wheeling Water Department** Ohio Owner: **Wheeling Water Department**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
720,000	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Source Summary **MODIFICATION** **Effective: 12/14/2021**

WMP 02427 API Number see overview Operator: SWN Production Company, LLC

Plan Type Well Pad Charles Jamison MSH Well Pad

Groundwater

- Source **Shoemaker Groundwater Wells @ HG Energy** Marshall Owner: **HG Energy, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
576,000	40.0222	-80.733888

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **800** **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals. https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82090 | Source Name: Shoemaker Groundwater Wells @ HG Energy

HG Energy, LLC

Source Latitude: 40.0222

Source Longitude: -80.733888

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Marshall

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☑ Regulated Stream? — Ohio River Min. Flow
- ☐ Proximate PSD?
- ☑ Gauged Stream?

Max. Pump rate (gpm): 800

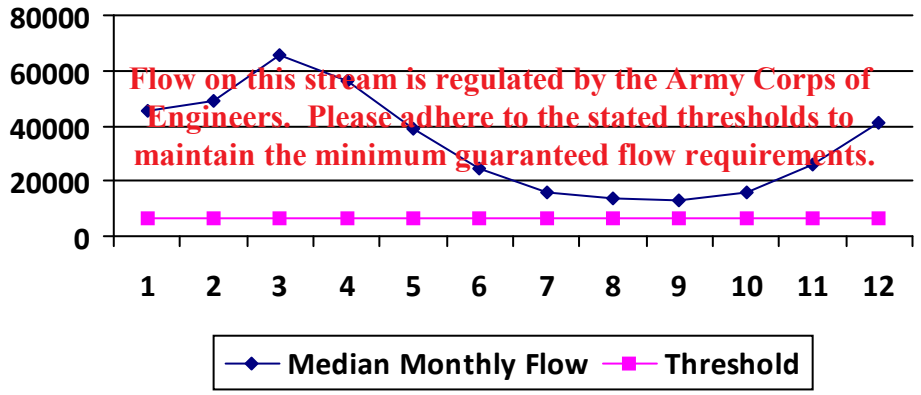
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	1.78
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82071 | Source Name: Adrian Public Service District / Adrian Public Service District

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5020001

Drainage Area (sq. mi.): 197.33 | County: Upshur

- [ ] Endangered Species?
- [ ] Mussel Stream?
- [x] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream?
- [x] Proximate PSD? — City of Buckhannon Water Plant
- [x] Gauged Stream?

Max. Pump rate (gpm):

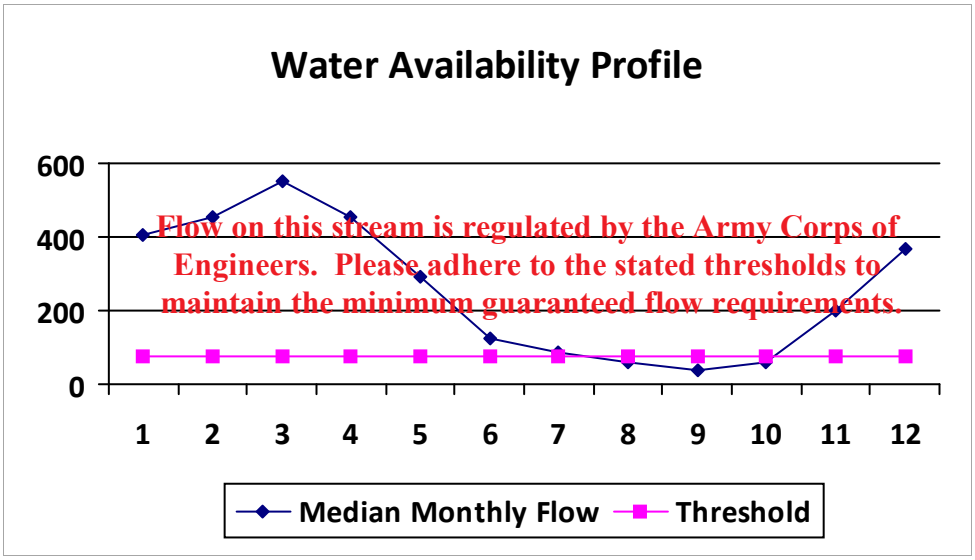
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3054500 | TYGART VALLEY RIVER AT PHILIPPI, WV

Drainage Area (sq. mi.): 914.00 | Gauge Threshold (cfs): 341

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	402.75		
2	456.66		
3	551.03		
4	451.73		
5	291.41		
6	124.17		
7	85.17		
8	59.44		
9	37.59		
10	60.75		
11	201.45		
12	368.28		



Water Availability Assessment of Location

Base Threshold (cfs)	73.62
Upstream Demand (cfs):	4.94
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	18.41
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82072 | Source Name: American Petroleum Partners (Wheeling Creek @ W
Phillip Wilson

Source Latitude: 39.975882
Source Longitude: -80.62967

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 192.96 | County: Marshall

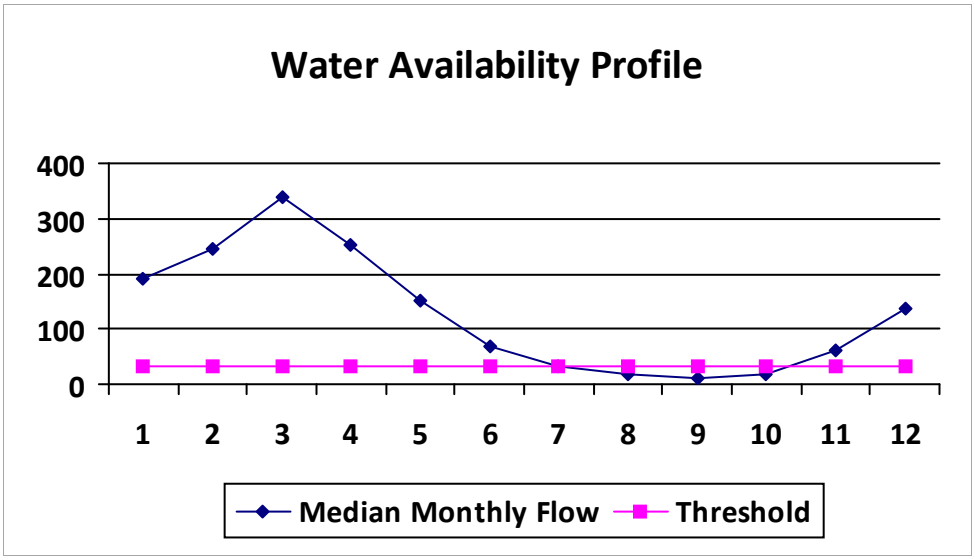
- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 4,200
Max. Simultaneous Trucks: 3
Max. Truck pump rate (gpm) 1000

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	191.17	41.98	149.44
2	243.94	41.98	202.22
3	338.32	41.98	296.60
4	251.15	41.98	209.42
5	153.09	41.98	111.37
6	69.68	41.98	27.95
7	30.79	41.98	-10.93
8	18.01	41.98	-23.71
9	11.44	41.98	-30.28
10	18.96	41.98	-22.76
11	59.65	41.98	17.93
12	135.26	41.98	93.53



Water Availability Assessment of Location

Base Threshold (cfs)	26.09
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	6.52
Min. Gauge Reading (cfs):	**56.86**
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82073 | Source Name: Covestro, LLC / Covestro, LLC

Source Latitude: 39.7218

Source Longitude: -80.830231

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 | County: Marshall

- [ ] Endangered Species?
- [ ] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Grandview-Doolin PSD
- [x] Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

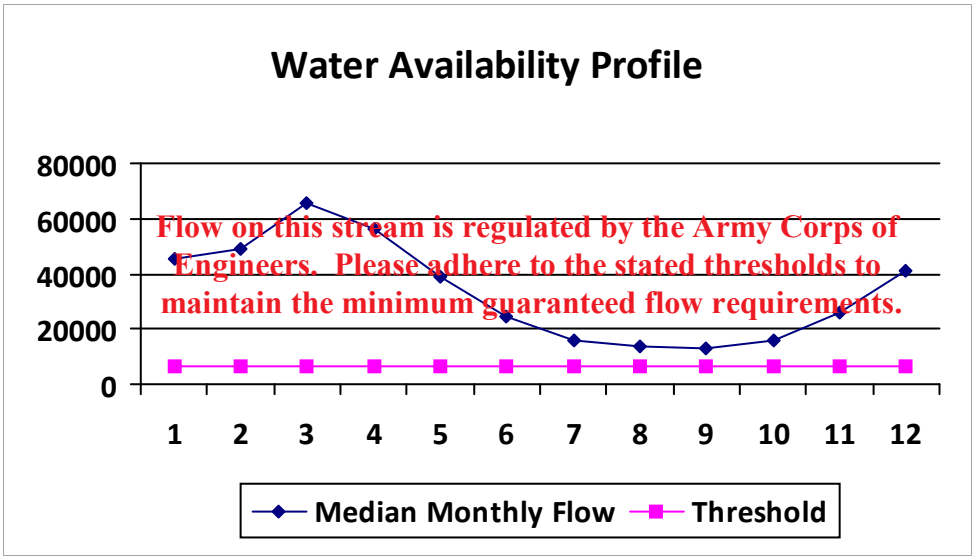
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82075 | Source Name: Elite Gasfield Services / Elite Gasfield Services

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 25000 | County: Brooke

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — City of Follansbee
- [x] Gauged Stream?

Max. Pump rate (gpm):

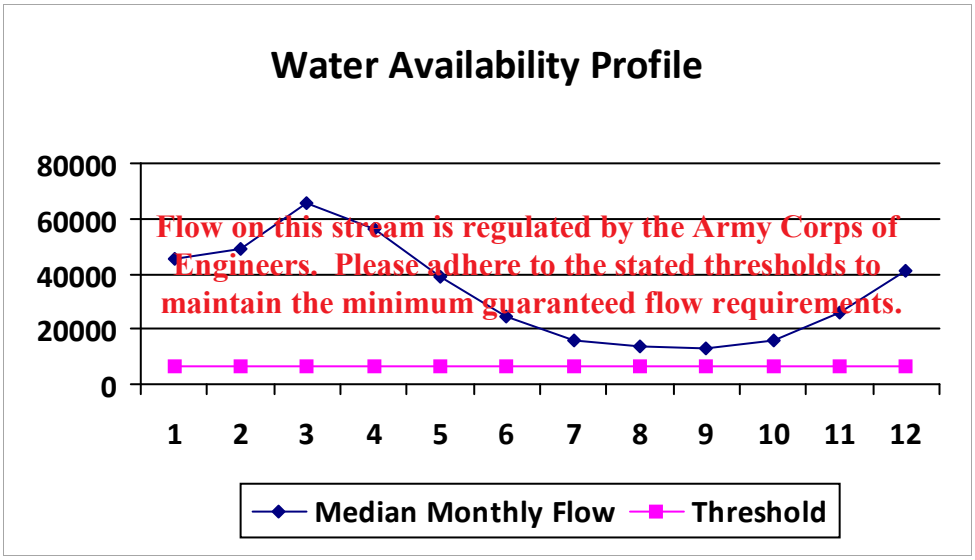
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82077 | Source Name: Grandview-Doolin PSD

Grandview-Doolin Public Service District

Source Latitude: -

Source Longitude: -

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 | County: Wetzel

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Grandview-Doolin PSD
- [x] Gauged Stream?

Max. Pump rate (gpm):

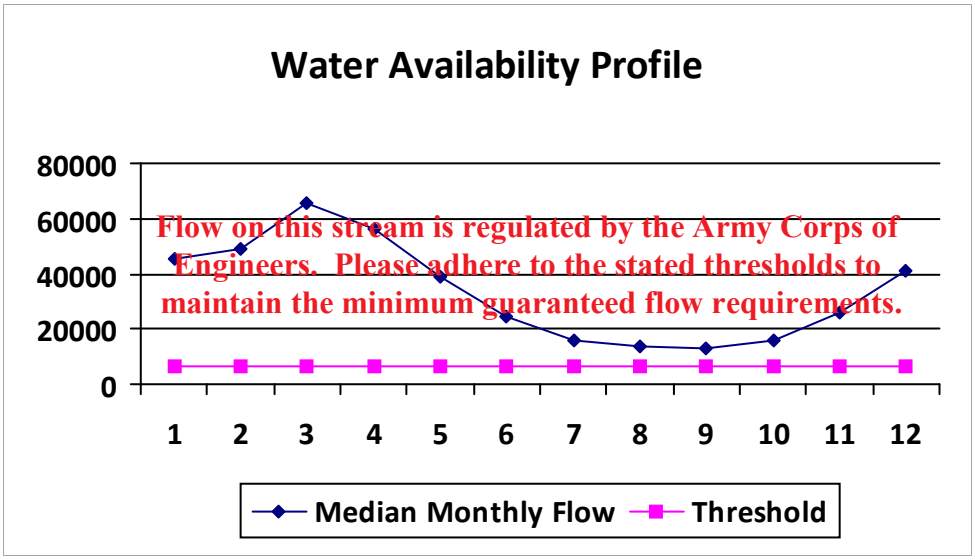
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82080 | Source Name: Marshall County Public Service District 3 / Marshall County Public Service District #4

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Moundsville Water Department
- [ ] Gauged Stream?

Max. Pump rate (gpm):

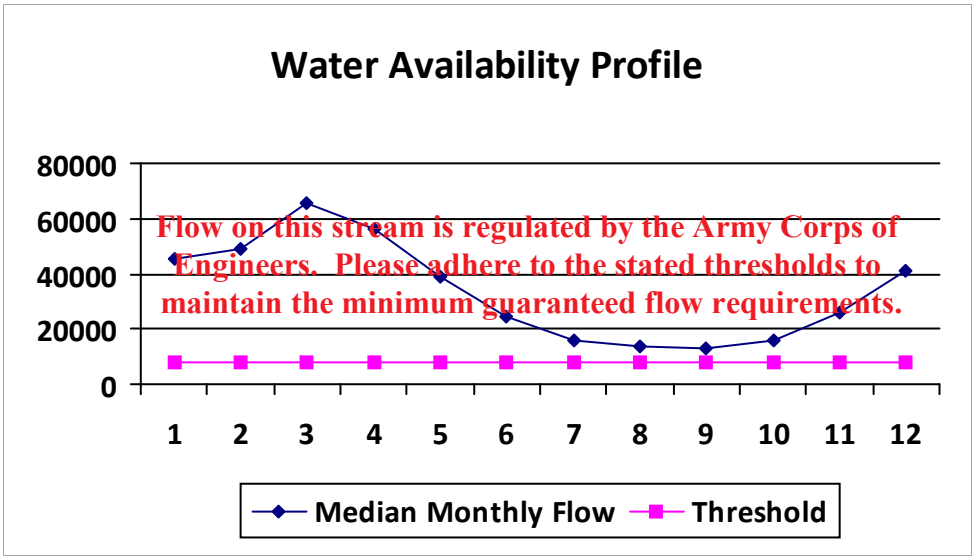
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82081 | Source Name: Marshall County Public Service District 4 / Marshall County Public Service District #4

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Moundsville Water Department
- [ ] Gauged Stream?

Max. Pump rate (gpm):

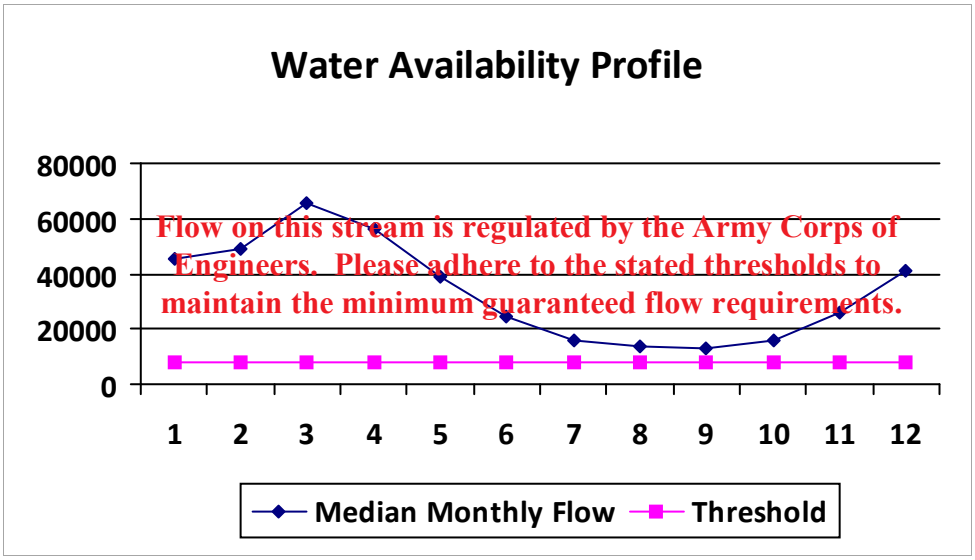
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82082 | Source Name: Ohio County PSD / Ohio county PSD | Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Wheeling Water Department
- [x] Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
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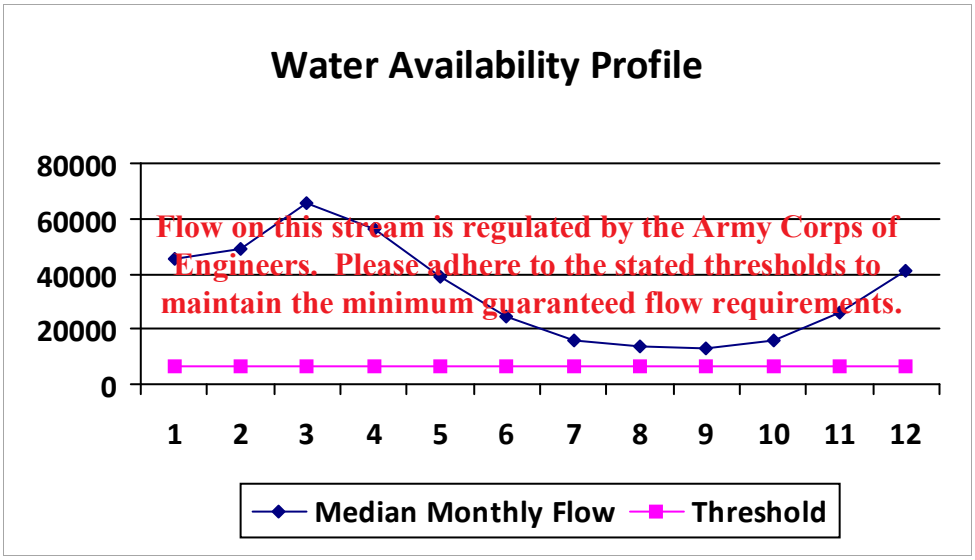
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82083 | Source Name: Ohio River @ 4K Industrial Park / 4K Industrial Park, LLC

Source Latitude: 40.098805

Source Longitude: -80.711328

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Belmont, OH

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm):

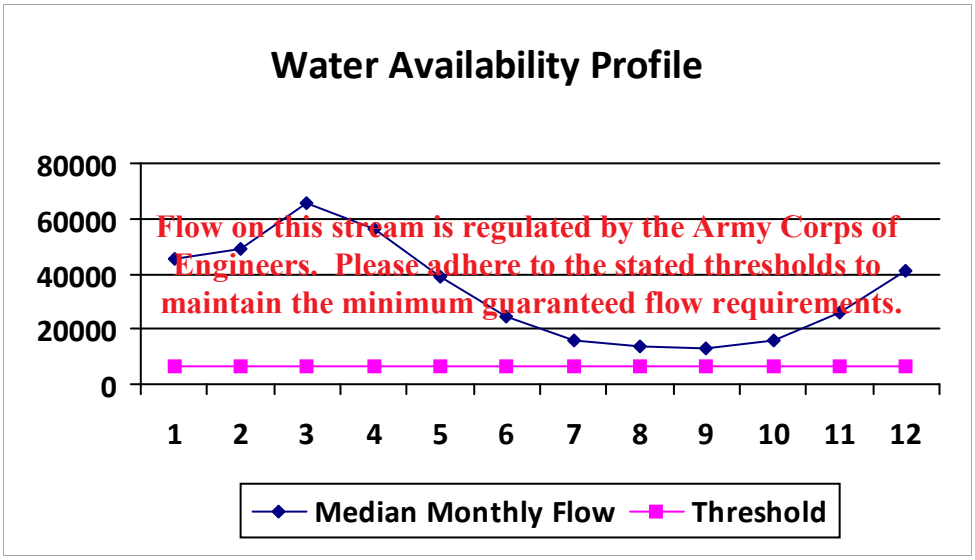
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm):

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82084 | Source Name: Ohio River @ J&R Excavating / J&R Excavating

Source Latitude: 39.998509

Source Longitude: -80.737336

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks: 0

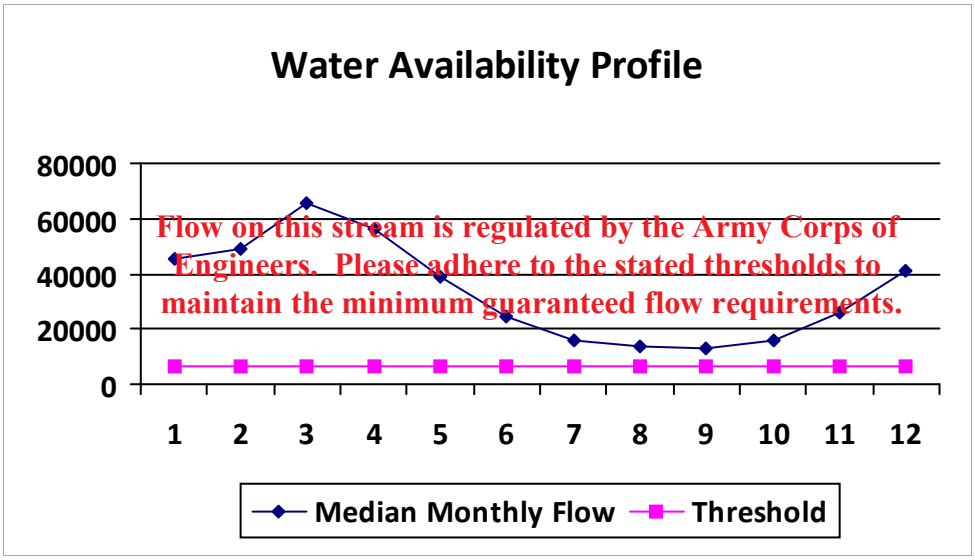
Max. Truck pump rate (gpm):

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82085 | Source Name: Ohio River @ Oasis Transport Withdrawal Site

Oasis Transport, LLC

Source Latitude: 40.331551

Source Longitude: -80.601034

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Brooke

- [x] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm):

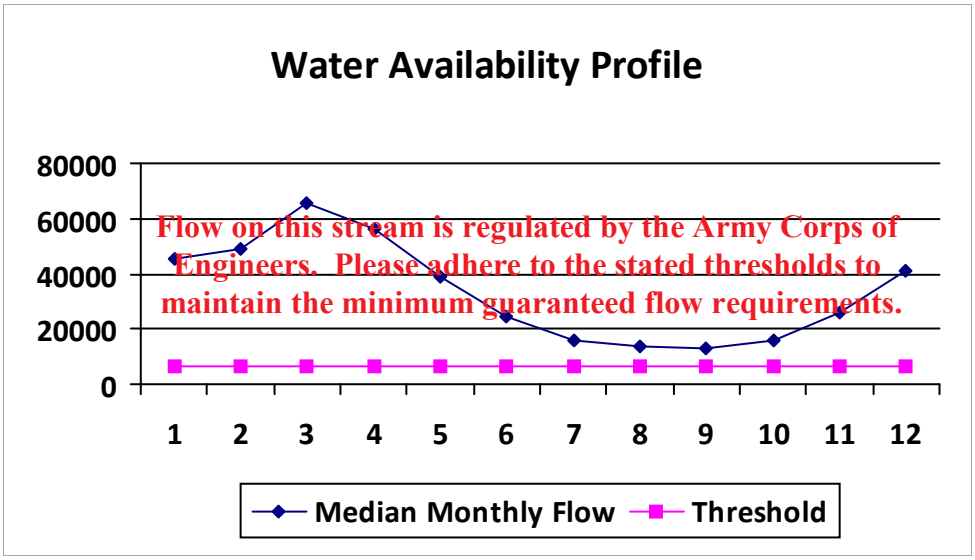
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82087 | Source Name: Range Tap @ Corbin Withdrawal Site

Range Resources Corp.

Source Latitude: 40.229983

Source Longitude: -80.521067

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Brooke

- [x] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm):

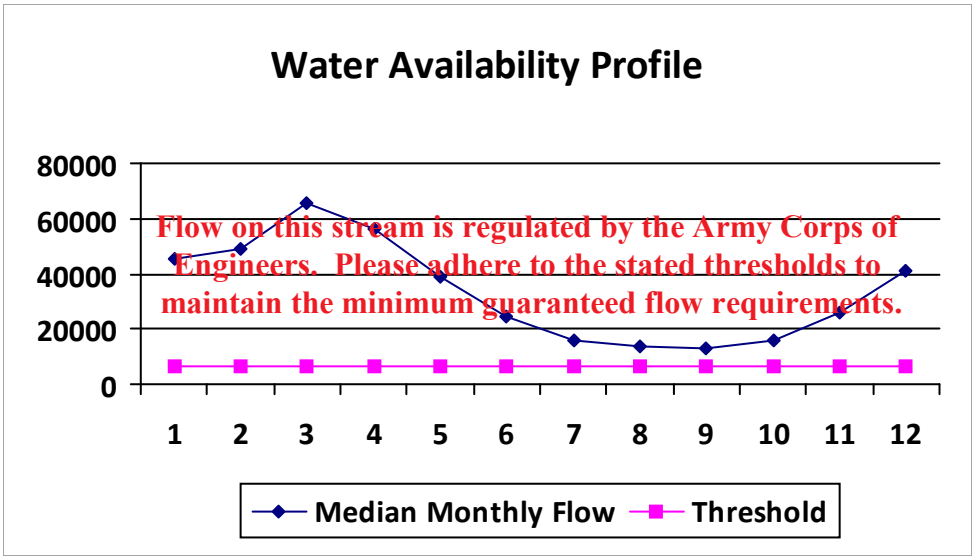
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82091 | Source Name: The Village of Valley Grove / The Village of Valley Grove

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Wheeling Water Department
- [x] Gauged Stream?

Max. Pump rate (gpm):

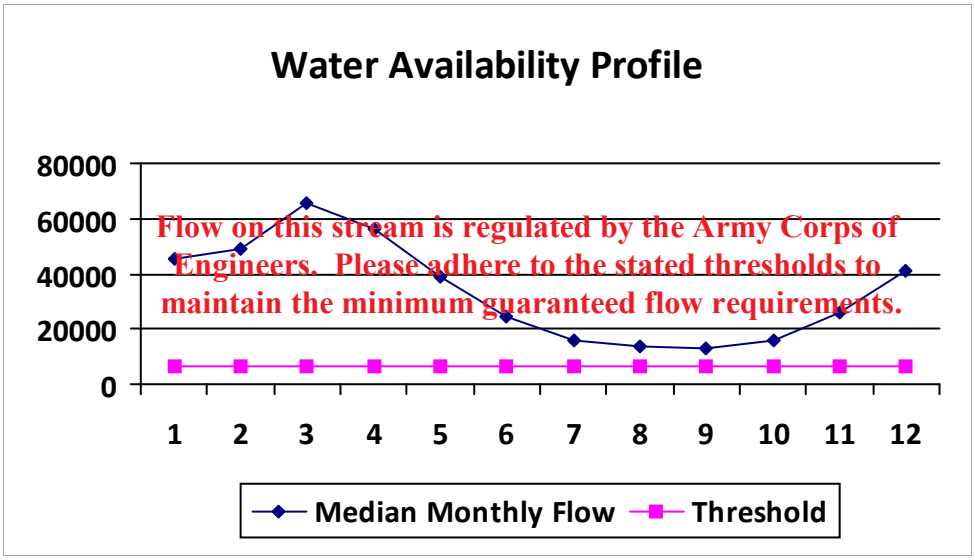
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82092 | Source Name: Valley Falls PSD / Valley Falls PSD

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5020001

Drainage Area (sq. mi.): 1367.05 | County: Marion

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Tygart Valley Dam
- [x] Proximate PSD? — City of Fairmont
- [x] Gauged Stream?

Max. Pump rate (gpm):

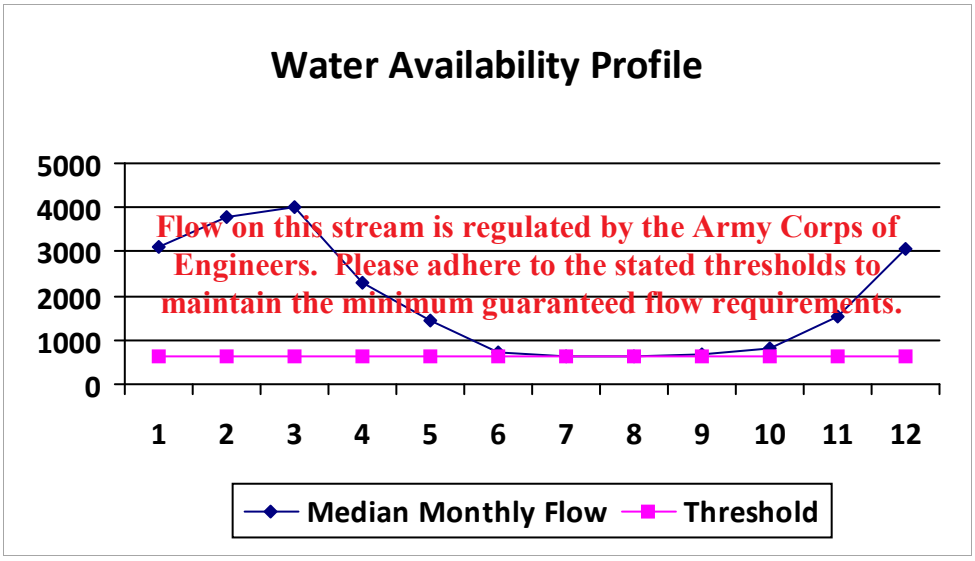
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3057000 | TYGART VALLEY RIVER AT COLFAX, WV

Drainage Area (sq. mi.): 1,363.00 | Gauge Threshold (cfs): 624

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	3,116.33	-	-
2	3,762.53	-	-
3	4,020.62	-	-
4	2,297.81	-	-
5	1,441.95	-	-
6	729.86	-	-
7	613.75	-	-
8	623.01	-	-
9	694.86	-	-
10	793.38	-	-
11	1,551.03	-	-
12	3,049.68	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82096 | Source Name: Wheeling Creek #1 @ HG Energy

HG Energy, LLC

Source Latitude: 39.95205

Source Longitude: -80.56189

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 156.06 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm):

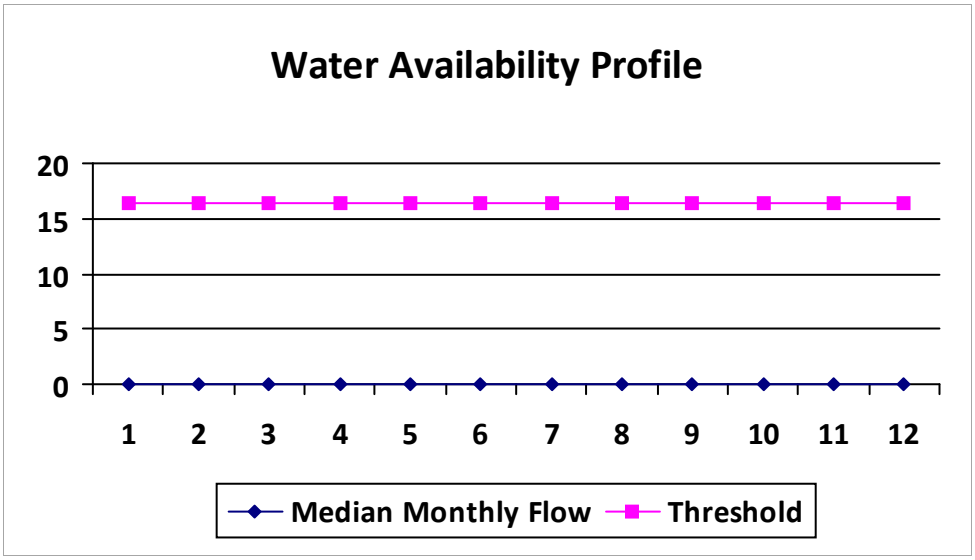
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm)

Reference Gauge: 3111955 | Wheeling Creek near Majorsville, WV

Drainage Area (sq. mi.): 152.00 | Gauge Threshold (cfs): 16

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	0.00		-
2	0.00		-
3	0.00		-
4	0.00		-
5	0.00		-
6	0.00		-
7	0.00		-
8	0.00		-
9	0.00		-
10	0.00		-
11	0.00		-
12	0.00		-



Water Availability Assessment of Location

Base Threshold (cfs)	16.43
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82097 | Source Name: Wheeling Creek # 2 @ HG Energy

HG Energy, LLC

Source Latitude: 39.949577

Source Longitude: -80.531255

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 152.4 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm):

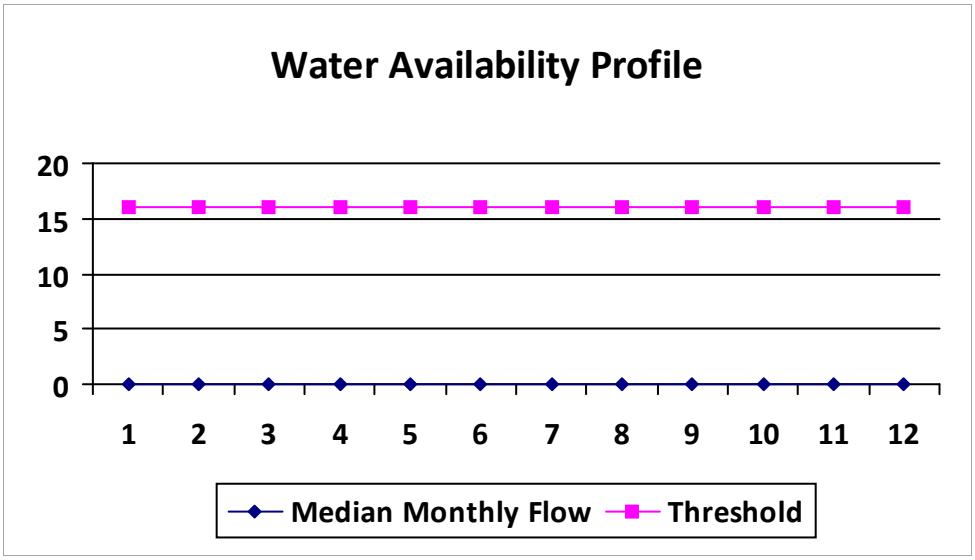
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm)

Reference Gauge: 3111955 | Wheeling Creek near Majorsville, WV

Drainage Area (sq. mi.): 152.00 | Gauge Threshold (cfs): 16

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	0.00		-
2	0.00		-
3	0.00		-
4	0.00		-
5	0.00		-
6	0.00		-
7	0.00		-
8	0.00		-
9	0.00		-
10	0.00		-
11	0.00		-
12	0.00		-



Water Availability Assessment of Location

Base Threshold (cfs)	16.04
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82098 | Source Name: Wheeling Water Department / Wheeling Water Department

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Wheeling Water Department
- [x] Gauged Stream?

Max. Pump rate (gpm):

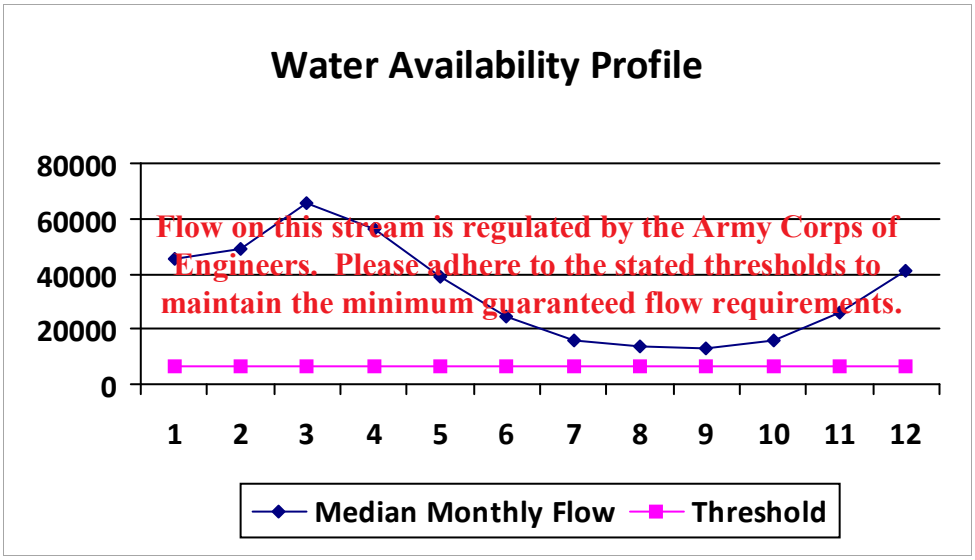
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82037 | Source Name: Wheeling Creek @ Iskon / Iskcon New Vrindaban, Inc.

Source Latitude: 39.967973

Source Longitude: -80.599241

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 189.6 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm): 2,500

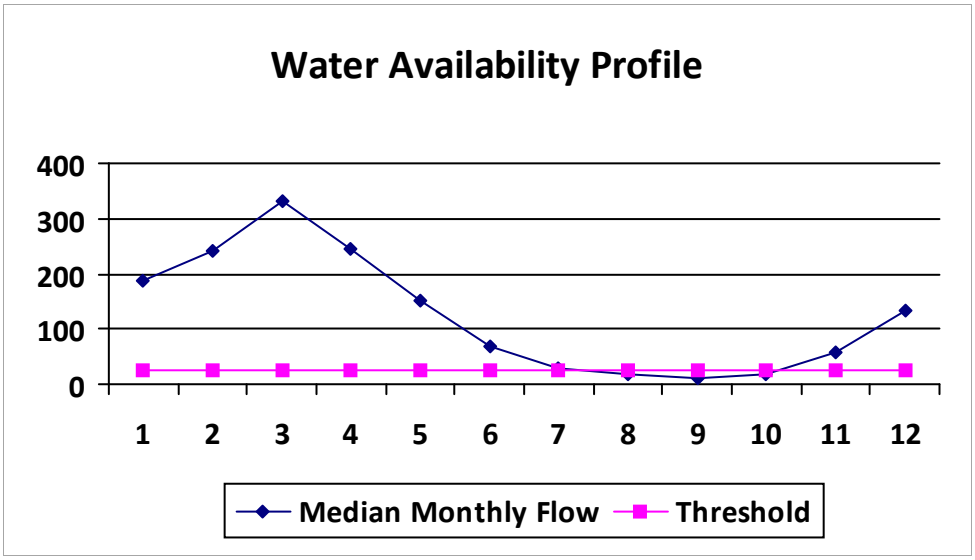
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	187.84	31.21	156.81
2	239.69	31.21	208.66
3	332.43	31.21	301.40
4	246.77	31.21	215.74
5	150.42	31.21	119.39
6	68.46	31.21	37.43
7	30.25	31.21	-0.78
8	17.70	31.21	-13.33
9	11.25	31.21	-19.78
10	18.63	31.21	-12.40
11	58.61	31.21	27.58
12	132.90	31.21	101.87



Water Availability Assessment of Location

Base Threshold (cfs)	25.64
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	**43.57**
Passby at Location (cfs):	**25.64**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82038 | Source Name: Wheeling Creek @ Schafer / Betty Jane Schafer

Source Latitude: 39.99257

Source Longitude: -80.634912

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 203.38 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm): 5,250

Max. Simultaneous Trucks:

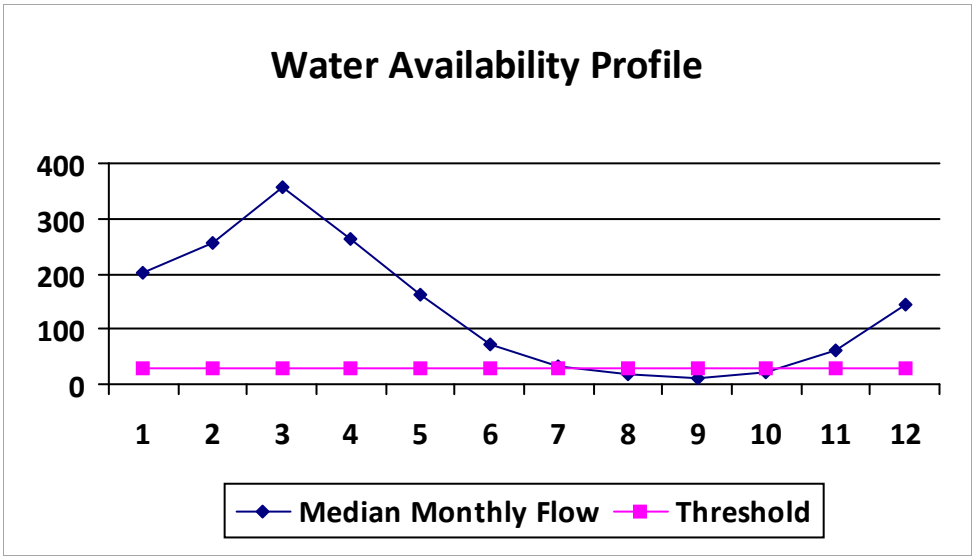
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	201.49	39.20	162.43
2	257.11	39.20	218.06
3	356.59	39.20	317.53
4	264.71	39.20	225.65
5	161.35	39.20	122.30
6	73.44	39.20	34.38
7	32.45	39.20	-6.60
8	18.98	39.20	-20.08
9	12.06	39.20	-26.99
10	19.99	39.20	-19.07
11	62.87	39.20	23.81
12	142.56	39.20	103.50



Water Availability Assessment of Location

Base Threshold (cfs)	27.50
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	11.70
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	**49.70**
Passby at Location (cfs):	**27.50**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82039 | Source Name: Little Wheeling Creek @ Main Street Bank / Main Street Bank

Source Latitude: 40.064076

Source Longitude: -80.614406

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 13.94 | County: Ohio

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [ ] Gauged Stream?

Max. Pump rate (gpm): 2,000

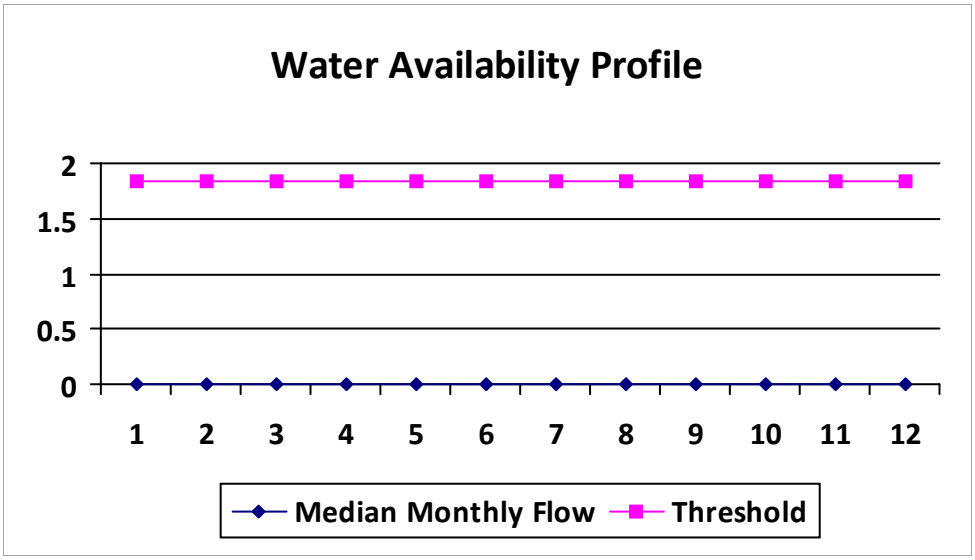
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3111955 | Wheeling Creek near Majorsville, WV

Drainage Area (sq. mi.): 152.00 | Gauge Threshold (cfs): 16

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	0.00	10.00	-
2	0.00	10.00	-
3	0.00	10.00	-
4	0.00	10.00	-
5	0.00	10.00	-
6	0.00	10.00	-
7	0.00	10.00	-
8	0.00	10.00	-
9	0.00	10.00	-
10	0.00	10.00	-
11	0.00	10.00	-
12	0.00	10.00	-



Water Availability Assessment of Location

Base Threshold (cfs)	1.47
Upstream Demand (cfs):	3.34
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.37
Ungauged Stream Safety (cfs):	0.37
Min. Gauge Reading (cfs):	**31.80**
Passby at Location (cfs):	**2.20**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP	02427	API/ID Number	see overview	Operator:	SWN Production Company, LLC
Plan Type:	Well Pad		Charles Jamison MSH Well Pad		

Source ID: 82040 Source Name: Paw Paw Creek @ Horizon Ventures

Horizon Ventures of WV, Inc

Source Latitude: 39.552426

Source Longitude: -80.166833

HUC-8 Code: 5020003

Drainage Area (sq. mi.) 28.34 County: Marion

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

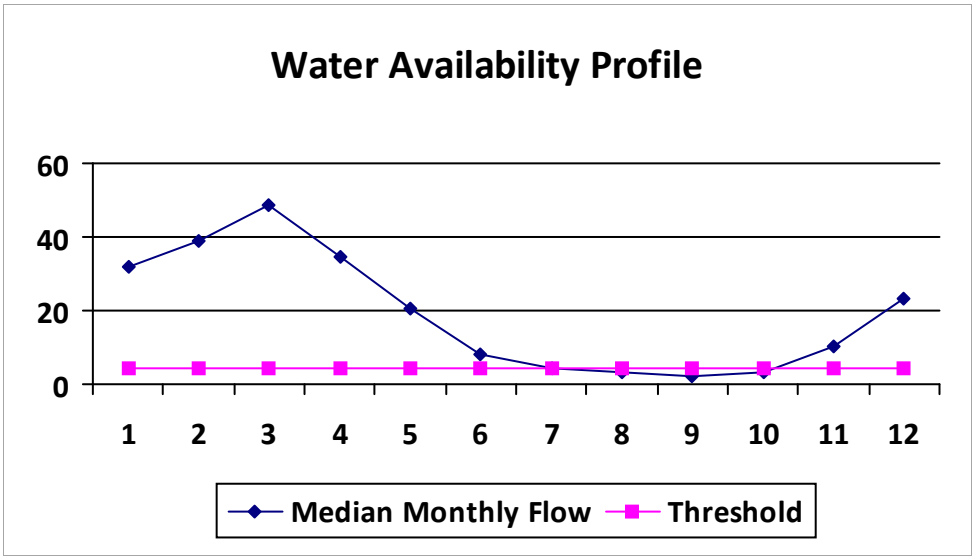
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3061500 BUFFALO CREEK AT BARRACKVILLE, WV

Drainage Area (sq. mi.): 116.00 Gauge Threshold (cfs): 15

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	31.74	9.95	21.86
2	39.11	9.95	29.23
3	48.41	9.95	38.52
4	34.37	9.95	24.48
5	20.75	9.95	10.86
6	8.19	9.95	-1.70
7	4.57	9.95	-5.32
8	3.18	9.95	-6.70
9	2.35	9.95	-7.54
10	3.03	9.95	-6.86
11	10.46	9.95	0.58
12	23.48	9.95	13.59



Water Availability Assessment of Location

Base Threshold (cfs)	3.66
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.92
Ungauged Stream Safety (cfs):	0.92
Min. Gauge Reading (cfs):	**26.96**
Passby at Location (cfs):	**5.50**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP	02427	API/ID Number	see overview	Operator:	SWN Production Company, LLC
Plan Type:	Well Pad		Charles Jamison MSH Well Pad		

Source ID: 82041 Source Name: Little Wheeling Creek @ Rt. 40 Staging Area
JDS Investments, LLC

Source Latitude: 40.078324
Source Longitude: -80.591145

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 13.94 County: Ohio

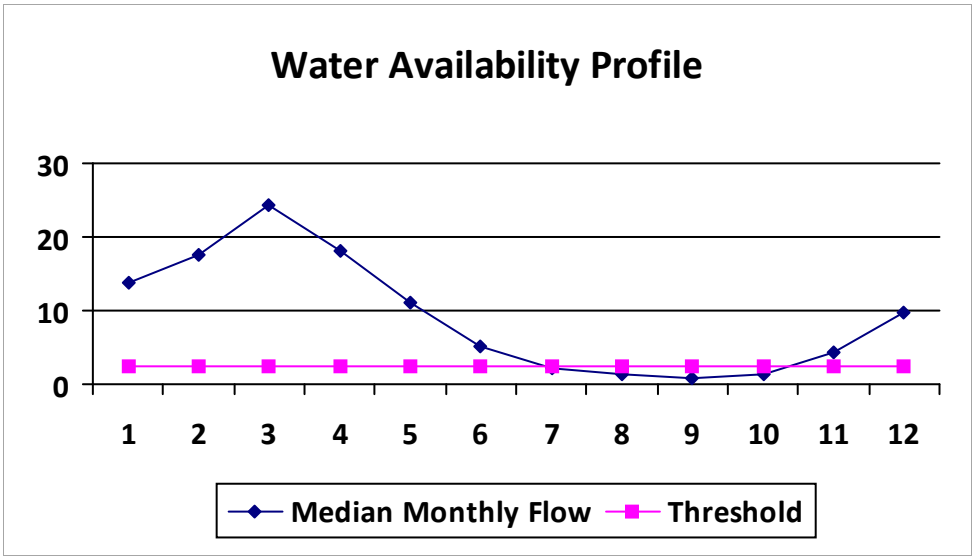
- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	13.81	10.62	3.55
2	17.62	10.62	7.36
3	24.44	10.62	14.18
4	18.14	10.62	7.88
5	11.06	10.62	0.80
6	5.03	10.62	-5.23
7	2.22	10.62	-8.03
8	1.30	10.62	-8.96
9	0.83	10.62	-9.43
10	1.37	10.62	-8.89
11	4.31	10.62	-5.95
12	9.77	10.62	-0.49



Water Availability Assessment of Location

Base Threshold (cfs)	1.89
Upstream Demand (cfs):	3.34
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.47
Ungauged Stream Safety (cfs):	0.47
Min. Gauge Reading (cfs):	**64.80**
Passby at Location (cfs):	**2.83**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82042 | Source Name: Wheeling Creek @ Sligar / Terry Sligar

Source Latitude: 40.013185

Source Longitude: -80.652863

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 211.8 | County: Marshall

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☑ Gauged Stream?

Max. Pump rate (gpm): 3,360

Max. Simultaneous Trucks:

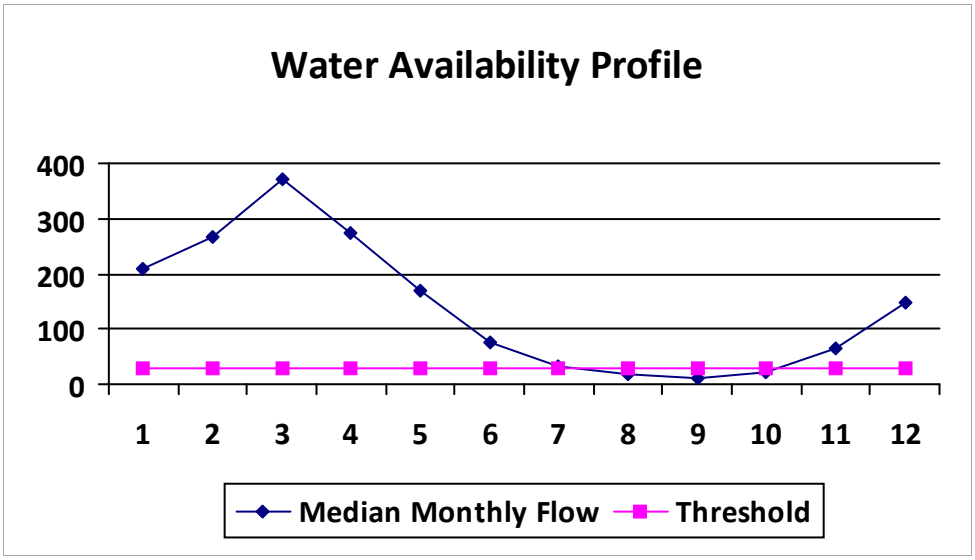
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	209.83	36.13	173.84
2	267.76	36.13	231.77
3	371.35	36.13	335.36
4	275.67	36.13	239.68
5	168.03	36.13	132.05
6	76.48	36.13	40.49
7	33.80	36.13	-2.19
8	19.77	36.13	-16.22
9	12.56	36.13	-23.42
10	20.81	36.13	-15.17
11	65.47	36.13	29.49
12	148.46	36.13	112.48



Water Availability Assessment of Location

Base Threshold (cfs)	28.64
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	7.49
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	**45.49**
Passby at Location (cfs):	**28.64**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP	02427	API/ID Number	see overview	Operator:	SWN Production Company, LLC
Plan Type:	Well Pad		Charles Jamison MSH Well Pad		

Source ID: 82043 Source Name: Middle Wheeling Creek @ Gribben
Lawrence Kevin Gribber

Source Latitude: 40.036777
Source Longitude: -80.598008

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 30.81 County: Ohio

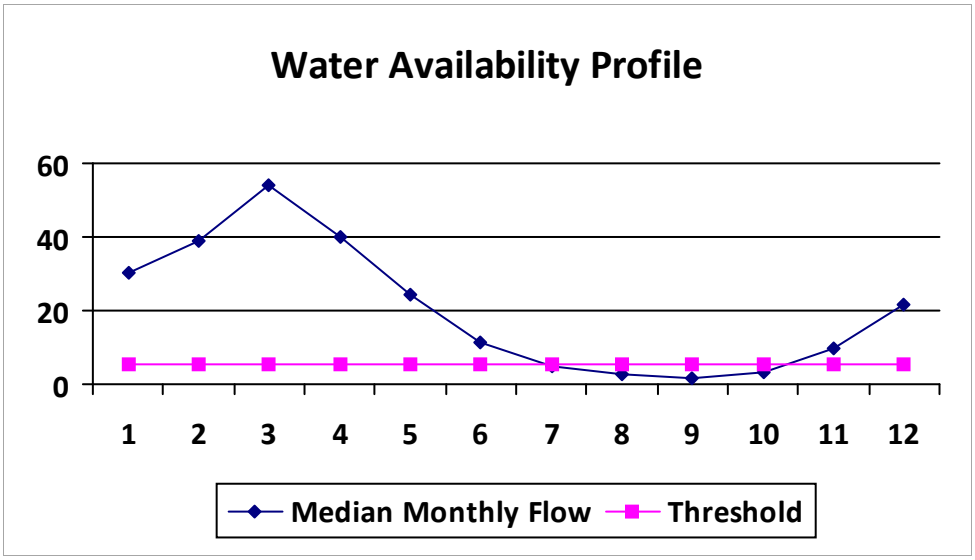
☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC
☐ Trout Stream? ☐ Tier 3? ☐ WH
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

Max. Pump rate (gpm): 2,000
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	30.52	10.71	20.18
2	38.95	10.71	28.61
3	54.02	10.71	43.68
4	40.10	10.71	29.76
5	24.44	10.71	14.10
6	11.13	10.71	0.79
7	4.92	10.71	-5.42
8	2.88	10.71	-7.46
9	1.83	10.71	-8.51
10	3.03	10.71	-7.31
11	9.52	10.71	-0.82
12	21.60	10.71	11.26



Water Availability Assessment of Location

Base Threshold (cfs)	4.17
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	1.04
Ungauged Stream Safety (cfs):	1.04
Min. Gauge Reading (cfs):	**61.46**
Passby at Location (cfs):	**6.25**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82044 | Source Name: Short Creek @ Cain / Susan L. Cain

Source Latitude: 40.155061

Source Longitude: -80.651431

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 16.58 | County: Ohio

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 3,360

Max. Simultaneous Trucks:

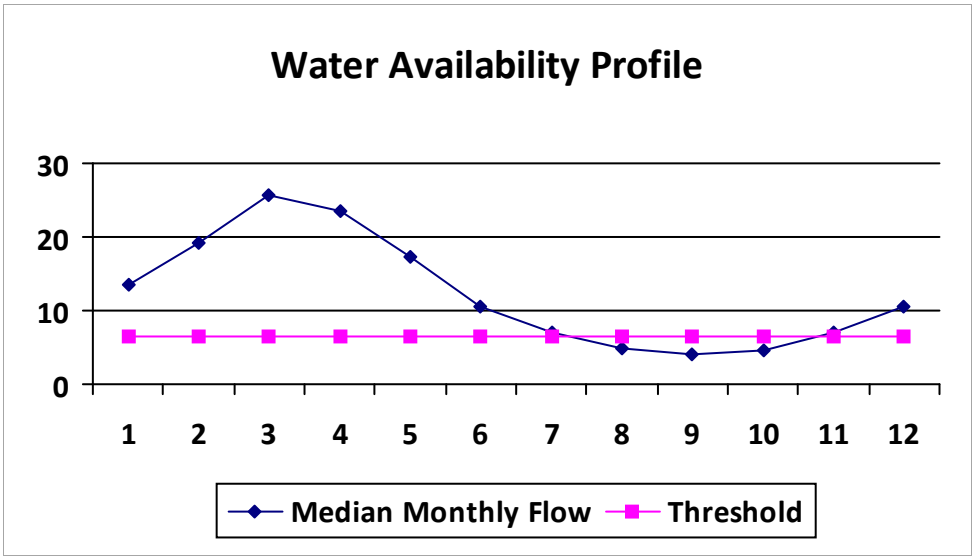
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	13.39	15.17	-1.60
2	19.18	15.17	4.20
3	25.67	15.17	10.68
4	23.44	15.17	8.45
5	17.30	15.17	2.31
6	10.56	15.17	-4.43
7	6.97	15.17	-8.01
8	4.87	15.17	-10.12
9	3.99	15.17	-11.00
10	4.71	15.17	-10.27
11	6.97	15.17	-8.02
12	10.55	15.17	-4.43



Water Availability Assessment of Location

Base Threshold (cfs)	5.12
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	7.49
Headwater Safety (cfs):	1.28
Ungauged Stream Safety (cfs):	1.28
Min. Gauge Reading (cfs):	**64.49**
Passby at Location (cfs):	**7.68**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82045 | Source Name: Middle Wheeling Creek @ Supler / Gregory and Peggy Supler

Source Latitude: 40.04409

Source Longitude: -80.55348

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 20.54 | County: Ohio

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,500

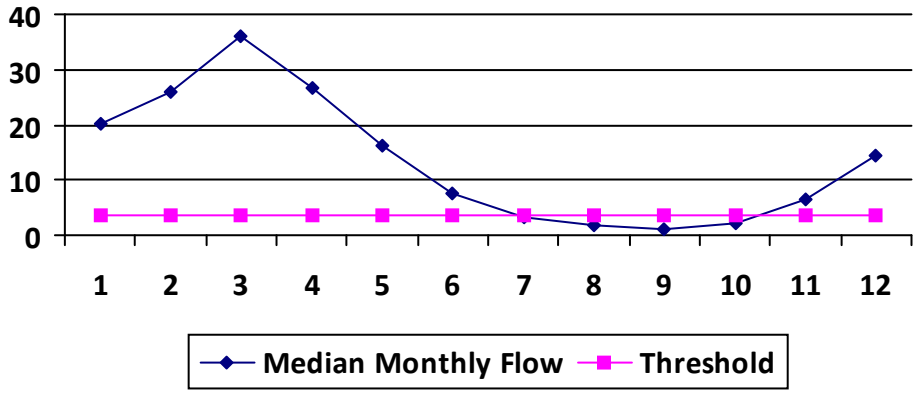
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	20.35	9.74	10.73
2	25.97	9.74	16.35
3	36.01	9.74	26.39
4	26.73	9.74	17.11
5	16.30	9.74	6.68
6	7.42	9.74	-2.20
7	3.28	9.74	-6.34
8	1.92	9.74	-7.70
9	1.22	9.74	-8.40
10	2.02	9.74	-7.60
11	6.35	9.74	-3.27
12	14.40	9.74	4.78



Water Availability Assessment of Location

Base Threshold (cfs)	2.78
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.69
Ungauged Stream Safety (cfs):	0.69
Min. Gauge Reading (cfs):	**62.57**
Passby at Location (cfs):	**4.17**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82046 | Source Name: Big Wheeling Creek @ Wheeling Staging Area
Fulton Storage, LLC

Source Latitude: 40.077019
Source Longitude: -80.713866

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 296.04 | County: Ohio

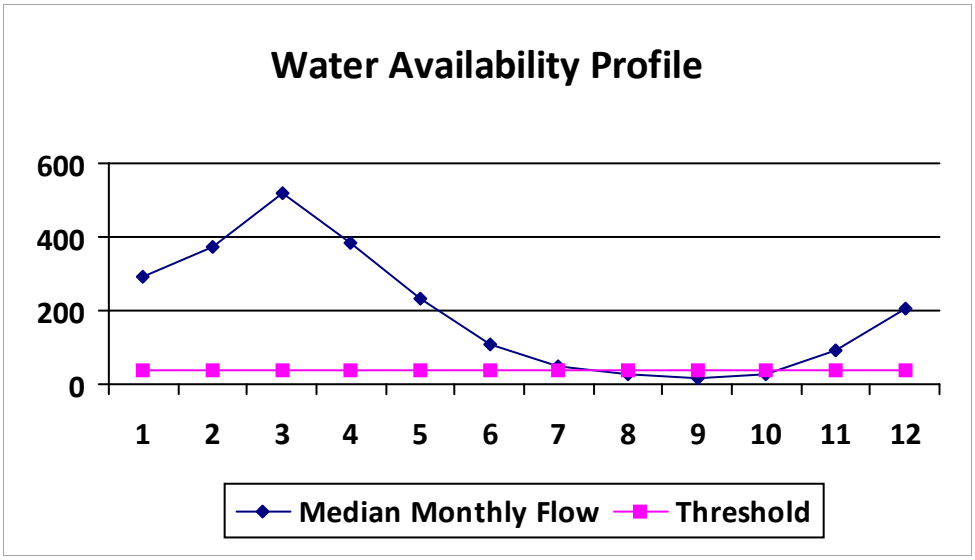
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm): 2,500
Max. Simultaneous Trucks: 0
Max. Truck pump rate (gpm) 0

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	293.29	45.60	247.82
2	374.26	45.60	328.78
3	519.05	45.60	473.58
4	385.31	45.60	339.84
5	234.87	45.60	189.40
6	106.90	45.60	61.43
7	47.24	45.60	1.77
8	27.63	45.60	-17.84
9	17.56	45.60	-27.91
10	29.09	45.60	-16.38
11	91.52	45.60	46.05
12	207.51	45.60	162.04



Water Availability Assessment of Location

Base Threshold (cfs)	40.03
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	**43.57**
Passby at Location (cfs):	**40.03**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82047 | Source Name: Ohio River @ Extraction B Panhandle
SWN Production Company, LLC

Source Latitude: 40.233469
Source Longitude: -80.654359

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Brooke

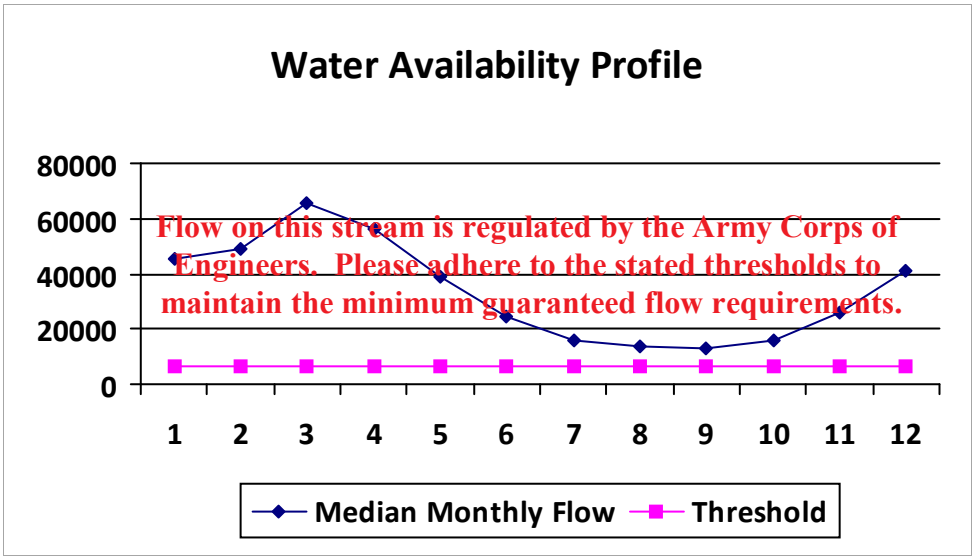
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Beech Bottom Water Dept.
- [x] Gauged Stream?

Max. Pump rate (gpm): 4,375
Max. Simultaneous Trucks: 0
Max. Truck pump rate (gpm) 0

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	9.75
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82048 | Source Name: WV Fork Fish Creek @ Francis / Loretta J. Francis

Source Latitude: 39.733295

Source Longitude: -80.579415

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 86.51 | County: Marshall

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 3,000

Max. Simultaneous Trucks:

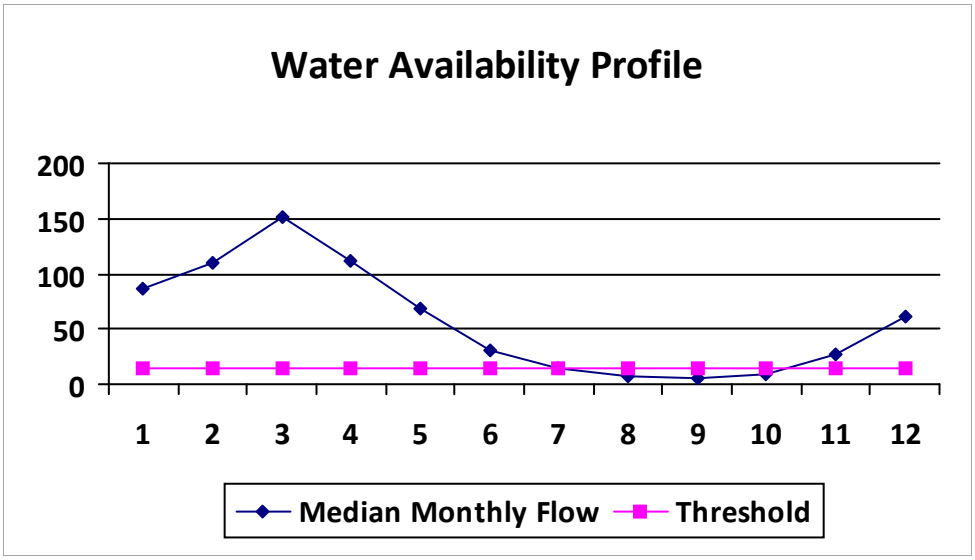
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	85.71	24.23	61.77
2	109.37	24.23	85.43
3	151.68	24.23	127.74
4	112.60	24.23	88.66
5	68.63	24.23	44.70
6	31.24	24.23	7.30
7	13.80	24.23	-10.13
8	8.07	24.23	-15.86
9	5.13	24.23	-18.80
10	8.50	24.23	-15.43
11	26.74	24.23	2.81
12	60.64	24.23	36.71



Water Availability Assessment of Location

Base Threshold (cfs)	11.70
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	6.68
Headwater Safety (cfs):	2.92
Ungauged Stream Safety (cfs):	2.92
Min. Gauge Reading (cfs):	**63.68**
Passby at Location (cfs):	**17.55**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82049 | Source Name: Ohio River @ Proctor Peacemaker

SWN Production Company, LLC

Source Latitude: 39.714299

Source Longitude: -80.825862

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Wetzel

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Beech Bottom Water Dept.
- [x] Gauged Stream?

Max. Pump rate (gpm): 6,000

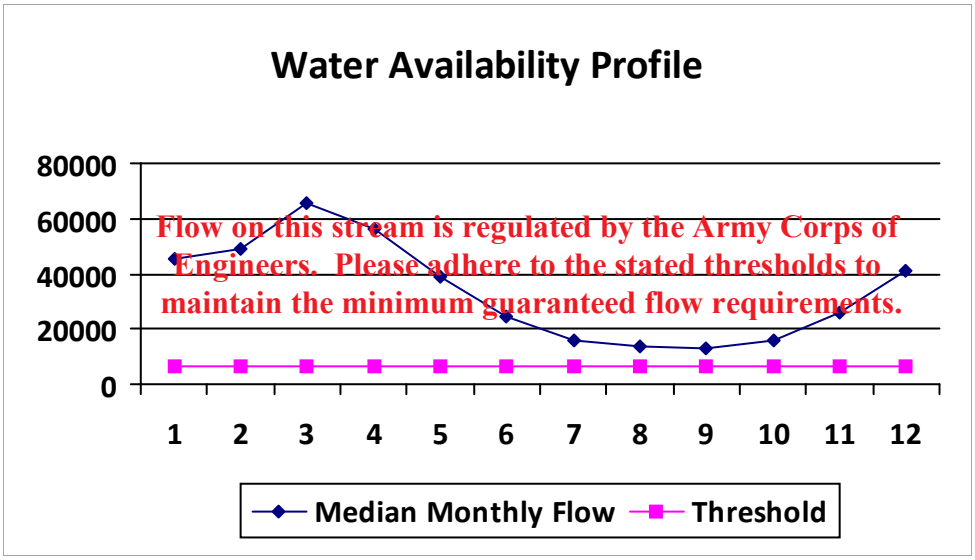
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	13.37
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82050 | Source Name: Booths Creek @ Reliance Minerals

Reliance Minerals, Inc.

Source Latitude: 39.530405

Source Longitude: -79.978079

HUC-8 Code: 5020003

Drainage Area (sq. mi.): 1.79 | County: Monongalia

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☑ Proximate PSD? Morgantown Utility Board
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

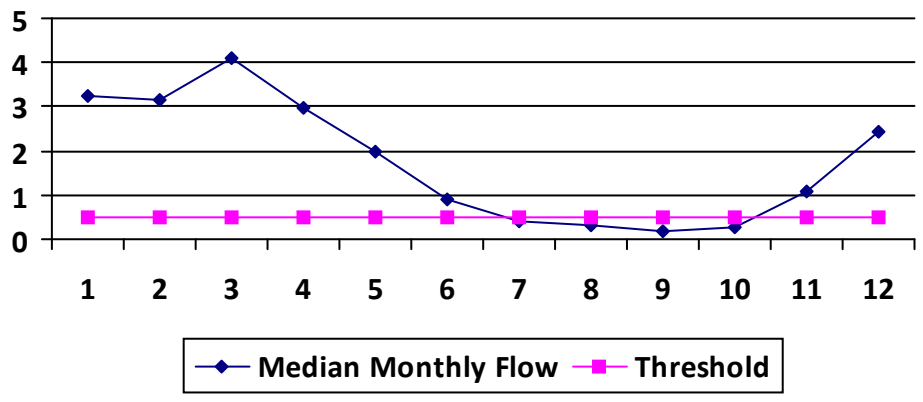
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3062500 DECKERS CREEK AT MORGANTOWN, WV

Drainage Area (sq. mi.): 63.20 | Gauge Threshold (cfs): 14

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	3.25	5.05	-1.69
2	3.16	5.05	-1.77
3	4.12	5.05	-0.82
4	2.98	5.05	-1.96
5	1.97	5.05	-2.97
6	0.89	5.05	-4.04
7	0.41	5.05	-4.53
8	0.30	5.05	-4.64
9	0.17	5.05	-4.76
10	0.29	5.05	-4.65
11	1.08	5.05	-3.86
12	2.43	5.05	-2.50



Water Availability Assessment of Location

Base Threshold (cfs)	0.40
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.10
Ungauged Stream Safety (cfs):	0.10
Min. Gauge Reading (cfs):	**25.46**
Passby at Location (cfs):	**0.59**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82051 | Source Name: West Virginia Fork of Fish Creek @ Van Scyoc With Israel D Van Scyoc

Source Latitude: 39.6908

Source Longitude: -80.4762

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 21.96 | County: Wetzel

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [ ] Gauged Stream?

Max. Pump rate (gpm): 2,000

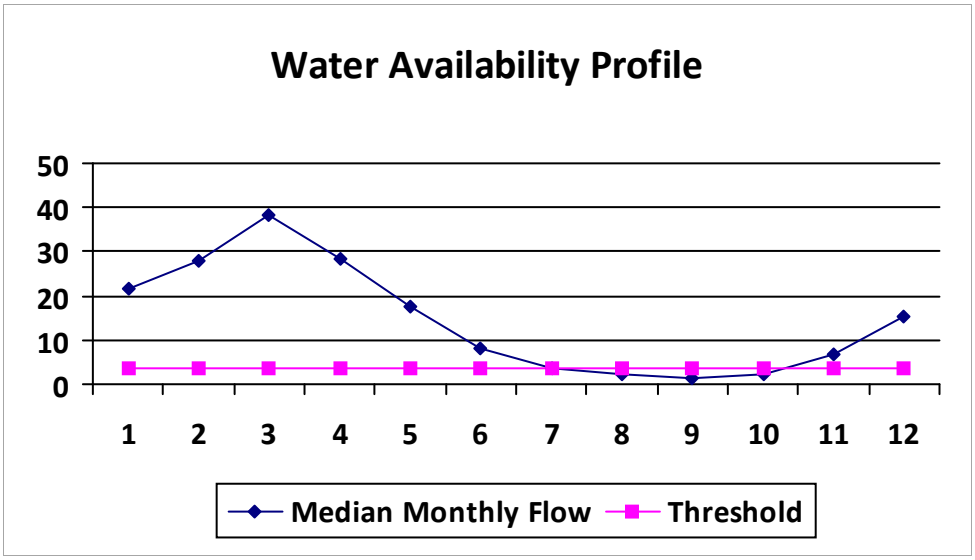
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	21.76	8.91	13.15
2	27.76	8.91	19.16
3	38.50	8.91	29.90
4	28.58	8.91	19.98
5	17.42	8.91	8.82
6	7.93	8.91	-0.67
7	3.50	8.91	-5.10
8	2.05	8.91	-6.55
9	1.30	8.91	-7.30
10	2.16	8.91	-6.44
11	6.79	8.91	-1.81
12	15.39	8.91	6.79



Water Availability Assessment of Location

Base Threshold (cfs)	2.97
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	1.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.74
Ungauged Stream Safety (cfs):	0.74
Min. Gauge Reading (cfs):	**61.46**
Passby at Location (cfs):	**5.45**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82052 | Source Name: Buffalo Creek @ Bethany VFD Withdrawal Site
Bethany Pike Volunteer Fire Department

Source Latitude: 40.253422
Source Longitude: -80.600319

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 158.69 | County: Brooke

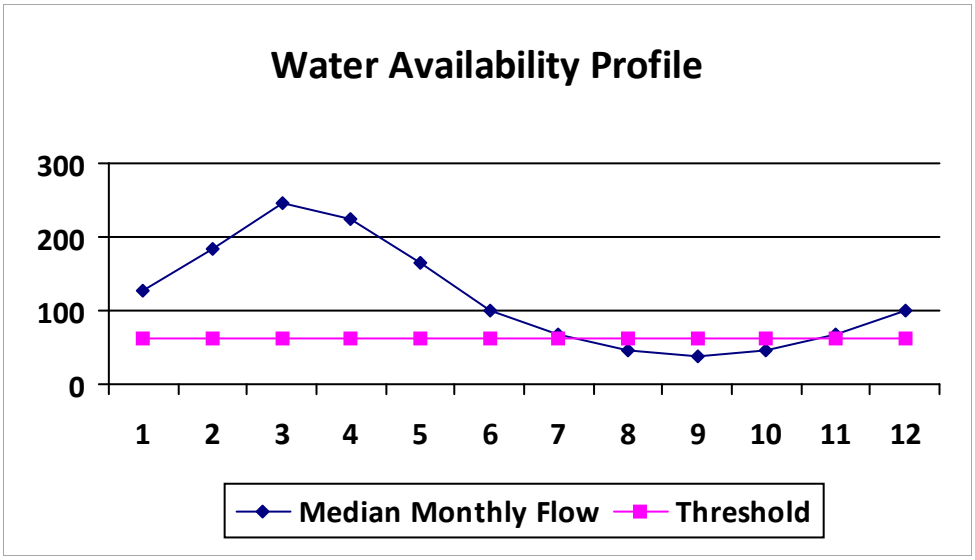
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [ ] Gauged Stream?

Max. Pump rate (gpm): 3,100
Max. Simultaneous Trucks: 0
Max. Truck pump rate (gpm) 0

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	128.18	81.44	46.75
2	183.60	81.44	102.17
3	245.67	81.44	164.24
4	224.32	81.44	142.88
5	165.56	81.44	84.12
6	101.06	81.44	19.63
7	66.76	81.44	-14.68
8	46.57	81.44	-34.86
9	38.15	81.44	-43.29
10	45.11	81.44	-36.32
11	66.70	81.44	-14.73
12	101.01	81.44	19.57



Water Availability Assessment of Location

Base Threshold (cfs)	49.03
Upstream Demand (cfs):	13.25
Downstream Demand (cfs):	0.00
Pump rate (cfs):	6.91
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	12.26
Min. Gauge Reading (cfs):	**67.66**
Passby at Location (cfs):	**61.28**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82053 | Source Name: Whiteday Creek @ Sorine Withdrawal Site

Andrew Sorine, Jr.

Source Latitude: 39.472311

Source Longitude: -79.977123

HUC-8 Code: 5020003

Drainage Area (sq. mi.): 12.29 | County: Marion

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☑ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

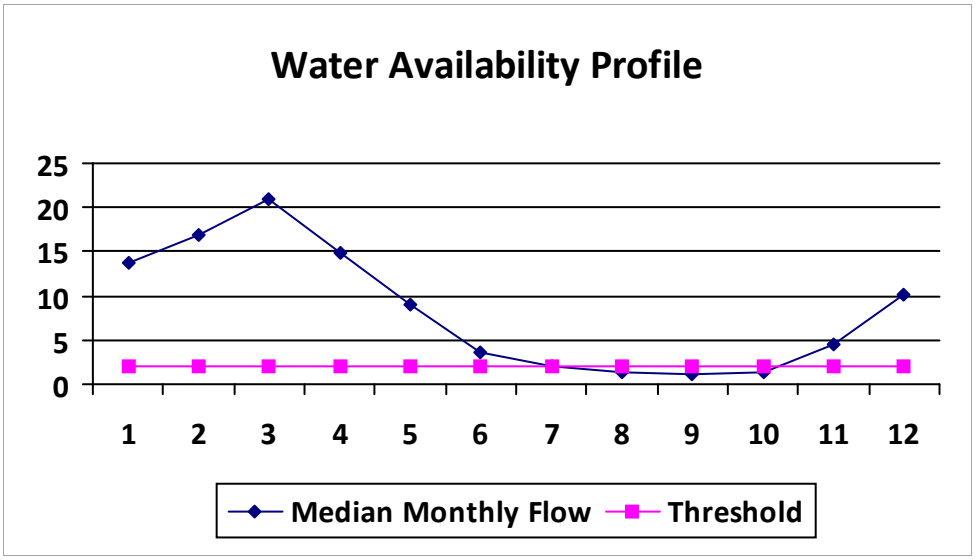
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 3061500 | BUFFALO CREEK AT BARRACKVILLE, WV

Drainage Area (sq. mi.): 116.00 | Gauge Threshold (cfs): 15

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	13.77	6.84	7.02
2	16.96	6.84	10.21
3	20.99	6.84	14.24
4	14.90	6.84	8.15
5	9.00	6.84	2.25
6	3.55	6.84	-3.20
7	1.98	6.84	-4.77
8	1.38	6.84	-5.37
9	1.02	6.84	-5.73
10	1.31	6.84	-5.44
11	4.54	6.84	-2.21
12	10.18	6.84	3.43



Water Availability Assessment of Location

Base Threshold (cfs)	1.59
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.40
Ungauged Stream Safety (cfs):	0.40
Min. Gauge Reading (cfs):	**26.96**
Passby at Location (cfs):	**2.38**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82054 | Source Name: Buffalo Creek @ DNR
SWN Water Resources Company, LLC

Source Latitude: 40.19386
Source Longitude: -80.525796

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 98.28 | County: Brooke

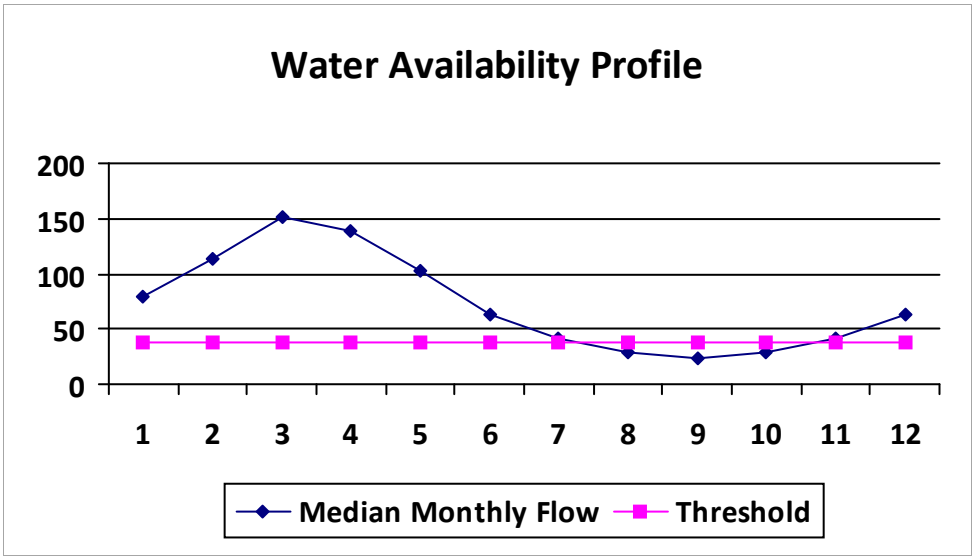
- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 3,200
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	79.39	45.08	34.65
2	113.71	45.08	68.97
3	152.15	45.08	107.41
4	138.92	45.08	94.18
5	102.53	45.08	57.79
6	62.59	45.08	17.85
7	41.34	45.08	-3.40
8	28.84	45.08	-15.90
9	23.62	45.08	-21.12
10	27.94	45.08	-16.80
11	41.31	45.08	-3.43
12	62.56	45.08	17.82



Water Availability Assessment of Location

Base Threshold (cfs)	30.36
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	5.57
Pump rate (cfs):	7.13
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	7.59
Min. Gauge Reading (cfs):	**54.63**
Passby at Location (cfs):	**43.52**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82055 | Source Name: Fish Creek @ Gribben
Revocable Living Trust of M. Peggy Gribben

Source Latitude: 39.753271
Source Longitude: -80.597913

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 141.61 | County: Marshall

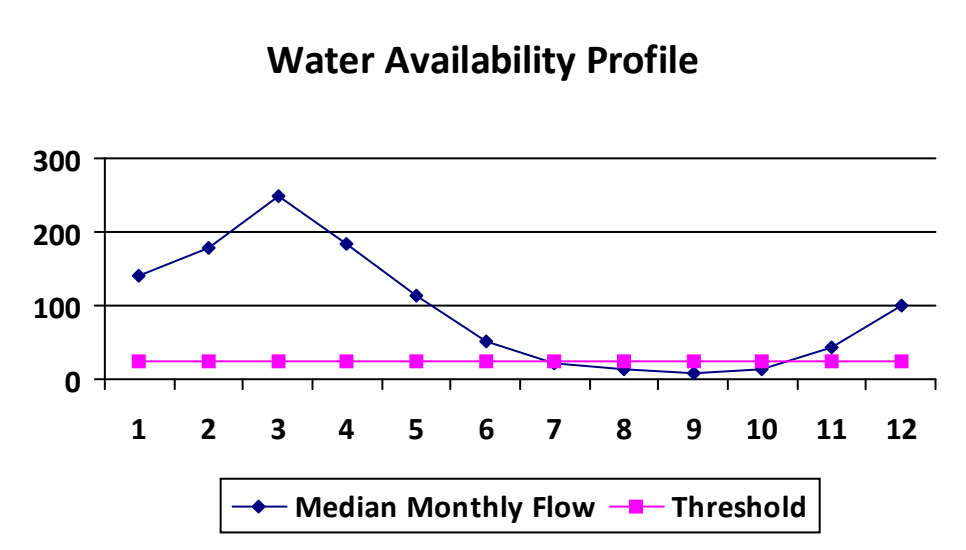
- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 4,200
Max. Simultaneous Trucks: 0
Max. Truck pump rate (gpm) 0

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	140.29	33.30	107.15
2	179.02	33.30	145.88
3	248.28	33.30	215.14
4	184.31	33.30	151.17
5	112.35	33.30	79.20
6	51.13	33.30	17.99
7	22.60	33.30	-10.55
8	13.22	33.30	-19.93
9	8.40	33.30	-24.75
10	13.92	33.30	-19.23
11	43.78	33.30	10.63
12	99.26	33.30	66.12



Water Availability Assessment of Location

Base Threshold (cfs)	19.15
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.79
Min. Gauge Reading (cfs):	**56.86**
Passby at Location (cfs):	**23.94**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP	02427	API/ID Number	see overview	Operator:	SWN Production Company, LLC
Plan Type:	Well Pad		Charles Jamison MSH Well Pad		

Source ID: 82056 Source Name: Buffalo Creek @ Forney
Forney & Sons Holding Company, LLC

Source Latitude: 40.193453
Source Longitude: -80.52175

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 98.28 County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

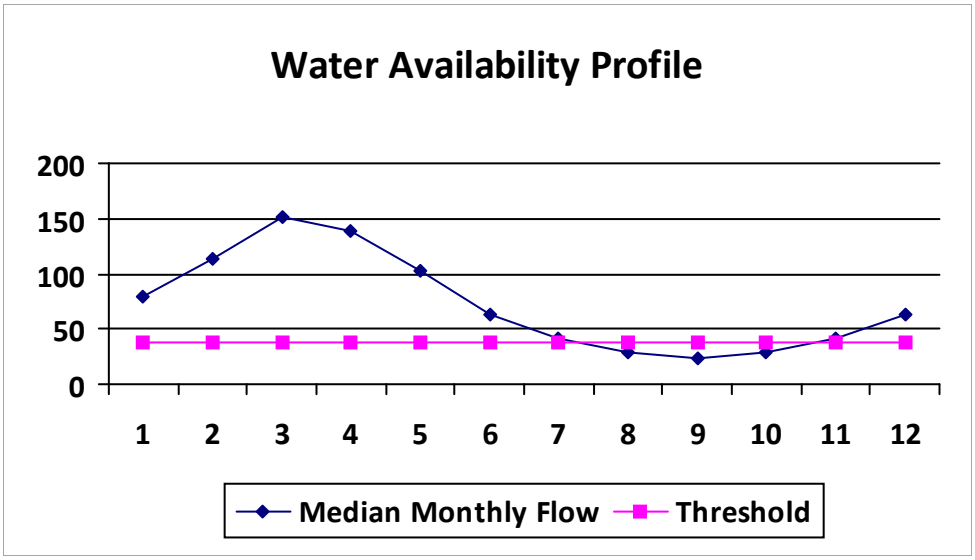
Max. Pump rate (gpm): 2,500
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	79.39	43.52	36.21
2	113.71	43.52	70.53
3	152.15	43.52	108.97
4	138.92	43.52	95.74
5	102.53	43.52	59.35
6	62.59	43.52	19.41
7	41.34	43.52	-1.84
8	28.84	43.52	-14.34
9	23.62	43.52	-19.56
10	27.94	43.52	-15.24
11	41.31	43.52	-1.87
12	62.56	43.52	19.37



Water Availability Assessment of Location

Base Threshold (cfs)	30.36
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	5.57
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	7.59
Min. Gauge Reading (cfs):	**53.07**
Passby at Location (cfs):	**43.52**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82057 | Source Name: Buffalo Creek @ Fuchs / Beverly Fuchs

Source Latitude: 40.258863

Source Longitude: -80.60337

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 163.22 | County: Brooke

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [ ] Gauged Stream?

Max. Pump rate (gpm): 5,250

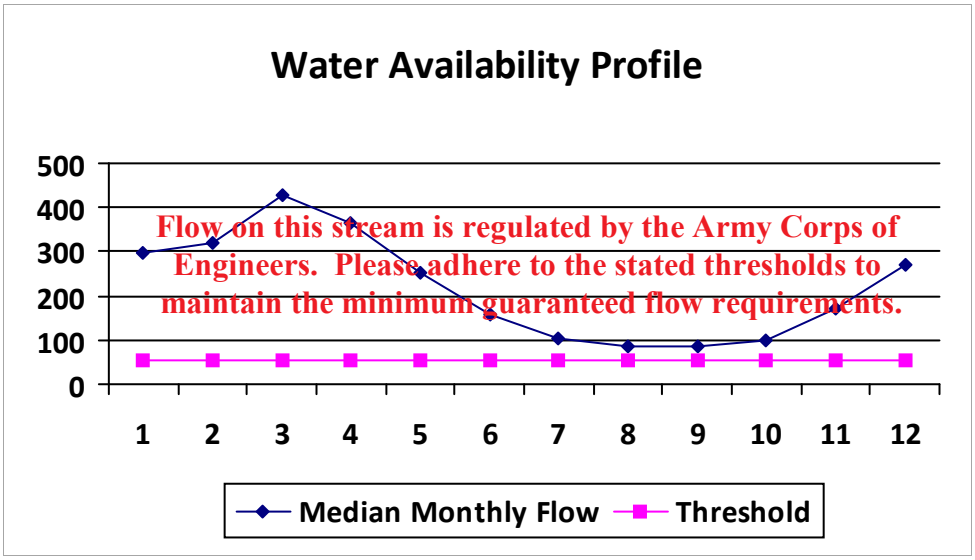
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	298.37	-	-
2	321.22	-	-
3	428.94	-	-
4	366.27	-	-
5	252.66	-	-
6	158.65	-	-
7	104.46	-	-
8	87.49	-	-
9	83.57	-	-
10	101.20	-	-
11	171.71	-	-
12	269.64	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	11.70
Headwater Safety (cfs):	10.56
Ungauged Stream Safety (cfs):	10.56
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82058 | Source Name: Buffalo Creek @ Greathouse Withdrawal Site / Linda Greathouse

Source Latitude: 40.20895

Source Longitude: -80.60105

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 138.56 | County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 3,300

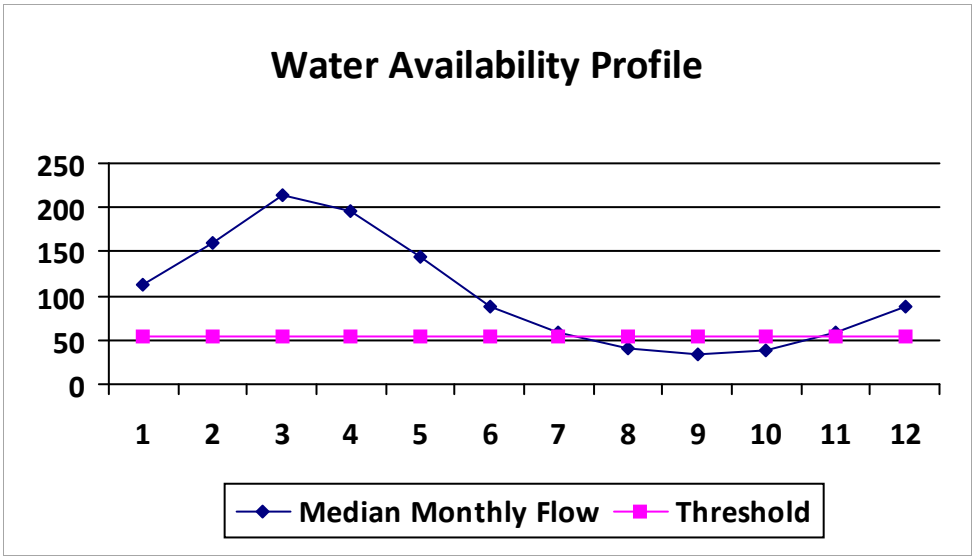
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	111.92	66.43	45.74
2	160.31	66.43	94.13
3	214.51	66.43	148.32
4	195.86	66.43	129.68
5	144.56	66.43	78.37
6	88.24	66.43	22.06
7	58.29	66.43	-7.90
8	40.66	66.43	-25.52
9	33.31	66.43	-32.88
10	39.39	66.43	-26.79
11	58.24	66.43	-7.94
12	88.19	66.43	22.01



Water Availability Assessment of Location

Base Threshold (cfs)	42.81
Upstream Demand (cfs):	5.57
Downstream Demand (cfs):	1.00
Pump rate (cfs):	7.35
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	10.70
Min. Gauge Reading (cfs):	**60.42**
Passby at Location (cfs):	**54.51**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82059 | Source Name: Buffalo Creek @ Labelle Farms / Steve Paul

Source Latitude: 40.204444

Source Longitude: -80.598645

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 136.79 | County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 5,250

Max. Simultaneous Trucks: 0

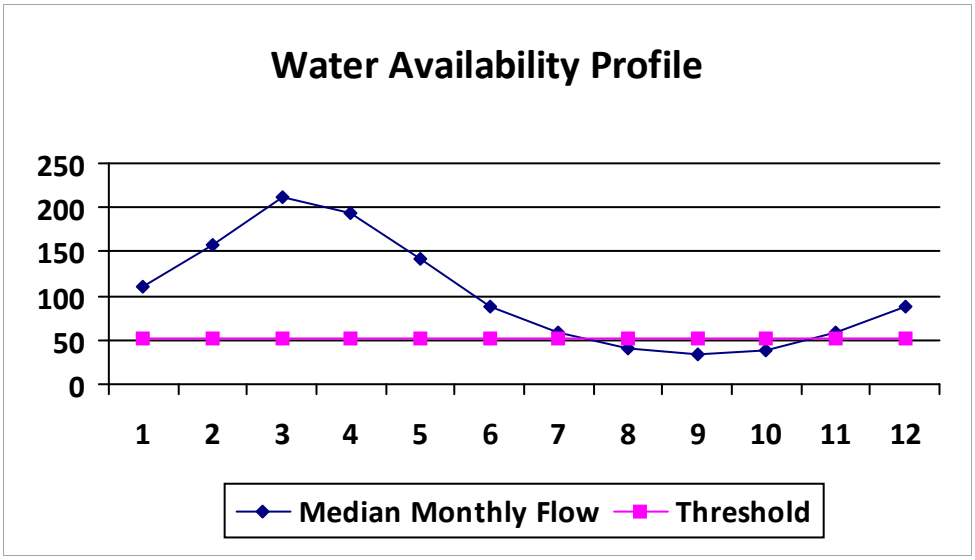
Max. Truck pump rate (gpm) 0

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	110.49	64.52	46.05
2	158.27	64.52	93.82
3	211.77	64.52	147.33
4	193.36	64.52	128.92
5	142.71	64.52	78.27
6	87.12	64.52	22.67
7	57.54	64.52	-6.90
8	40.14	64.52	-24.30
9	32.88	64.52	-31.56
10	38.89	64.52	-25.55
11	57.50	64.52	-6.95
12	87.07	64.52	22.62



Water Availability Assessment of Location

Base Threshold (cfs)	42.26
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.98
Pump rate (cfs):	11.70
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	10.57
Min. Gauge Reading (cfs):	**59.20**
Passby at Location (cfs):	**53.81**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82060 | Source Name: Buffalo Creek @ Worthley Withdrawal Site
Kimberly C. Worthley

Source Latitude: 40.210978
Source Longitude: -80.548779

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 113.49 | County: Brooke

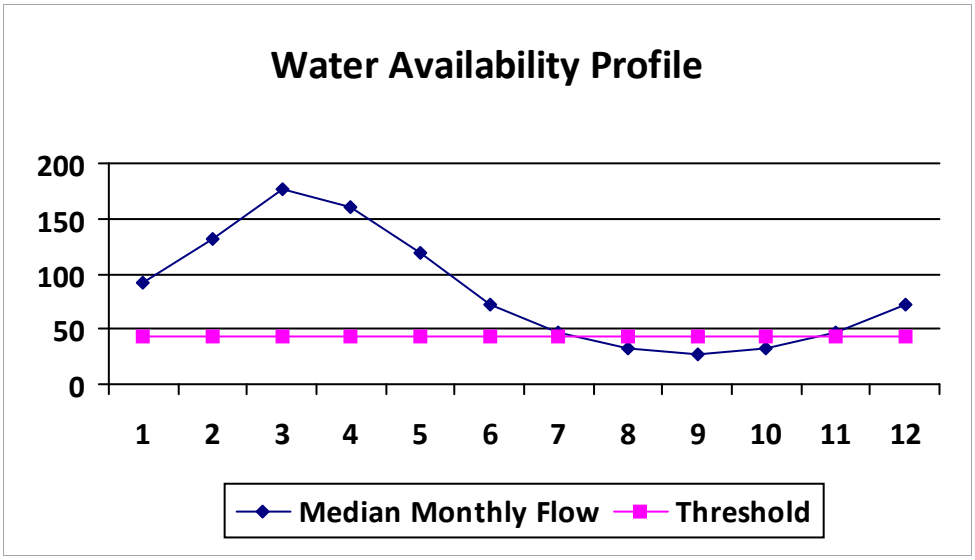
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [x] Proximate PSD? Hammond PSD
- [ ] Gauged Stream?

Max. Pump rate (gpm): 2,500
Max. Simultaneous Trucks: 0
Max. Truck pump rate (gpm) 0

Reference Gauge: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	91.67	49.40	42.38
2	131.31	49.40	82.01
3	175.70	49.40	126.40
4	160.42	49.40	111.13
5	118.40	49.40	69.11
6	72.28	49.40	22.98
7	47.74	49.40	-1.55
8	33.31	49.40	-15.99
9	27.28	49.40	-22.02
10	32.26	49.40	-17.03
11	47.70	49.40	-1.59
12	72.24	49.40	22.94



Water Availability Assessment of Location

Base Threshold (cfs)	35.06
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	1.00
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	8.77
Min. Gauge Reading (cfs):	**53.07**
Passby at Location (cfs):	**44.83**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82061 | Source Name: Buffalo Creek @ WVDOH
West Virginia Division of Highways

Source Latitude: 40.258863
Source Longitude: -80.60337

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 163.22 | County: Brooke

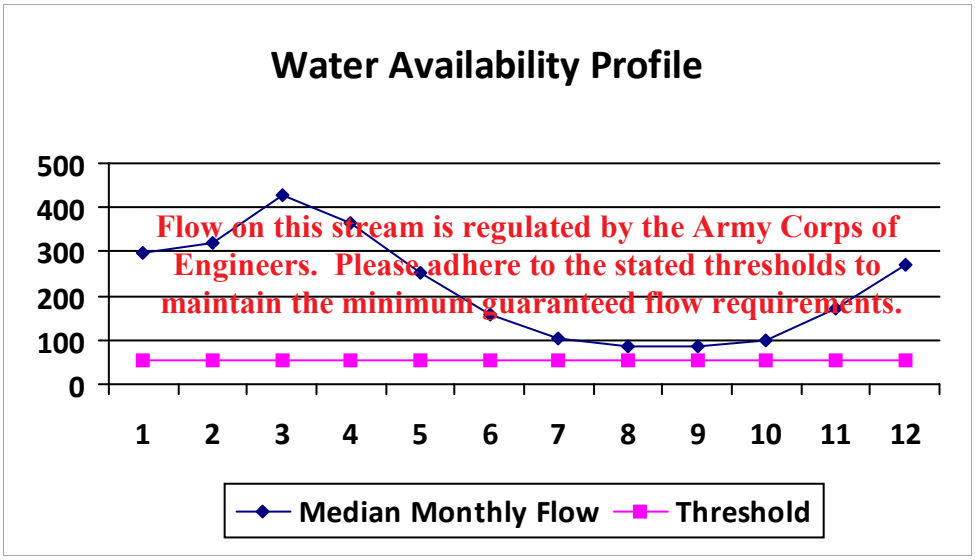
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [ ] Gauged Stream?

Max. Pump rate (gpm): 3,360
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	298.37	-	-
2	321.22	-	-
3	428.94	-	-
4	366.27	-	-
5	252.66	-	-
6	158.65	-	-
7	104.46	-	-
8	87.49	-	-
9	83.57	-	-
10	101.20	-	-
11	171.71	-	-
12	269.64	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	7.49
Headwater Safety (cfs):	10.56
Ungauged Stream Safety (cfs):	10.56
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82062 | Source Name: Buffalo Creek @ Zatta / Edward Zatta

Source Latitude: 40.253588

Source Longitude: -80.600254

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 158.69 | County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,520

Max. Simultaneous Trucks: 0

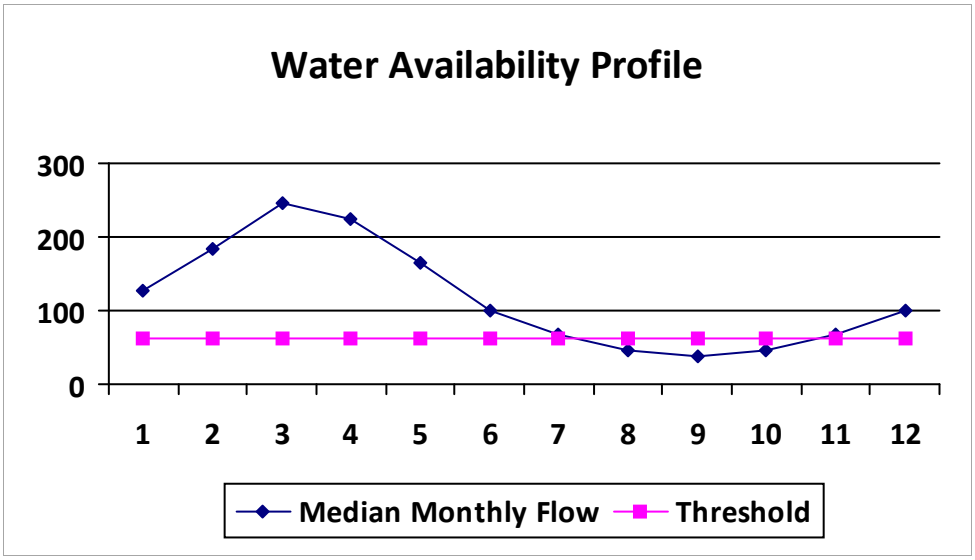
Max. Truck pump rate (gpm) 0

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	128.18	80.15	48.04
2	183.60	80.15	103.46
3	245.67	80.15	165.53
4	224.32	80.15	144.17
5	165.56	80.15	85.42
6	101.06	80.15	20.92
7	66.76	80.15	-13.39
8	46.57	80.15	-33.57
9	38.15	80.15	-42.00
10	45.11	80.15	-35.03
11	66.70	80.15	-13.44
12	101.01	80.15	20.87



Water Availability Assessment of Location

Base Threshold (cfs)	49.03
Upstream Demand (cfs):	13.25
Downstream Demand (cfs):	0.00
Pump rate (cfs):	5.61
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	12.26
Min. Gauge Reading (cfs):	**66.36**
Passby at Location (cfs):	**61.28**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82063 | Source Name: Cross Creek @ Bullock Withdrawal Site / Isabelle Bullock

Source Latitude: 40.30735

Source Longitude: -80.569317

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 74.66 | County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,500

Max. Simultaneous Trucks:

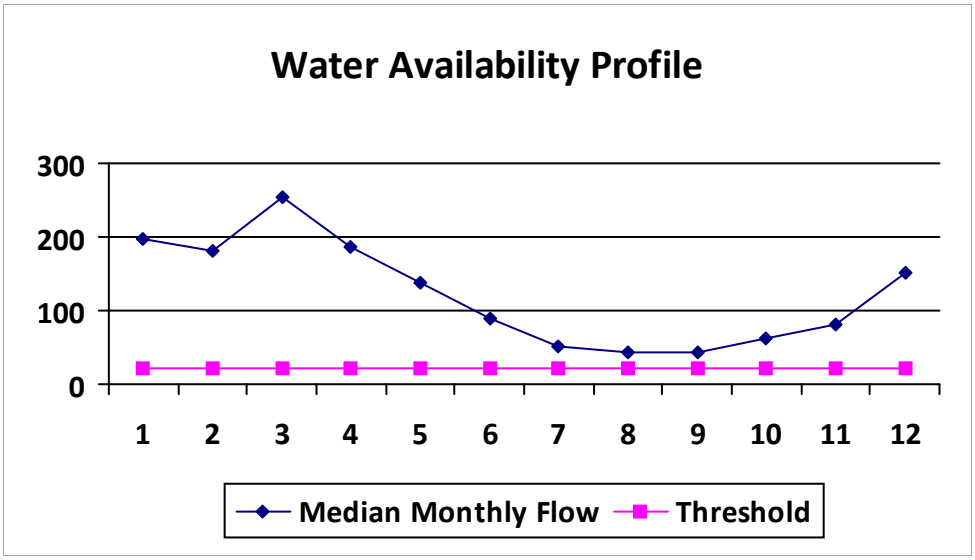
Max. Truck pump rate (gpm)

Reference Gauge: 3110830 | KINGS CREEK AT WEIRTON, WV

Drainage Area (sq. mi.): 48.90

Gauge Threshold (cfs): 11

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	195.97	26.56	169.48
2	180.05	26.56	153.56
3	253.89	26.56	227.40
4	186.52	26.56	160.03
5	138.84	26.56	112.35
6	89.57	26.56	63.08
7	50.78	26.56	24.29
8	42.06	26.56	15.57
9	43.77	26.56	17.28
10	61.47	26.56	34.98
11	81.23	26.56	54.74
12	151.05	26.56	124.56



Water Availability Assessment of Location

Base Threshold (cfs)	16.79
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.20
Min. Gauge Reading (cfs):	**19.32**
Passby at Location (cfs):	**20.99**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82064 | Source Name: Cross Creek @ DNR / WVDNR

Source Latitude: 40.300536

Source Longitude: -80.542229

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 68.58 | County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 3,000

Max. Simultaneous Trucks:

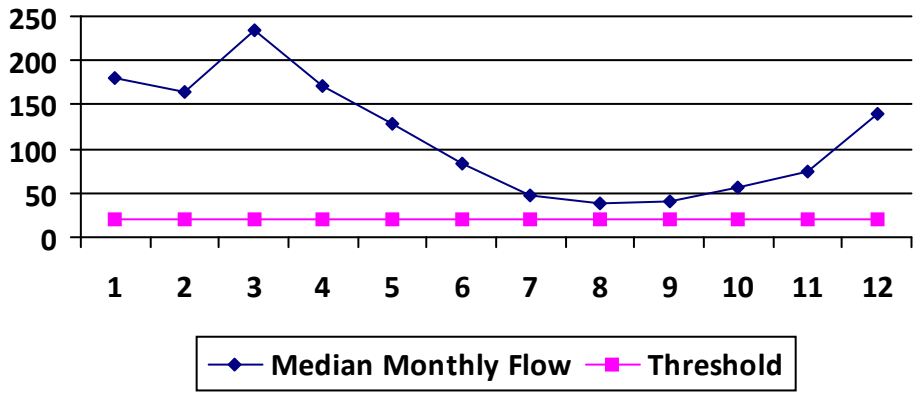
Max. Truck pump rate (gpm)

Reference Gauge: 3110830 | KINGS CREEK AT WEIRTON, WV

Drainage Area (sq. mi.): 48.90

Gauge Threshold (cfs): 11

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	180.01	25.97	154.07
2	165.39	25.97	139.45
3	233.21	25.97	207.27
4	171.33	25.97	145.39
5	127.53	25.97	101.59
6	82.28	25.97	56.34
7	46.64	25.97	20.70
8	38.64	25.97	12.69
9	40.20	25.97	14.26
10	56.46	25.97	30.52
11	74.61	25.97	48.67
12	138.75	25.97	112.81



Water Availability Assessment of Location

Base Threshold (cfs)	15.43
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	6.68
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	3.86
Min. Gauge Reading (cfs):	**20.43**
Passby at Location (cfs):	**19.28**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82065 | Source Name: Cross Creek @ Norfolk and Western Railway / Wheeling & Lake Erie Railway Company

Source Latitude: 40.30802

Source Longitude: -80.599193

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 79.78 | County: Brooke

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [ ] Gauged Stream?

Max. Pump rate (gpm): 5,250

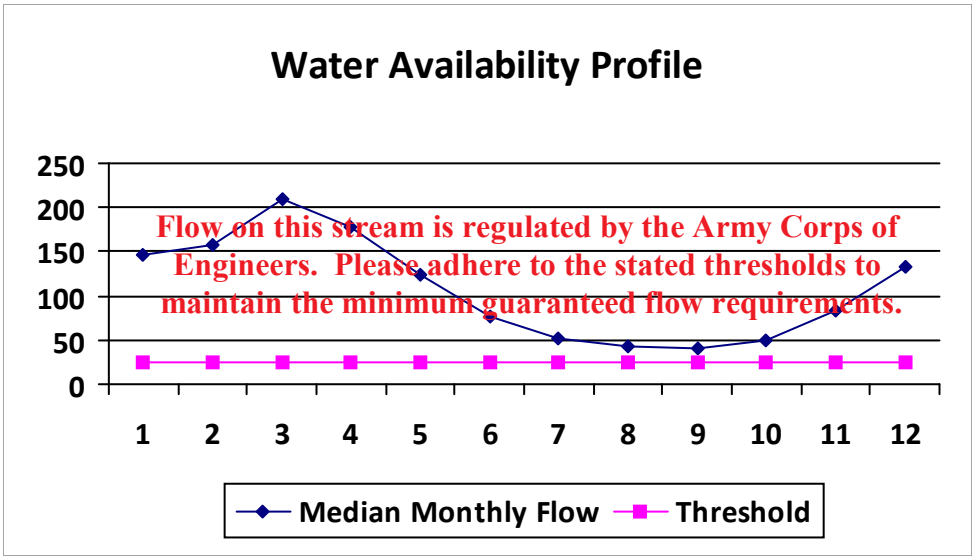
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	145.84	-	-
2	157.01	-	-
3	209.66	-	-
4	179.03	-	-
5	123.50	-	-
6	77.55	-	-
7	51.06	-	-
8	42.76	-	-
9	40.85	-	-
10	49.46	-	-
11	83.93	-	-
12	131.80	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	11.70
Headwater Safety (cfs):	5.16
Ungauged Stream Safety (cfs):	5.16
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82066 | Source Name: Cross Creek @ Palizzi / Campbell Palizzi

Source Latitude: 40.302427

Source Longitude: -80.582753

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 79.78 | County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

Max. Simultaneous Trucks:

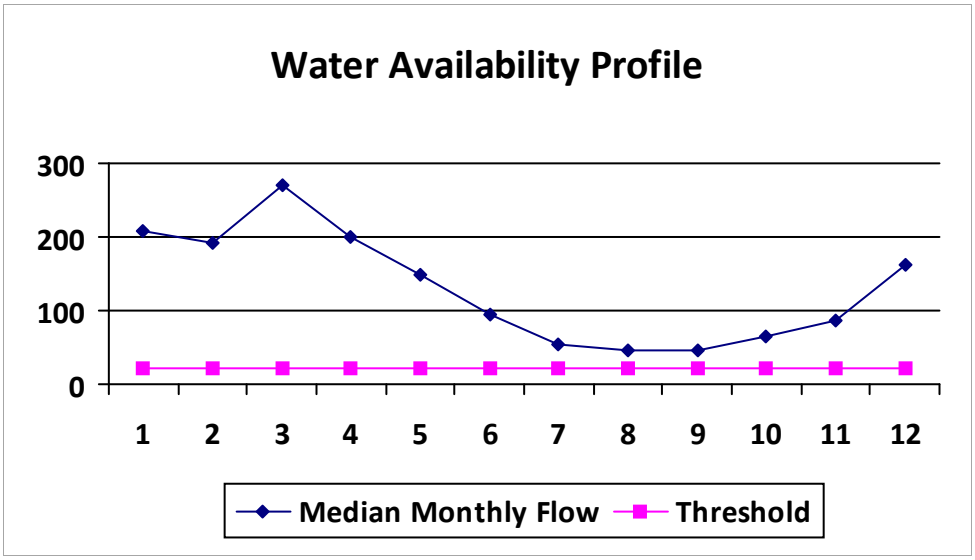
Max. Truck pump rate (gpm)

Reference Gauge: 3110830 | KINGS CREEK AT WEIRTON, WV

Drainage Area (sq. mi.): 48.90

Gauge Threshold (cfs): 11

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	209.41	31.79	177.64
2	192.40	31.79	160.62
3	271.30	31.79	239.53
4	199.31	31.79	167.54
5	148.36	31.79	116.59
6	95.71	31.79	63.94
7	54.26	31.79	22.49
8	44.94	31.79	13.17
9	46.77	31.79	14.99
10	65.68	31.79	33.91
11	86.80	31.79	55.02
12	161.41	31.79	129.64



Water Availability Assessment of Location

Base Threshold (cfs)	17.95
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.49
Min. Gauge Reading (cfs):	**23.11**
Passby at Location (cfs):	**22.43**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP	02427	API/ID Number	see overview	Operator:	SWN Production Company, LLC
Plan Type:	Well Pad		Charles Jamison MSH Well Pad		

Source ID: 82067 Source Name: WV Fork Fish Creek @ Derby
Steven Derby

Source Latitude: 39.709329
Source Longitude: -80.536079

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 48.62 County: Wetzel

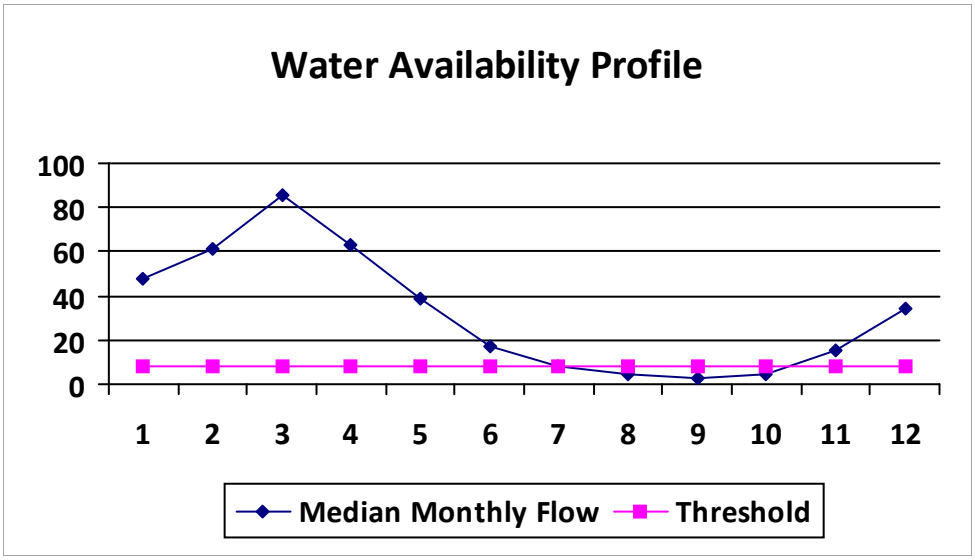
- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 4,200
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	48.17	20.22	28.06
2	61.47	20.22	41.36
3	85.25	20.22	65.14
4	63.28	20.22	43.18
5	38.57	20.22	18.47
6	17.56	20.22	-2.55
7	7.76	20.22	-12.35
8	4.54	20.22	-15.57
9	2.88	20.22	-17.22
10	4.78	20.22	-15.33
11	15.03	20.22	-5.08
12	34.08	20.22	13.97



Water Availability Assessment of Location

Base Threshold (cfs)	6.57
Upstream Demand (cfs):	1.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	9.36
Headwater Safety (cfs):	1.64
Ungauged Stream Safety (cfs):	1.64
Min. Gauge Reading (cfs):	**67.36**
Passby at Location (cfs):	**9.86**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82068 | Source Name: Fish Creek @ Guzek / Walter A. Guzek

Source Latitude: 39.753021

Source Longitude: -80.613941

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 144.57 | County: Marshall

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

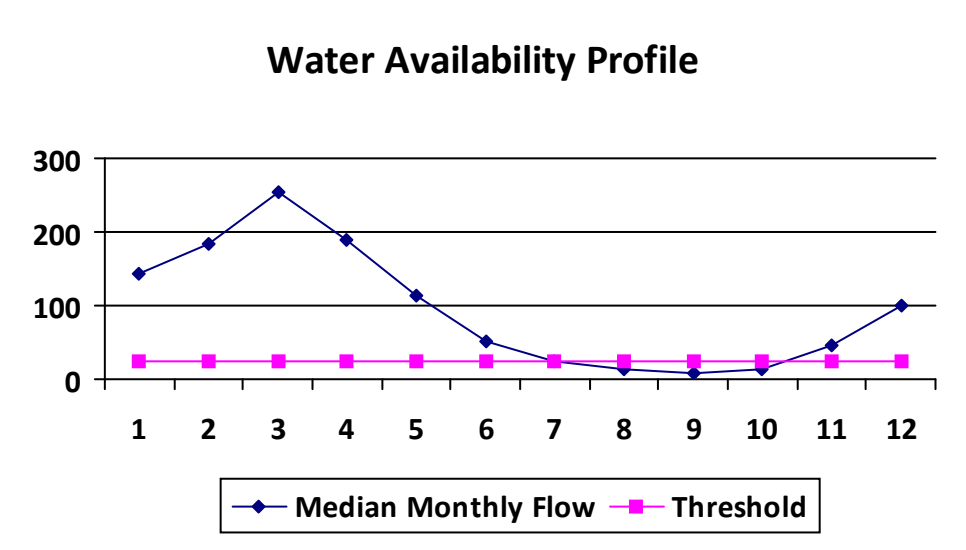
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	143.23	33.80	109.60
2	182.77	33.80	149.14
3	253.47	33.80	219.85
4	188.16	33.80	154.54
5	114.70	33.80	81.07
6	52.20	33.80	18.58
7	23.07	33.80	-10.56
8	13.49	33.80	-20.13
9	8.57	33.80	-25.05
10	14.21	33.80	-19.42
11	44.69	33.80	11.07
12	101.34	33.80	67.71



Water Availability Assessment of Location

Base Threshold (cfs)	19.55
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.89
Min. Gauge Reading (cfs):	**56.86**
Passby at Location (cfs):	**24.44**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82069 | Source Name: Little Wheeling Creek @ Edge Withdrawal Site / Alice Mae Edge

Source Latitude: 40.098

Source Longitude: -80.5558

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 4.26 | County: Ohio

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

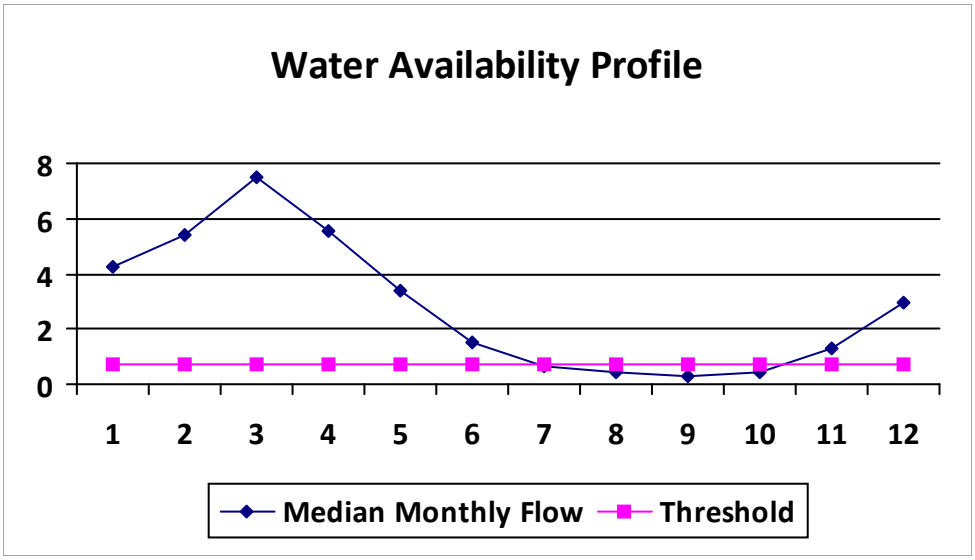
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	4.22	5.32	-0.90
2	5.39	5.32	0.26
3	7.47	5.32	2.34
4	5.54	5.32	0.42
5	3.38	5.32	-1.74
6	1.54	5.32	-3.59
7	0.68	5.32	-4.44
8	0.40	5.32	-4.73
9	0.25	5.32	-4.87
10	0.42	5.32	-4.71
11	1.32	5.32	-3.81
12	2.99	5.32	-2.14



Water Availability Assessment of Location

Base Threshold (cfs)	0.58
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.14
Ungauged Stream Safety (cfs):	0.14
Min. Gauge Reading (cfs):	**61.46**
Passby at Location (cfs):	**0.86**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Water Management Plan:
Secondary Water Sources

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

MODIFICATION **Effective: 12/14/2021**

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Centralized Freshwater Impoundment

Source ID: 82099 Source Name: Ballato Freshwater Impoundment

Source Lat: 40.308611 Source Long: -80.565028 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-1877

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82100 Source Name: Barry Greathouse Freshwater Impoundment

Source Lat: 40.18831 Source Long: -80.63714 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1869**

Source ID: 82102 Source Name: Corbin Freshwater Impoundment

Source Lat: 40.233122 Source Long: -80.524025 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1870**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82103 Source Name: Durig A Freshwater Impoundment

Source Lat: 39.715905 Source Long: -80.636785 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1862**

Source ID: 82104 Source Name: Durig B Freshwater Impoundment

Source Lat: 38.8022 Source Long: -80.638491 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1863**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82105 Source Name: Elmer Freshwater Impoundment

Source Lat: 38.831351 Source Long: -80.276326 County: Upshur

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1847**

Source ID: 82106 Source Name: Farmer Freshwater Impoundment

Source Lat: 40.146183 Source Long: -80.573857 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1871**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82107 Source Name: Ferrell Freshwater Impoundment

Source Lat: 40.04445 Source Long: -80.53023 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1874**

Source ID: 82108 Source Name: Heartwood Forestland Freshwater Impoundment

Source Lat: 39.123961 Source Long: -81.098573 County: Ritchie

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1878**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

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•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82109 Source Name: Helen Miller Freshwater Impoundment

Source Lat: 40.085722 Source Long: -80.623333 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1059**

Source ID: 82110 Source Name: Hickman Freshwater Impoundment

Source Lat: 40.041361 Source Long: -80.548944 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1875**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82115 Source Name: Hupp 1 Freshwater Impoundment

Source Lat: 40.175058 Source Long: -80.567622 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1873**

Source ID: 82116 Source Name: Hupp 2 Freshwater Impoundment

Source Lat: 40.175069 Source Long: -80.578206 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1058**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82117 Source Name: Kelley #2 Freshwater Impoundment

Source Lat: 39.681388 Source Long: -80.701113 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1865**

Source ID: 82118 Source Name: Kestner Freshwater Impoundment

Source Lat: 40.147904 Source Long: -80.539568 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1872**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82119 Source Name: Linda Greathouse Freshwater Impoundment

Source Lat: 40.205416 Source Long: -80.608805 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1876**

Source ID: 82120 Source Name: Lipps Freshwater Impoundment

Source Lat: 38.8446 Source Long: -80.3413 County: Upshur

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1850**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82121 Source Name: McGlumphy Freshwater Impoundment

Source Lat: 40.152588 Source Long: -80.587667 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1060**

Source ID: 82122 Source Name: Messenger Freshwater Impoundment

Source Lat: 393674857 Source Long: -80.689887 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1859**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82123 Source Name: Reliance Minerals A Freshwater Impoundment

Source Lat: 39.521316 Source Long: -79.973907 County: Monongalia

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1868**

Source ID: 82124 Source Name: Reliance Minerals B Freshwater Impoundment

Source Lat: 39.524571 Source Long: -79.974529 County: Monongalia

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1867**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82125 Source Name: Ross #2 Freshwater Impoundment

Source Lat: 38.9839 Source Long: -80.2628 County: Upshur

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1851**

Source ID: 82126 Source Name: Stern Freshwater Impoundment

Source Lat: 39.733943 Source Long: -80.64695 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1826**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82127 Source Name: Worthley Freshwater Impoundment

Source Lat: 40.216869 Source Long: -80.548592 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1061**

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Purchased Water

Source ID: 82070 Source Name: 4K Industrial Park, LLC
Commercial Supplier

Source Lat: 40.100395 Source Long: -80.71269 County: Belmont, OH

Max. Daily Purchase (gal) 588,000

DEP Comments: Treated and recycled flowback/produced water

Source ID: 82074 Source Name: Elite Gasfield Services, Midland Borough
Commercial Supplier

Source Lat: 40.644598 Source Long: -80.469382 County:

Max. Daily Purchase (gal) 2,000,000

DEP Comments: Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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Source ID: 82076 Source Name: Equitrans Water Services, LLC Cook Impoundment
Commercial Supplier

Source Lat: 39.817197 Source Long: -80.477956 County: Greene, PA

Max. Daily Purchase (gal) 2,100,000

DEP Comments: PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.

Source ID: 82078 Source Name: Grant Town Water
Public Water Provider

Source Lat: 39.559407 Source Long: -80.172893 County: Marion

Max. Daily Purchase (gal) 100,000

DEP Comments: @ Horizon Ventures Withdrawal Location

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

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Source ID: 82079 Source Name: Hydro Recovery, LP

Commercial Supplier

Source Lat: 40.419251 Source Long: -80.422684 County: Washington, MD

Max. Daily Purchase (gal) 1,000,000

DEP Comments: Treated and recycled flowback/produced water

Source ID: 82086 Source Name: Pennsylvania American Water

Public Water Provider

Source Lat: Source Long: County:

Max. Daily Purchase (gal) 864,000

DEP Comments: Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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Source ID: 82088 Source Name: Raw Water Pond @ Horizon Ventures Industrial Facility

Source Lat: 39.5535 Source Long: -80.16742 County: Marion

Max. Daily Purchase (gal) 1,008,000

DEP Comments:

Source ID: 82089 Source Name: Robinson Fork @ HG Energy Oil & Gas Operator

Source Lat: 39.979222 Source Long: -80.487472 County: Washington, MD

Max. Daily Purchase (gal) 1,600,000

DEP Comments:

Important:

MODIFICATION Effective: 12/14/2021

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82093 Source Name: Washington Pike PSD @ Brook Hills Park
Public Water Provider

Source Lat: 40.26632 Source Long: -80.543592 County: Brooke

Max. Daily Purchase (gal) 1,000,000

DEP Comments:

Source ID: 82094 Source Name: WFN Impoundment A @ HG Energy
Oil & Gas Operator

Source Lat: 39.991417 Source Long: -80.488694 County: Washington, PA

Max. Daily Purchase (gal) 1,600,000

DEP Comments:

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82095 Source Name: WFN Impoundment B @ HG Energy
Oil & Gas Operator

Source Lat: 39.991917 Source Long: -80.4965 County: Washington, PA

Max. Daily Purchase (gal) 1,600,000

DEP Comments:

Source ID: 82101 Source Name: Columbia Gas Transmission (TCO Elson) FWI

Source Lat: 39.75398 Source Long: -80.613604 County: Marshall

Max. Daily Purchase (gal)

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-547**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82111 Source Name: Hieronimus #1 Freshwater Impoundment

Source Lat: 39.811 Source Long: -80.5212 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1856**

Source ID: 82112 Source Name: Hieronimus #2 Freshwater Impoundment

Source Lat: 39.8149 Source Long: -80.5233 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1857**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82113 Source Name: Hieronimus #3 Freshwater Impoundment

Source Lat: 39.8162 Source Long: -80.5266 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1761**

Source ID: 82114 Source Name: Hieronimus #4 Freshwater Impoundment

Source Lat: 39.8198 Source Long: -80.5295 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1858**

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Recycled Frac Water

Source ID: 82128 Source Name: Various

Source Lat: Source Long: County:

Max. Daily Purchase (gal):

DEP Comments: Various sources include, but are not limited to, the Charles Jamison MSH well pad.

west virginia department of environmental protection

Water Management Plan:
Well Pad Overview

WMP 02427 | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad | County: Marshall

MODIFICATION **Effective: 12/14/2021**

This Water Management Plan governs all water withdrawals associated with the identified well pad. This plan supercedes any previously approved water management plans issued for the included wells. This plan is not in effect until at least one well-work permit identified below has been issued, and remains valid until all listed permits are released or expire.

API Number:	Well Name/Number:	API Number:	Well Name/Number:
047-051-02127	Charles Jamison MSH 8H		
047-051-02294	Charles Jamison MSH 6H		
047-051-02295	Charles Jamison MSH 206H		
047-051-02301	Charles Jamison MSH 10H		
047-051-02302	Charles Jamison MSH 210H		
047-051-02425	Charles Jamison MSH 410H		
047-051-02426	Charles Jamison MSH 610H		
047-051-02427	Charles Jamison MSH 810H		

The following water consumption estimates (in gallons) have been reported for this plan:

Construction:	210,000
Drilling Activities:	210,000
Hydraulic Fracture:	31,752,000
Post-Fracture:	210,000
Incidental Uses:	210,000
Reclamation Activites:	210,000
Total for Well Pad	32,802,000

Est. Construction Start: 7/1/2019

Est. Reclamation End: 10/15/2026

Dawn Newell

Digitally signed by Dawn Newell
Date: 2021.12.14 17:03:38 -05'00'

Water Management Plan:
Primary Water Sources

WMP 02427	API/ID Number	see overview	Operator:	SWN Production Company, LLC	
Plan Type: Well Pad	Charles Jamison MSH Well Pad				

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

For any sources identified by DEP as having known mussel, trout, or endangered species populations, the operator should consult with the Department of Natural Resources and the United States Fish and Wildlife Service prior to initiating any withdrawals.

DEP is aware that some intake points will be used for mutiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interepreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov. Signage requirements must be satisfied within 24 hours of activating this water management plan.

WMP 02427 | API Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Stream/River

- Source **Wheeling Creek @ Iskon** Marshall Owner: **Iskcon New Vrindaban, Inc.**

Max. daily purchase (gal) | Intake Latitude: 39.967973 | Intake Longitude: -80.599241

☐ Regulated Stream? | Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs): 47.36** **Min. Passby (cfs): 27.5**

DEP Comments: This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or the Wheeling Creek @ Sligar site

- Source **Wheeling Creek @ Schafer** Marshall Owner: **Betty Jane Schafer**

Max. daily purchase (gal) | Intake Latitude: 39.99257 | Intake Longitude: -80.634912

☐ Regulated Stream? | Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs): 49.70** **Min. Passby (cfs): 27.5**

DEP Comments: Qualifies under 35-8-9.1.a.1.B. Passby requirement of 20.8 cfs (1.27 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Little Wheeling Creek @ Main Street Bank** Ohio Owner: **Main Street Bank**

Max. daily purchase (gal) | Intake Latitude: 40.064076 | Intake Longitude: -80.614406

☐ Regulated Stream? | Ref. Gauge ID: 3111955 Wheeling Creek near Majorsville, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 23.00** **Min. Passby (cfs): 2.83**

DEP Comments: This site shall not be used concurrently with the Little Wheeling Creek @ Rt. 40 Staging Area location.

- Source **Paw Paw Creek @ Horizon Ventures** Marion Owner: **Horizon Ventures of WV, Inc**

Max. daily purchase (gal) | Intake Latitude: 39.552426 | Intake Longitude: -80.166833

☐ Regulated Stream? Ref. Gauge ID: 3061500 BUFFALO CREEK AT BARRACKVILLE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 26.96** **Min. Passby (cfs): 4.57**

DEP Comments: This source shall not be used concurrently with the Paw Paw Creek @ Dobbins location.

- Source **Little Wheeling Creek @ Rt. 40 Staging Area** Ohio Owner: **JDS Investments, LLC**

Max. daily purchase (gal) | Intake Latitude: 40.078324 | Intake Longitude: -80.591145

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 64.80** **Min. Passby (cfs): 2.83**

DEP Comments:

- Source **Wheeling Creek @ Sligar** Marshall Owner: **Terry Sligar**

Max. daily purchase (gal) | Intake Latitude: 40.013185 | Intake Longitude: -80.652863

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 3,360 **Min. Gauge Reading (cfs): 47.36** **Min. Passby (cfs): 28.64**

DEP Comments: This site shall not be operated concurrently with the Wheeling Creek @ Schaffer location or Wheeling Creek @ Iskcon site.

- Source **Middle Wheeling Creek @ Gribben** Ohio Owner: **Lawrence Kevin Gribber**

Max. daily purchase (gal) | Intake Latitude: 40.036777 | Intake Longitude: -80.598008

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 61.46** **Min. Passby (cfs): 6.26**

DEP Comments:

- Source **Short Creek @ Cain** Ohio Owner: **Susan L. Cain**

Max. daily purchase (gal) | Intake Latitude: 40.155061 | Intake Longitude: -80.651431

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,360 **Min. Gauge Reading (cfs): 64.49** **Min. Passby (cfs): 7.68**

DEP Comments:

- Source **Middle Wheeling Creek @ Supler** Ohio Owner: **Gregory and Peggy Supler**

Max. daily purchase (gal) | Intake Latitude: 40.04409 | Intake Longitude: -80.55348

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs): 62.57** **Min. Passby (cfs): 4.17**

DEP Comments:

- Source **Big Wheeling Creek @ Wheeling Staging Area** Ohio Owner: **Fulton Storage, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
	40.077019	-80.713866

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs): 43.57** **Min. Passby (cfs): 40.03**

DEP Comments:

- Source **Ohio River @ Extraction B Panhandle** Brooke Owner: **SWN Production Company, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
	40.233469	-80.654359

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 4,375 **Min. Gauge Reading (cfs): 6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **WV Fork Fish Creek @ Francis** Marshall Owner: **Loretta J. Francis**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
	39.733295	-80.579415

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 3,000 **Min. Gauge Reading (cfs): 63.69** **Min. Passby (cfs): 17.55**

DEP Comments:

- Source **Ohio River @ Proctor Peacemaker** Wetzel Owner: **SWN Production Company, LLC**

Max. daily purchase (gal) Intake Latitude: 39.714299 Intake Longitude: -80.825862

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 6,000 **Min. Gauge Reading (cfs): 6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Booths Creek @ Reliance Minerals** Monongalia Owner: **Reliance Minerals, Inc.**

Max. daily purchase (gal) Intake Latitude: 39.530405 Intake Longitude: -79.978079

☐ Regulated Stream? Ref. Gauge ID: 3062500 DECKERS CREEK AT MORGANTOWN, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 18.65** **Min. Passby (cfs): 0.48**

DEP Comments:

- Source **West Virginia Fork of Fish Creek @ Van Scyoc Withdrawal** Wetzel Owner: **Israel D Van Scyoc**

Max. daily purchase (gal) Intake Latitude: 39.6908 Intake Longitude: -80.4762

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 61.46** **Min. Passby (cfs): 5.45**

DEP Comments:

- Source **Buffalo Creek @ Bethany VFD Withdrawal Site** Brooke Owner: **Bethany Pike Volunteer Fire Department**

Max. daily purchase (gal) | Intake Latitude: 40.253422 | Intake Longitude: -80.600319

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,100 **Min. Gauge Reading (cfs): 67.66** **Min. Passby (cfs): 61.29**

DEP Comments: This location shall not be used concurrently with the Buffalo Creek @ Zatta location.

- Source **Whiteday Creek @ Sorine Withdrawal Site** Marion Owner: **Andrew Sorine, Jr.**

Max. daily purchase (gal) | Intake Latitude: 39.472311 | Intake Longitude: -79.977123

☐ Regulated Stream? Ref. Gauge ID: 3061500 BUFFALO CREEK AT BARRACKVILLE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 20.25** **Min. Passby (cfs): 2.29**

DEP Comments:

- Source **Buffalo Creek @ DNR** Brooke Owner: **SWN Water Resources Company, LLC**

Max. daily purchase (gal) | Intake Latitude: 40.19386 | Intake Longitude: -80.525796

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,200 **Min. Gauge Reading (cfs): 54.63** **Min. Passby (cfs): 43.52**

DEP Comments:

- Source **Fish Creek @ Gribben** Marshall Owner: **Revocable Living Trust of M. Peggy Gribben**

Max. daily purchase (gal) Intake Latitude: 39.753271 Intake Longitude: -80.597913

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs): 56.96** **Min. Passby (cfs): 23.94**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 4.07 cfs (0.69 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Buffalo Creek @ Forney** Brooke Owner: **Forney & Sons Holding Company, LLC**

Max. daily purchase (gal) Intake Latitude: 40.193453 Intake Longitude: -80.52175

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs): 53.07** **Min. Passby (cfs): 43.52**

DEP Comments:

- Source **Buffalo Creek @ Fuchs** Brooke Owner: **Beverly Fuchs**

Max. daily purchase (gal) Intake Latitude: 40.258863 Intake Longitude: -80.60337

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs): 6,468.00** **Min. Passby (cfs):**

DEP Comments:

- Source **Buffalo Creek @ Greathouse Withdrawal Site** Brooke Owner: **Linda Greathouse**

Max. daily purchase (gal) | Intake Latitude: 40.20895 | Intake Longitude: -80.60105

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 3,300 **Min. Gauge Reading (cfs): 60.42** **Min. Passby (cfs): 54.51**

DEP Comments:

- Source **Buffalo Creek @ Labelle Farms** Brooke Owner: **Steve Paul**

Max. daily purchase (gal) | Intake Latitude: 40.204444 | Intake Longitude: -80.598645

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs): 59.20** **Min. Passby (cfs): 53.8**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 8.34 cfs (2.23ft upstream & 2.05ft downstream) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the threshold will revert back to the USGS gage.

- Source **Buffalo Creek @ Worthley Withdrawal Site** Brooke Owner: **Kimberly C. Worthley**

Max. daily purchase (gal) | Intake Latitude: 40.210978 | Intake Longitude: -80.548779

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs): 53.07** **Min. Passby (cfs): 44.83**

DEP Comments:

- Source **Buffalo Creek @ WVDOH** Brooke Owner: **West Virginia Division of Highways**

Max. daily purchase (gal) Intake Latitude: 40.258863 Intake Longitude: -80.60337

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 3,360 **Min. Gauge Reading (cfs): 6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: http://www.erh.noaa.gov/ohrfc//flows.shtml

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- Source **Buffalo Creek @ Zatta** Brooke Owner: **Edward Zatta**

Max. daily purchase (gal) Intake Latitude: 40.253588 Intake Longitude: -80.600254

☐ Regulated Stream? Ref. Gauge ID: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Max. Pump rate (gpm): 2,520 **Min. Gauge Reading (cfs): 66.37** **Min. Passby (cfs): 61.29**

DEP Comments: This location shall not be used concurrently with the Buffalo Creek @ Bethany Pike VFD location.

- Source **Cross Creek @ Bullock Withdrawal Site** Brooke Owner: **Isabelle Bullock**

Max. daily purchase (gal) Intake Latitude: 40.30735 Intake Longitude: -80.569317

☐ Regulated Stream? Ref. Gauge ID: 3110830 KINGS CREEK AT WEIRTON, WV

Max. Pump rate (gpm): 2,500 **Min. Gauge Reading (cfs): 19.32** **Min. Passby (cfs): 20.99**

DEP Comments:

- Source **Cross Creek @ DNR** Brooke Owner: **WVDNR**

Max. daily purchase (gal) | Intake Latitude: 40.300536 | Intake Longitude: -80.542229

☐ Regulated Stream? Ref. Gauge ID: 3110830 KINGS CREEK AT WEIRTON, WV

Max. Pump rate (gpm): 3,000 **Min. Gauge Reading (cfs): 22.44** **Min. Passby (cfs): 22.44**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 15.69 cfs (1.14 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Cross Creek @ Norfolk and Western Railway** Brooke Owner: **Wheeling & Lake Erie Railway Company**

Max. daily purchase (gal) | Intake Latitude: 40.30802 | Intake Longitude: -80.599193

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): 5,250 **Min. Gauge Reading (cfs): 6,468.00** **Min. Passby (cfs): 0**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website:
https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Cross Creek @ Palizzi** Brooke Owner: **Campbell Palizzi**

Max. daily purchase (gal) | Intake Latitude: 40.302427 | Intake Longitude: -80.582753

☐ Regulated Stream? Ref. Gauge ID: 3110830 KINGS CREEK AT WEIRTON, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs): 23.11** **Min. Passby (cfs): 22.44**

DEP Comments: May not be used concurrently with Cross Creek @ Bullocks withdrawal site.

- Source **WV Fork Fish Creek @ Derby** Wetzel Owner: **Steven Derby**

Max. daily purchase (gal) | Intake Latitude: 39.709329 | Intake Longitude: -80.536079

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs): 52.24** **Min. Passby (cfs): 8.21**

DEP Comments:

- Source **Fish Creek @ Guzek** Marshall Owner: **Walter A. Guzek**

Max. daily purchase (gal) | Intake Latitude: 39.753021 | Intake Longitude: -80.613941

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 4,200 **Min. Gauge Reading (cfs): 56.96** **Min. Passby (cfs): 24.44**

DEP Comments: Qualifies under §35-8-9.1.a.1.B. Passby requirement of 3.28 cfs (0.75 ft on staff gauge) must be adhered to at all times. If staff gauge is compromised, DEP must be notified immediately, and the ref. USGS gauging station targets must also be exceeded.

- Source **Little Wheeling Creek @ Edge Withdrawal Site** Ohio Owner: **Alice Mae Edge**

Max. daily purchase (gal) | Intake Latitude: 40.098 | Intake Longitude: -80.5558

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): 2,000 **Min. Gauge Reading (cfs): 61.46** **Min. Passby (cfs):**

DEP Comments:

WMP 02427 | API Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Purchased Water

- Source **Adrian Public Service District** Upshur Owner: **Adrian Public Service District**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
144,000	-	-

☑ Regulated Stream? Ref. Gauge ID: 3054500 TYGART VALLEY RIVER AT PHILIPPI, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **155.85** **Min. Passby (cfs):** **75.51**

DEP Comments:

- Source **American Petroleum Partners (Wheeling Creek @ Wilson)** Marshall Owner: **Phillip Wilson**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
3,500,000	39.975882	-80.62967

☐ Regulated Stream? Ref. Gauge ID: 3112000 WHEELING CREEK AT ELM GROVE, WV

Max. Pump rate (gpm): **4,200** **Min. Gauge Reading (cfs):** **47.36** **Min. Passby (cfs):** **26.09**

DEP Comments:

- Source **Covestro, LLC** Marshall Owner: **Covestro, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,050,000	39.7218	-80.830231

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Elite Gasfield Services** Brooke Owner: **Elite Gasfield Services**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,000,000	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Grandview-Doolin PSD** Wetzel Owner: **Grandview-Doolin Public Service District**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
60,480	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Marshall County Public Service District 3** Marshall Owner: **Marshall County Public Service District #4**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
144,000	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Tap Location is: (39.906400, -80.586200)

- Source **Marshall County Public Service District 4** Marshall Owner: **Marshall County Public Service District #4**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
80,000	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Public Service District 4 purchases water from Moundsville Water Department wells. (Tap Location is: 39.872607, -80.548329)

- Source **Ohio County PSD** Ohio Owner: **Ohio county PSD**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
720,000	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ 4K Industrial Park** Belmont, OH Owner: **4K Industrial Park, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,982,000	40.098805	-80.711328

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ J&R Excavating** Marshall Owner: **J&R Excavating**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,890,000	39.998509	-80.737336

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Ohio River @ Oasis Transport Withdrawal Site** Brooke Owner: **Oasis Transport, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,890,000	40.331551	-80.601034

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Range Tap @ Corbin Withdrawal Site** Brooke Owner: **Range Resources Corp.**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,100,000	40.229983	-80.521067

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **The Village of Valley Grove** Ohio Owner: **The Village of Valley Grove**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
720,000	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

- Source **Valley Falls PSD** Marion Owner: **Valley Falls PSD**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
144,000	-	-

☑ Regulated Stream? Tygart Valley Dam Ref. Gauge ID: 3057000 TYGART VALLEY RIVER AT COLFAX, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **397.39** **Min. Passby (cfs):**

DEP Comments:

- Source **Wheeling Creek #1 @ HG Energy** Marshall Owner: **HG Energy, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
1,440,000	39.95205	-80.56189

☐ Regulated Stream? Ref. Gauge ID: 3111955 Wheeling Creek near Majorsville, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **18.23** **Min. Passby (cfs):** **16.63**

DEP Comments:

- Source **Wheeling Creek # 2 @ HG Energy** Marshall Owner: **HG Energy, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
2,880,000	39.949577	-80.531255

☐ Regulated Stream? Ref. Gauge ID: 3111955 Wheeling Creek near Majorsville, WV

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **18.23** **Min. Passby (cfs):** **16.24**

DEP Comments:

- Source **Wheeling Water Department** Ohio Owner: **Wheeling Water Department**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
720,000	-	-

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecasts at the following website before purchasing water: https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Source Summary **MODIFICATION** **Effective: 12/14/2021**

WMP 02427 API Number see overview Operator: SWN Production Company, LLC

Plan Type Well Pad Charles Jamison MSH Well Pad

Groundwater

- Source **Shoemaker Groundwater Wells @ HG Energy** Marshall Owner: **HG Energy, LLC**

Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
576,000	40.0222	-80.733888

☑ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **800** **Min. Gauge Reading (cfs):** **6,468.00** **Min. Passby (cfs):**

DEP Comments: This alluvial groundwater well is, to some extent, under the influence of the Ohio River. Please adhere to stated minimum flow requirements on the Ohio River for withdrawals. https://forecast.weather.gov/product.php?site=NWS&product=RVF&issuedby=TIR

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82090 | Source Name: Shoemaker Groundwater Wells @ HG Energy

HG Energy, LLC

Source Latitude: 40.0222

Source Longitude: -80.733888

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Marshall

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☑ Regulated Stream? — Ohio River Min. Flow
- ☐ Proximate PSD?
- ☑ Gauged Stream?

Max. Pump rate (gpm): 800

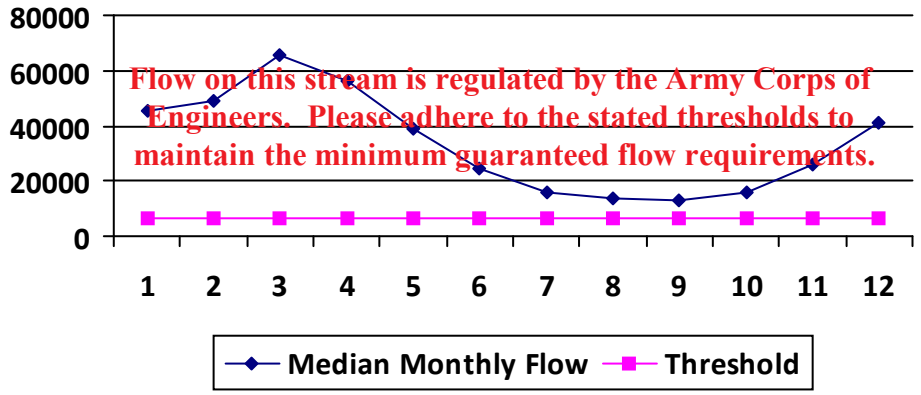
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	1.78
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82071 | Source Name: Adrian Public Service District / Adrian Public Service District

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5020001

Drainage Area (sq. mi.): 197.33 | County: Upshur

- [ ] Endangered Species?
- [ ] Mussel Stream?
- [x] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream?
- [x] Proximate PSD? — City of Buckhannon Water Plant
- [x] Gauged Stream?

Max. Pump rate (gpm):

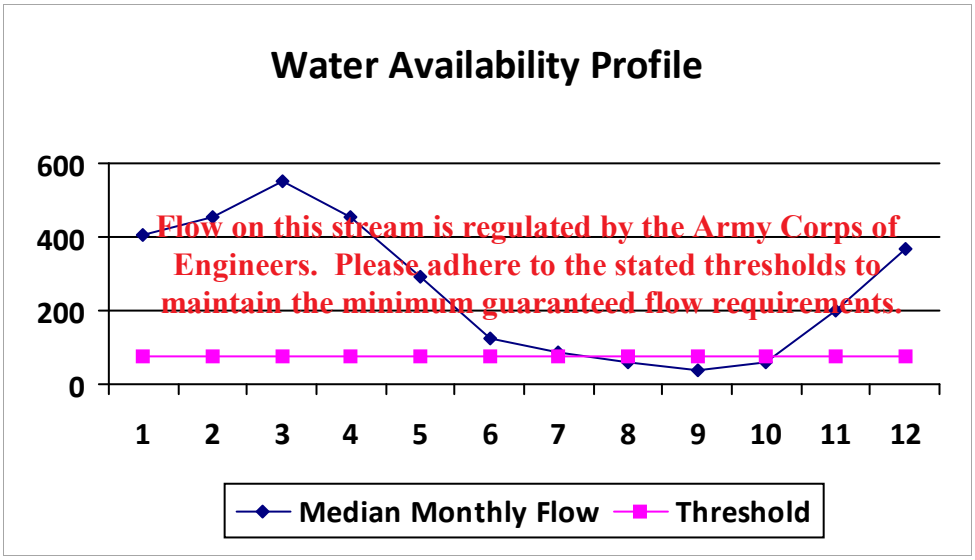
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3054500 | TYGART VALLEY RIVER AT PHILIPPI, WV

Drainage Area (sq. mi.): 914.00 | Gauge Threshold (cfs): 341

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	402.75		
2	456.66		
3	551.03		
4	451.73		
5	291.41		
6	124.17		
7	85.17		
8	59.44		
9	37.59		
10	60.75		
11	201.45		
12	368.28		



Water Availability Assessment of Location

Base Threshold (cfs)	73.62
Upstream Demand (cfs):	4.94
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	18.41
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82072 | Source Name: American Petroleum Partners (Wheeling Creek @ W
Phillip Wilson

Source Latitude: 39.975882
Source Longitude: -80.62967

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 192.96 | County: Marshall

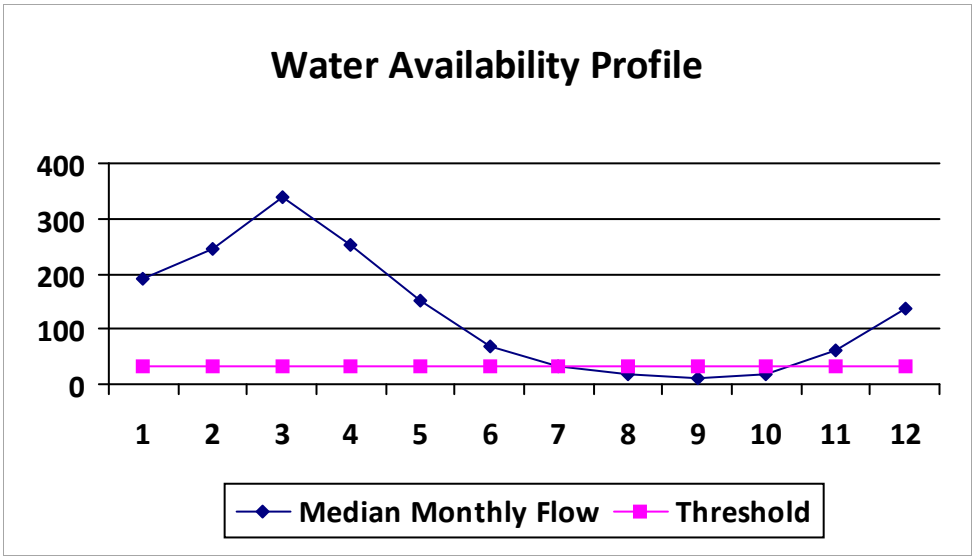
- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 4,200
Max. Simultaneous Trucks: 3
Max. Truck pump rate (gpm) 1000

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	191.17	41.98	149.44
2	243.94	41.98	202.22
3	338.32	41.98	296.60
4	251.15	41.98	209.42
5	153.09	41.98	111.37
6	69.68	41.98	27.95
7	30.79	41.98	-10.93
8	18.01	41.98	-23.71
9	11.44	41.98	-30.28
10	18.96	41.98	-22.76
11	59.65	41.98	17.93
12	135.26	41.98	93.53



Water Availability Assessment of Location

Base Threshold (cfs)	26.09
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	6.52
Min. Gauge Reading (cfs):	**56.86**
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82073 | Source Name: Covestro, LLC / Covestro, LLC

Source Latitude: 39.7218

Source Longitude: -80.830231

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 | County: Marshall

- [ ] Endangered Species?
- [ ] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Grandview-Doolin PSD
- [x] Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

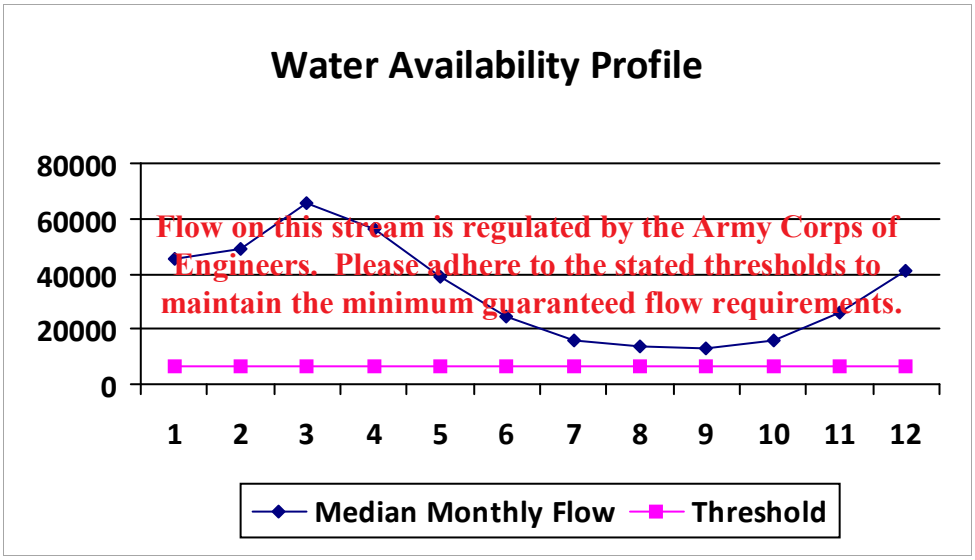
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82075 | Source Name: Elite Gasfield Services / Elite Gasfield Services

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 25000 | County: Brooke

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — City of Follansbee
- [x] Gauged Stream?

Max. Pump rate (gpm):

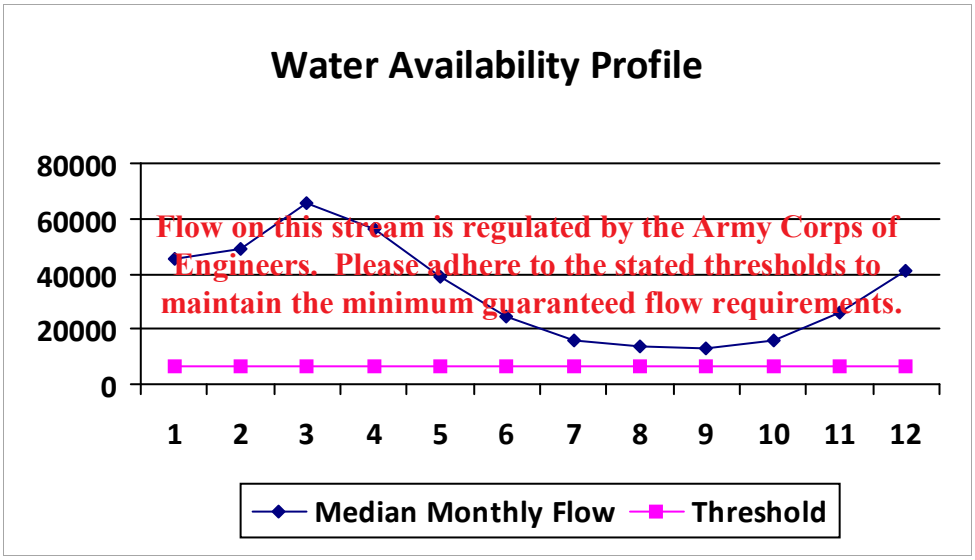
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82077 | Source Name: Grandview-Doolin PSD

Grandview-Doolin Public Service District

Source Latitude: -

Source Longitude: -

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 | County: Wetzel

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Grandview-Doolin PSD
- [x] Gauged Stream?

Max. Pump rate (gpm):

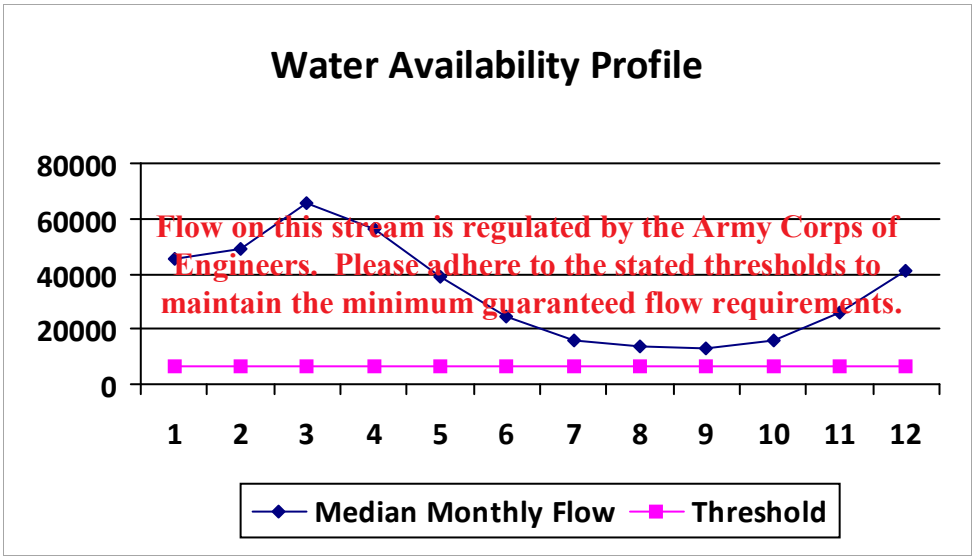
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82080 | Source Name: Marshall County Public Service District 3 / Marshall County Public Service District #4

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Moundsville Water Department
- [ ] Gauged Stream?

Max. Pump rate (gpm):

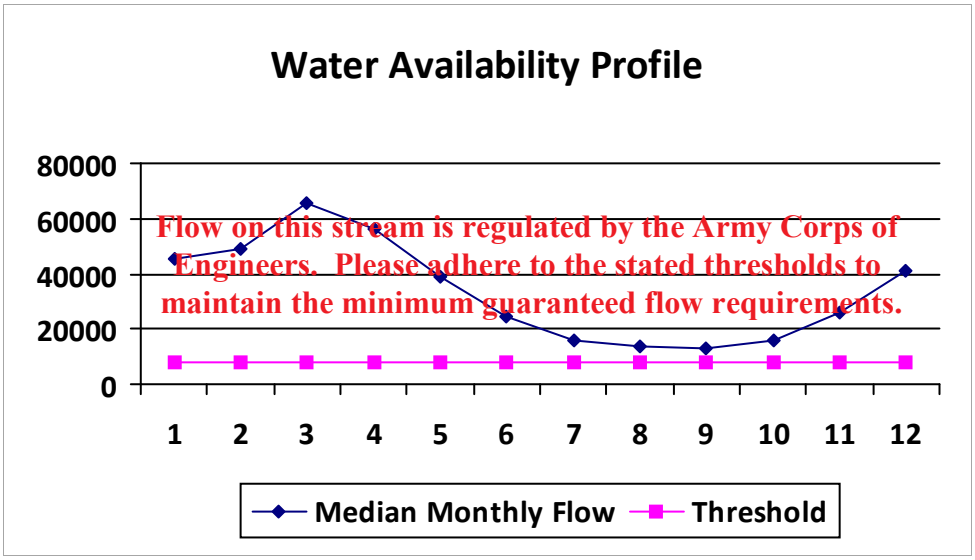
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82081 | Source Name: Marshall County Public Service District 4 / Marshall County Public Service District #4

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Moundsville Water Department
- [ ] Gauged Stream?

Max. Pump rate (gpm):

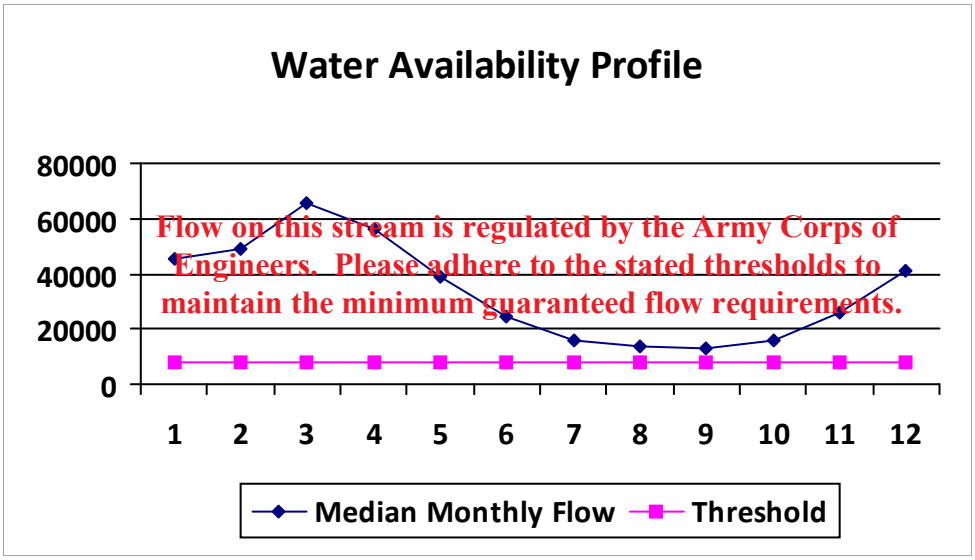
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	1,617.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82082 | Source Name: Ohio County PSD / Ohio county PSD | Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Wheeling Water Department
- [x] Gauged Stream?

Max. Pump rate (gpm):

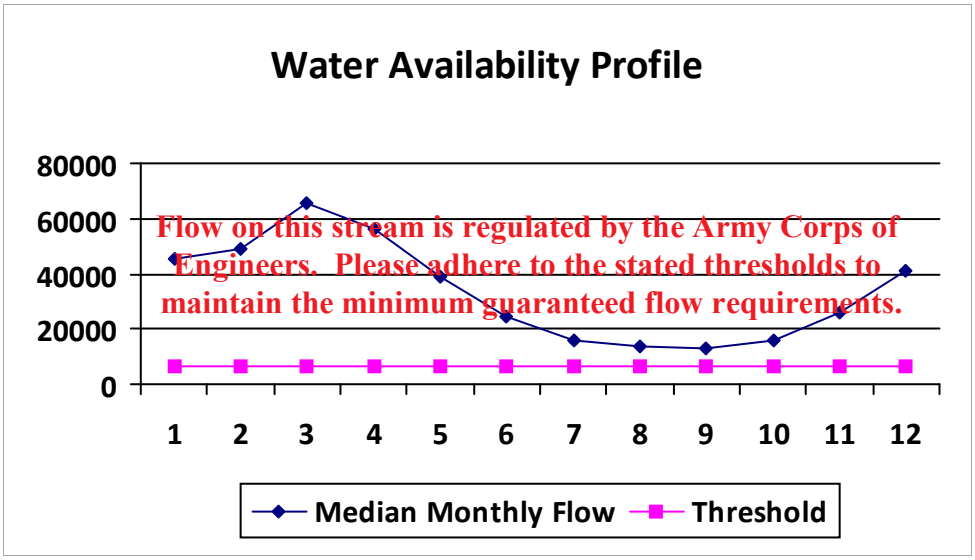
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82083 | Source Name: Ohio River @ 4K Industrial Park / 4K Industrial Park, LLC

Source Latitude: 40.098805

Source Longitude: -80.711328

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Belmont, OH

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm):

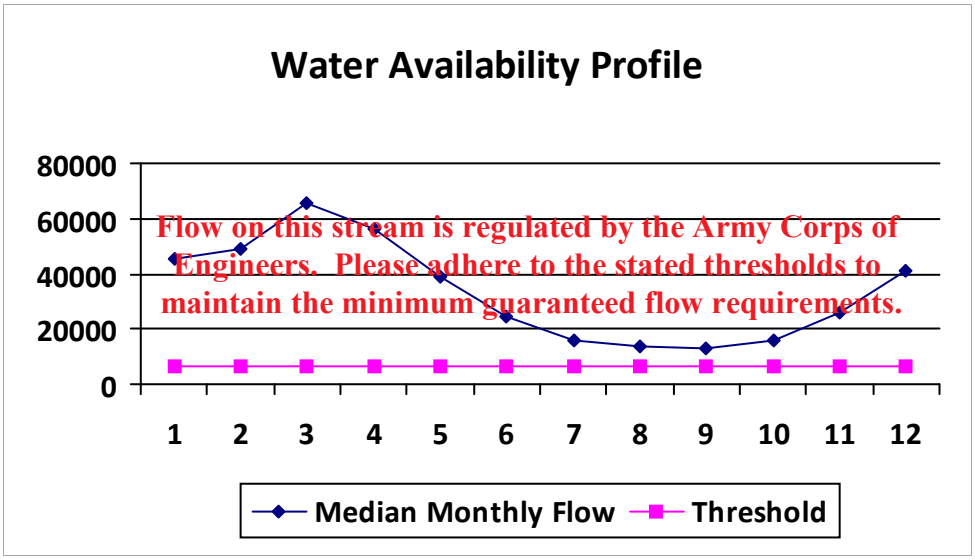
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm):

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82084 | Source Name: Ohio River @ J&R Excavating / J&R Excavating

Source Latitude: 39.998509

Source Longitude: -80.737336

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm):

Max. Simultaneous Trucks: 0

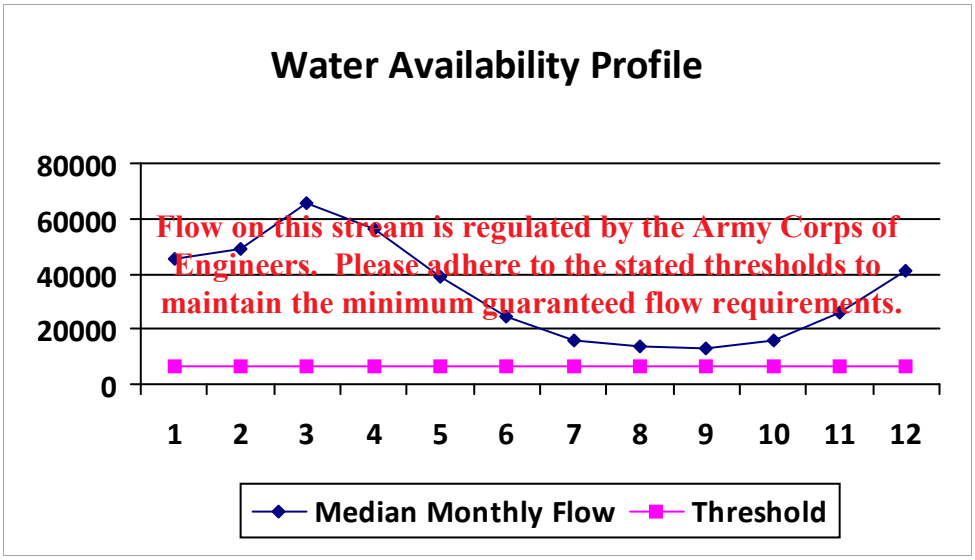
Max. Truck pump rate (gpm):

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82085 | Source Name: Ohio River @ Oasis Transport Withdrawal Site

Oasis Transport, LLC

Source Latitude: 40.331551

Source Longitude: -80.601034

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Brooke

- [x] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm):

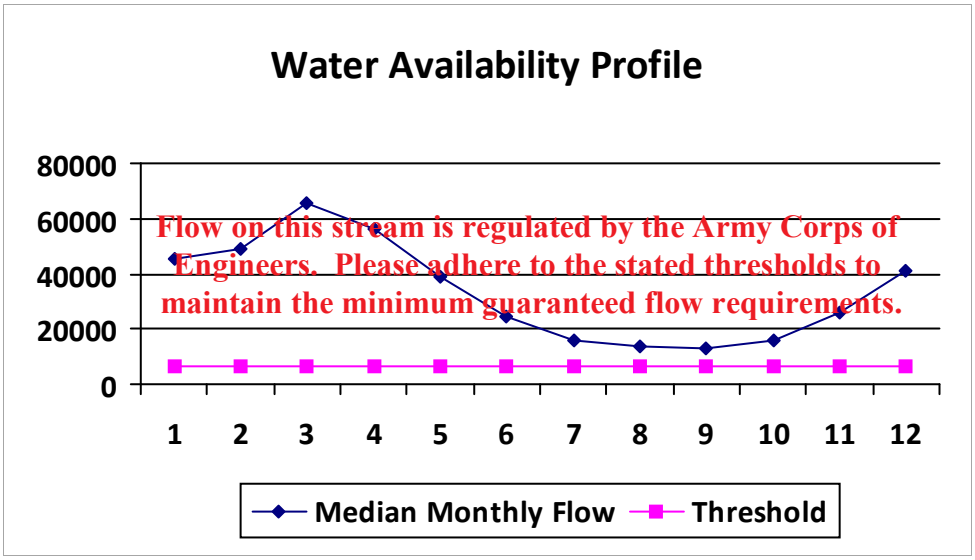
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82087 | Source Name: Range Tap @ Corbin Withdrawal Site

Range Resources Corp.

Source Latitude: 40.229983

Source Longitude: -80.521067

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Brooke

- [x] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm):

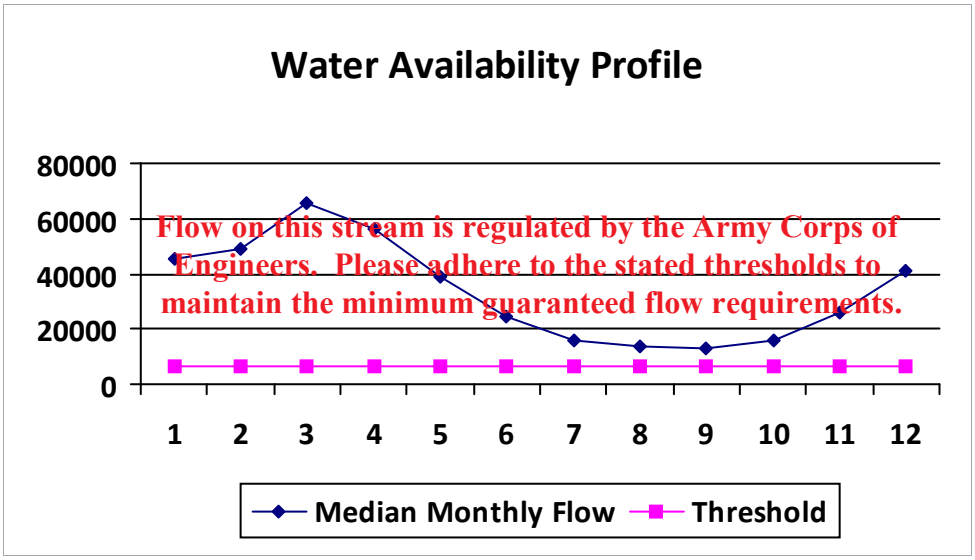
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82091 | Source Name: The Village of Valley Grove / The Village of Valley Grove

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Wheeling Water Department
- [x] Gauged Stream?

Max. Pump rate (gpm):

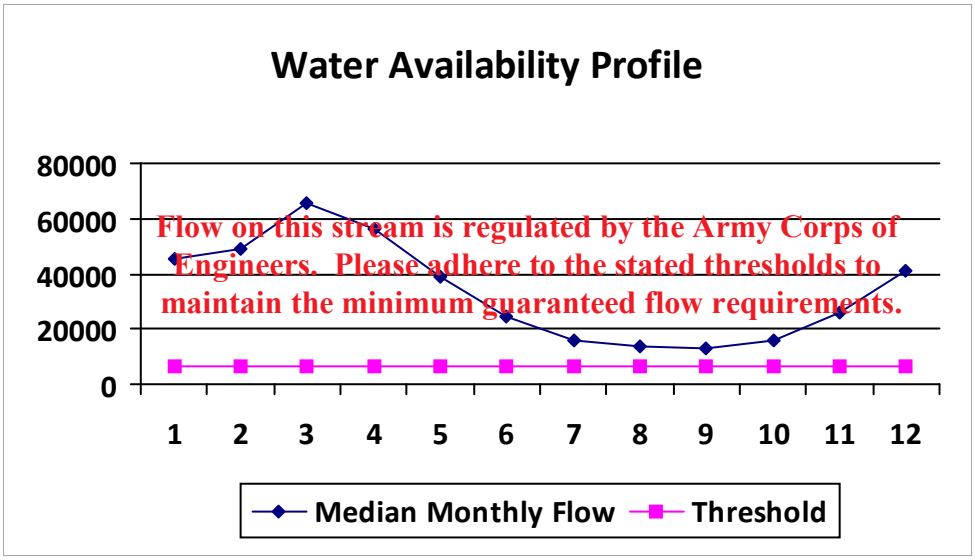
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82092 | Source Name: Valley Falls PSD / Valley Falls PSD

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5020001

Drainage Area (sq. mi.): 1367.05 | County: Marion

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Tygart Valley Dam
- [x] Proximate PSD? — City of Fairmont
- [x] Gauged Stream?

Max. Pump rate (gpm):

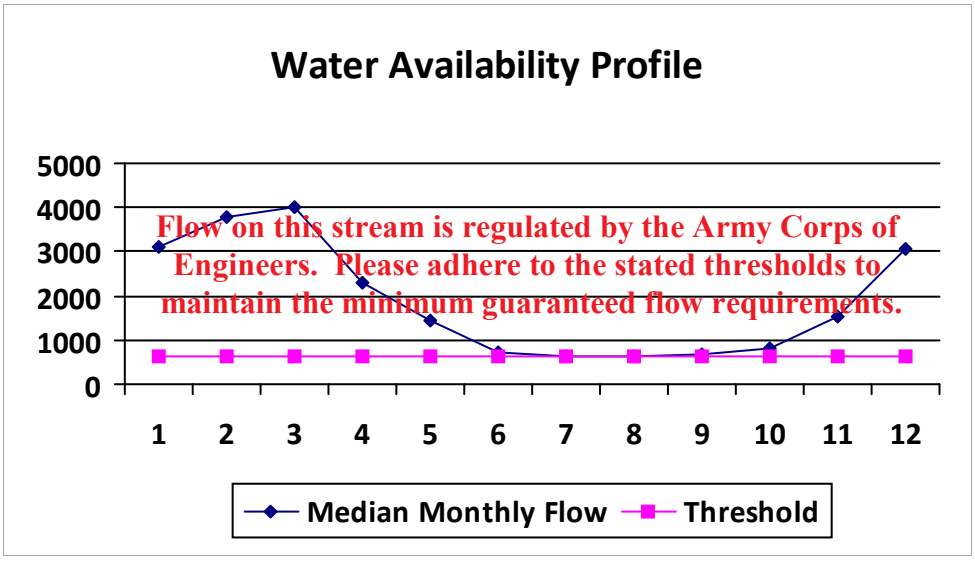
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3057000 | TYGART VALLEY RIVER AT COLFAX, WV

Drainage Area (sq. mi.): 1,363.00 | Gauge Threshold (cfs): 624

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	3,116.33	-	-
2	3,762.53	-	-
3	4,020.62	-	-
4	2,297.81	-	-
5	1,441.95	-	-
6	729.86	-	-
7	613.75	-	-
8	623.01	-	-
9	694.86	-	-
10	793.38	-	-
11	1,551.03	-	-
12	3,049.68	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82096 | Source Name: Wheeling Creek #1 @ HG Energy

HG Energy, LLC

Source Latitude: 39.95205

Source Longitude: -80.56189

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 156.06 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm):

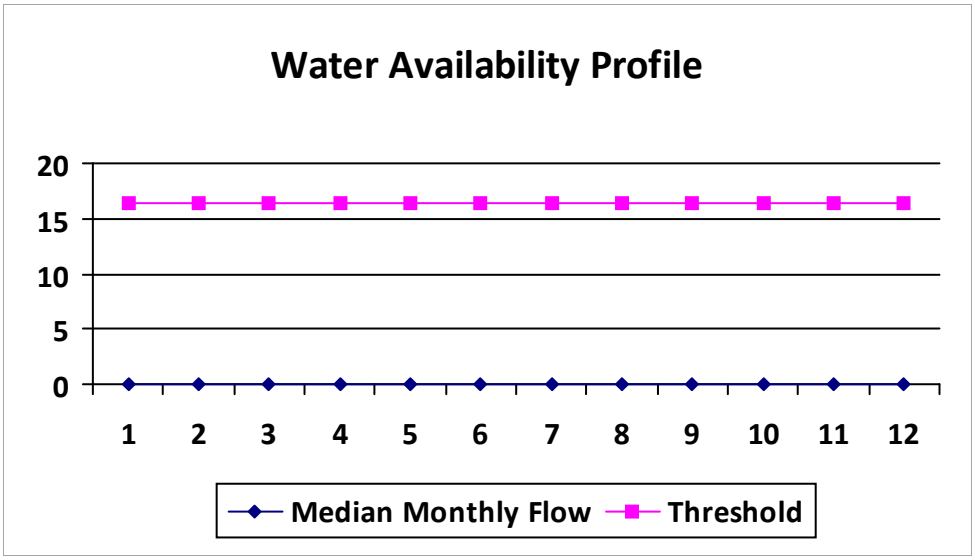
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm)

Reference Gauge: 3111955 | Wheeling Creek near Majorsville, WV

Drainage Area (sq. mi.): 152.00 | Gauge Threshold (cfs): 16

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	0.00		-
2	0.00		-
3	0.00		-
4	0.00		-
5	0.00		-
6	0.00		-
7	0.00		-
8	0.00		-
9	0.00		-
10	0.00		-
11	0.00		-
12	0.00		-



Water Availability Assessment of Location

Base Threshold (cfs)	16.43
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82097 | Source Name: Wheeling Creek # 2 @ HG Energy

HG Energy, LLC

Source Latitude: 39.949577

Source Longitude: -80.531255

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 152.4 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm):

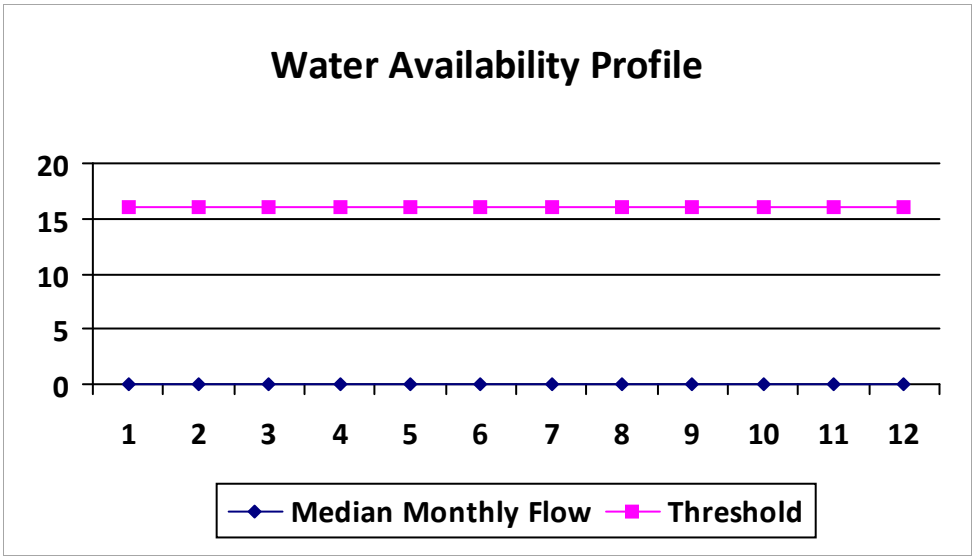
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm)

Reference Gauge: 3111955 | Wheeling Creek near Majorsville, WV

Drainage Area (sq. mi.): 152.00 | Gauge Threshold (cfs): 16

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	0.00		-
2	0.00		-
3	0.00		-
4	0.00		-
5	0.00		-
6	0.00		-
7	0.00		-
8	0.00		-
9	0.00		-
10	0.00		-
11	0.00		-
12	0.00		-



Water Availability Assessment of Location

Base Threshold (cfs)	16.04
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82098 | Source Name: Wheeling Water Department / Wheeling Water Department

Source Latitude: - | Source Longitude: -

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Ohio

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Wheeling Water Department
- [x] Gauged Stream?

Max. Pump rate (gpm):

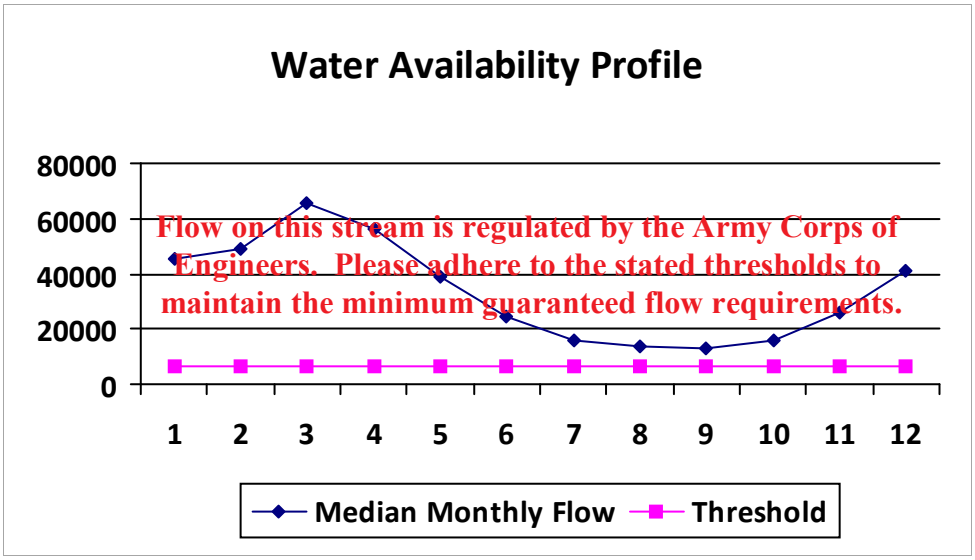
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82037 | Source Name: Wheeling Creek @ Iskon / Iskcon New Vrindaban, Inc.

Source Latitude: 39.967973

Source Longitude: -80.599241

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 189.6 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm): 2,500

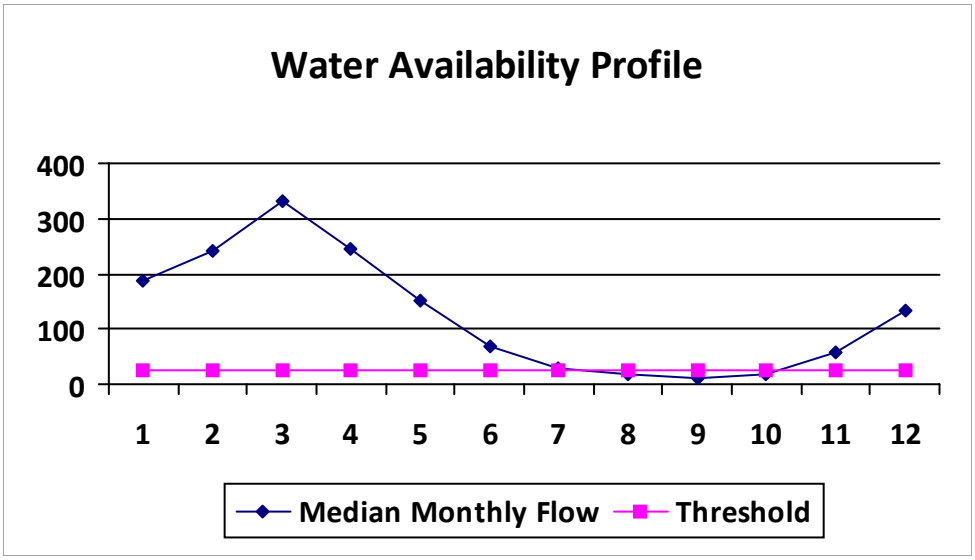
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	187.84	31.21	156.81
2	239.69	31.21	208.66
3	332.43	31.21	301.40
4	246.77	31.21	215.74
5	150.42	31.21	119.39
6	68.46	31.21	37.43
7	30.25	31.21	-0.78
8	17.70	31.21	-13.33
9	11.25	31.21	-19.78
10	18.63	31.21	-12.40
11	58.61	31.21	27.58
12	132.90	31.21	101.87



Water Availability Assessment of Location

Base Threshold (cfs)	25.64
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	**43.57**
Passby at Location (cfs):	**25.64**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82038 | Source Name: Wheeling Creek @ Schafer / Betty Jane Schafer

Source Latitude: 39.99257

Source Longitude: -80.634912

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 203.38 | County: Marshall

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm): 5,250

Max. Simultaneous Trucks:

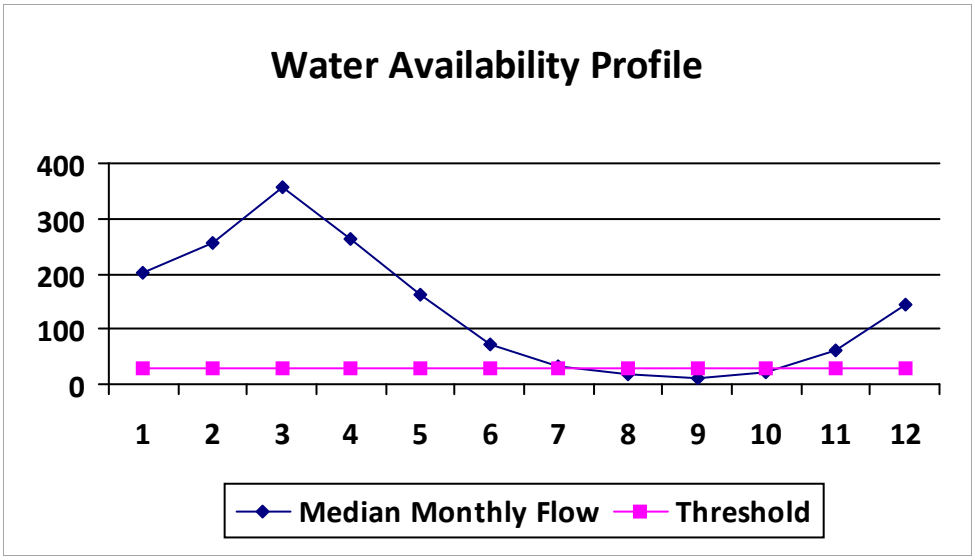
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	201.49	39.20	162.43
2	257.11	39.20	218.06
3	356.59	39.20	317.53
4	264.71	39.20	225.65
5	161.35	39.20	122.30
6	73.44	39.20	34.38
7	32.45	39.20	-6.60
8	18.98	39.20	-20.08
9	12.06	39.20	-26.99
10	19.99	39.20	-19.07
11	62.87	39.20	23.81
12	142.56	39.20	103.50



Water Availability Assessment of Location

Base Threshold (cfs)	27.50
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	11.70
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	**49.70**
Passby at Location (cfs):	**27.50**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82039 | Source Name: Little Wheeling Creek @ Main Street Bank / Main Street Bank

Source Latitude: 40.064076

Source Longitude: -80.614406

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 13.94 | County: Ohio

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [ ] Gauged Stream?

Max. Pump rate (gpm): 2,000

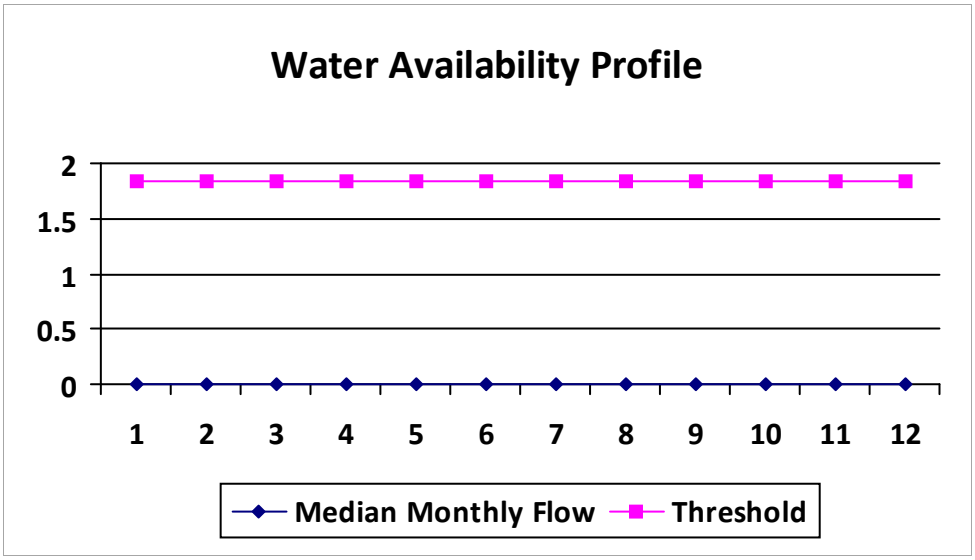
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3111955 | Wheeling Creek near Majorsville, WV

Drainage Area (sq. mi.): 152.00 | Gauge Threshold (cfs): 16

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	0.00	10.00	-
2	0.00	10.00	-
3	0.00	10.00	-
4	0.00	10.00	-
5	0.00	10.00	-
6	0.00	10.00	-
7	0.00	10.00	-
8	0.00	10.00	-
9	0.00	10.00	-
10	0.00	10.00	-
11	0.00	10.00	-
12	0.00	10.00	-



Water Availability Assessment of Location

Base Threshold (cfs)	1.47
Upstream Demand (cfs):	3.34
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.37
Ungauged Stream Safety (cfs):	0.37
Min. Gauge Reading (cfs):	**31.80**
Passby at Location (cfs):	**2.20**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP	02427	API/ID Number	see overview	Operator:	SWN Production Company, LLC
Plan Type:	Well Pad		Charles Jamison MSH Well Pad		

Source ID: 82040 Source Name: Paw Paw Creek @ Horizon Ventures

Horizon Ventures of WV, Inc

Source Latitude: 39.552426

Source Longitude: -80.166833

HUC-8 Code: 5020003

Drainage Area (sq. mi.) 28.34 County: Marion

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

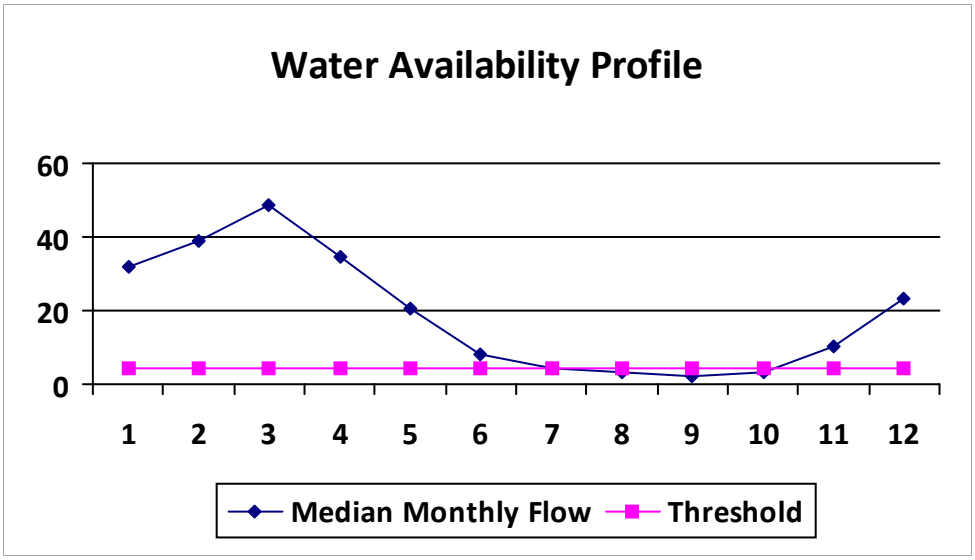
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3061500 BUFFALO CREEK AT BARRACKVILLE, WV

Drainage Area (sq. mi.): 116.00 Gauge Threshold (cfs): 15

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	31.74	9.95	21.86
2	39.11	9.95	29.23
3	48.41	9.95	38.52
4	34.37	9.95	24.48
5	20.75	9.95	10.86
6	8.19	9.95	-1.70
7	4.57	9.95	-5.32
8	3.18	9.95	-6.70
9	2.35	9.95	-7.54
10	3.03	9.95	-6.86
11	10.46	9.95	0.58
12	23.48	9.95	13.59



Water Availability Assessment of Location

Base Threshold (cfs)	3.66
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.92
Ungauged Stream Safety (cfs):	0.92
Min. Gauge Reading (cfs):	**26.96**
Passby at Location (cfs):	**5.50**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP	02427	API/ID Number	see overview	Operator:	SWN Production Company, LLC
Plan Type:	Well Pad		Charles Jamison MSH Well Pad		

Source ID: 82041 Source Name: Little Wheeling Creek @ Rt. 40 Staging Area
JDS Investments, LLC

Source Latitude: 40.078324
Source Longitude: -80.591145

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 13.94 County: Ohio

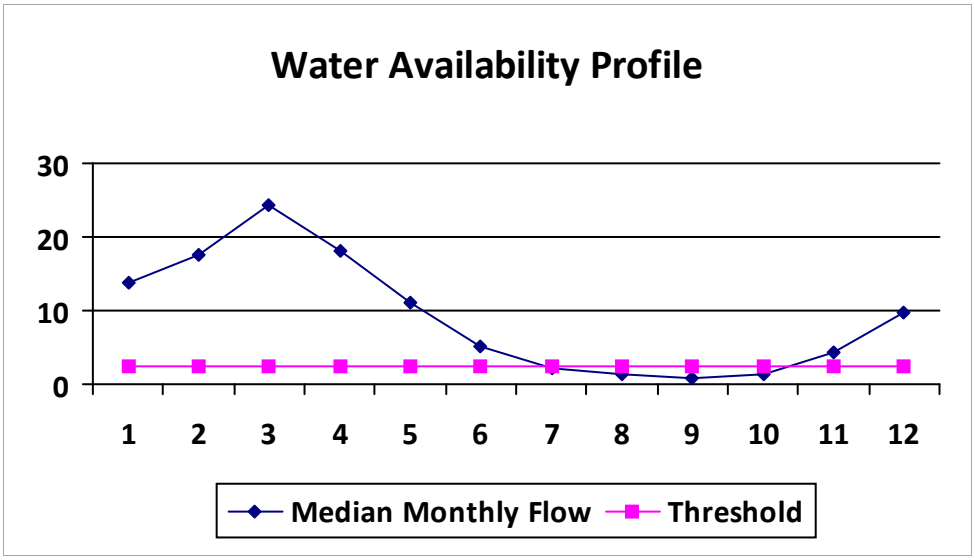
- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	13.81	10.62	3.55
2	17.62	10.62	7.36
3	24.44	10.62	14.18
4	18.14	10.62	7.88
5	11.06	10.62	0.80
6	5.03	10.62	-5.23
7	2.22	10.62	-8.03
8	1.30	10.62	-8.96
9	0.83	10.62	-9.43
10	1.37	10.62	-8.89
11	4.31	10.62	-5.95
12	9.77	10.62	-0.49



Water Availability Assessment of Location

Base Threshold (cfs)	1.89
Upstream Demand (cfs):	3.34
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.47
Ungauged Stream Safety (cfs):	0.47
Min. Gauge Reading (cfs):	**64.80**
Passby at Location (cfs):	**2.83**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82042 | Source Name: Wheeling Creek @ Sligar / Terry Sligar

Source Latitude: 40.013185

Source Longitude: -80.652863

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 211.8 | County: Marshall

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☑ Gauged Stream?

Max. Pump rate (gpm): 3,360

Max. Simultaneous Trucks:

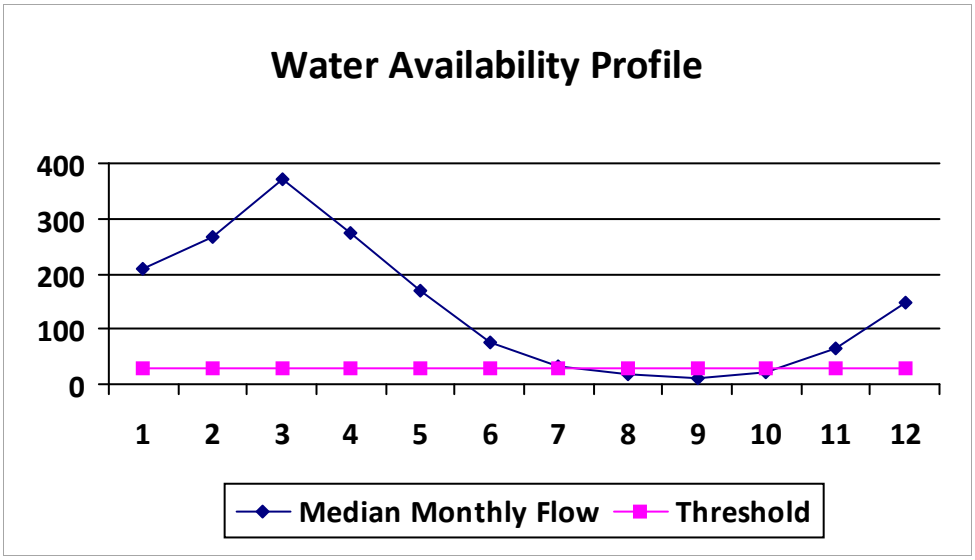
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	209.83	36.13	173.84
2	267.76	36.13	231.77
3	371.35	36.13	335.36
4	275.67	36.13	239.68
5	168.03	36.13	132.05
6	76.48	36.13	40.49
7	33.80	36.13	-2.19
8	19.77	36.13	-16.22
9	12.56	36.13	-23.42
10	20.81	36.13	-15.17
11	65.47	36.13	29.49
12	148.46	36.13	112.48



Water Availability Assessment of Location

Base Threshold (cfs)	28.64
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	7.49
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	**45.49**
Passby at Location (cfs):	**28.64**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP	02427	API/ID Number	see overview	Operator:	SWN Production Company, LLC
Plan Type:	Well Pad		Charles Jamison MSH Well Pad		

Source ID: 82043 Source Name: Middle Wheeling Creek @ Gribben
Lawrence Kevin Gribber

Source Latitude: 40.036777
Source Longitude: -80.598008

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 30.81 County: Ohio

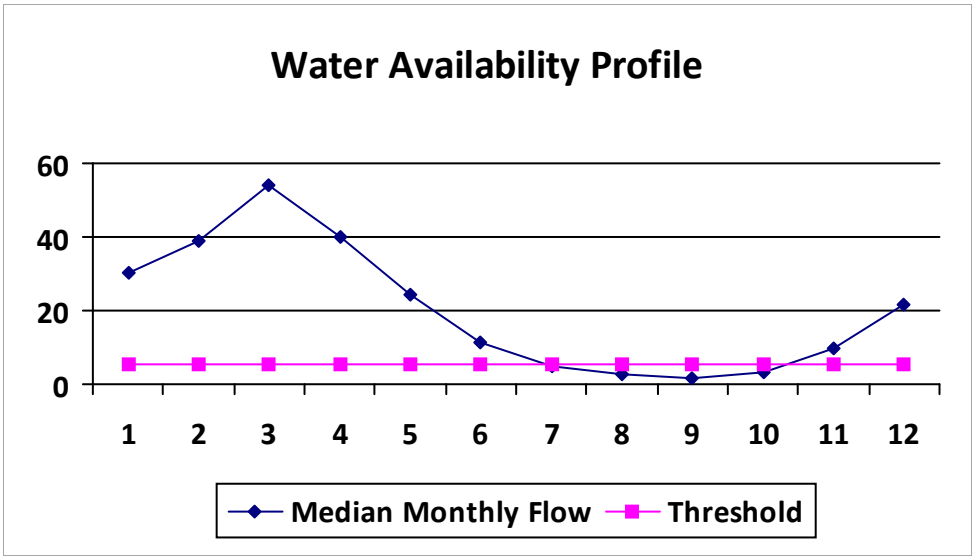
☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC
☐ Trout Stream? ☐ Tier 3? ☐ WH
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

Max. Pump rate (gpm): 2,000
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	30.52	10.71	20.18
2	38.95	10.71	28.61
3	54.02	10.71	43.68
4	40.10	10.71	29.76
5	24.44	10.71	14.10
6	11.13	10.71	0.79
7	4.92	10.71	-5.42
8	2.88	10.71	-7.46
9	1.83	10.71	-8.51
10	3.03	10.71	-7.31
11	9.52	10.71	-0.82
12	21.60	10.71	11.26



Water Availability Assessment of Location

Base Threshold (cfs)	4.17
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	1.04
Ungauged Stream Safety (cfs):	1.04
Min. Gauge Reading (cfs):	**61.46**
Passby at Location (cfs):	**6.25**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82044 | Source Name: Short Creek @ Cain / Susan L. Cain

Source Latitude: 40.155061

Source Longitude: -80.651431

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 16.58 | County: Ohio

☐ Endangered Species? ☐ Mussel Stream? ☐ ZCC

☐ Trout Stream? ☐ Tier 3? ☐ WH

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

Max. Pump rate (gpm): 3,360

Max. Simultaneous Trucks:

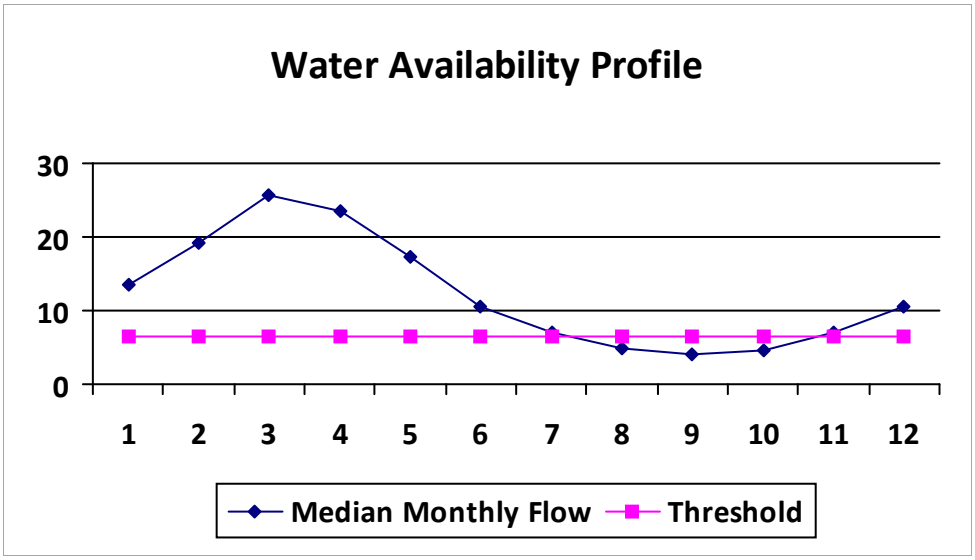
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	13.39	15.17	-1.60
2	19.18	15.17	4.20
3	25.67	15.17	10.68
4	23.44	15.17	8.45
5	17.30	15.17	2.31
6	10.56	15.17	-4.43
7	6.97	15.17	-8.01
8	4.87	15.17	-10.12
9	3.99	15.17	-11.00
10	4.71	15.17	-10.27
11	6.97	15.17	-8.02
12	10.55	15.17	-4.43



Water Availability Assessment of Location

Base Threshold (cfs)	5.12
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	7.49
Headwater Safety (cfs):	1.28
Ungauged Stream Safety (cfs):	1.28
Min. Gauge Reading (cfs):	**64.49**
Passby at Location (cfs):	**7.68**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82045 | Source Name: Middle Wheeling Creek @ Supler / Gregory and Peggy Supler

Source Latitude: 40.04409

Source Longitude: -80.55348

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 20.54 | County: Ohio

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,500

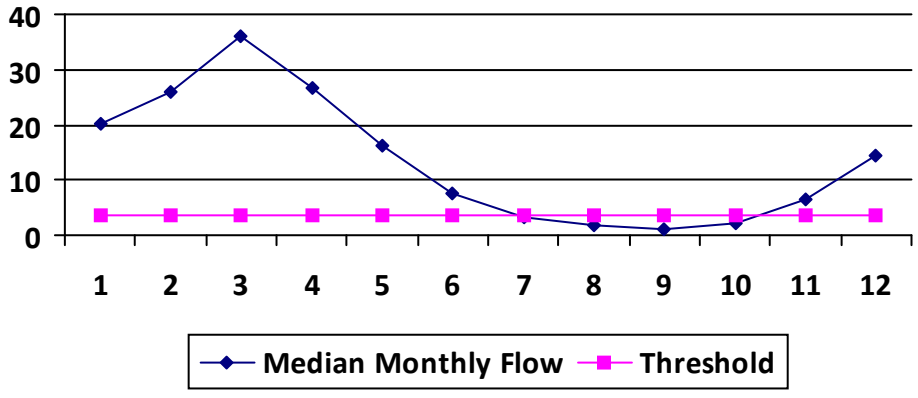
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	20.35	9.74	10.73
2	25.97	9.74	16.35
3	36.01	9.74	26.39
4	26.73	9.74	17.11
5	16.30	9.74	6.68
6	7.42	9.74	-2.20
7	3.28	9.74	-6.34
8	1.92	9.74	-7.70
9	1.22	9.74	-8.40
10	2.02	9.74	-7.60
11	6.35	9.74	-3.27
12	14.40	9.74	4.78



Water Availability Assessment of Location

Base Threshold (cfs)	2.78
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.69
Ungauged Stream Safety (cfs):	0.69
Min. Gauge Reading (cfs):	**62.57**
Passby at Location (cfs):	**4.17**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82046 | Source Name: Big Wheeling Creek @ Wheeling Staging Area
Fulton Storage, LLC

Source Latitude: 40.077019
Source Longitude: -80.713866

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 296.04 | County: Ohio

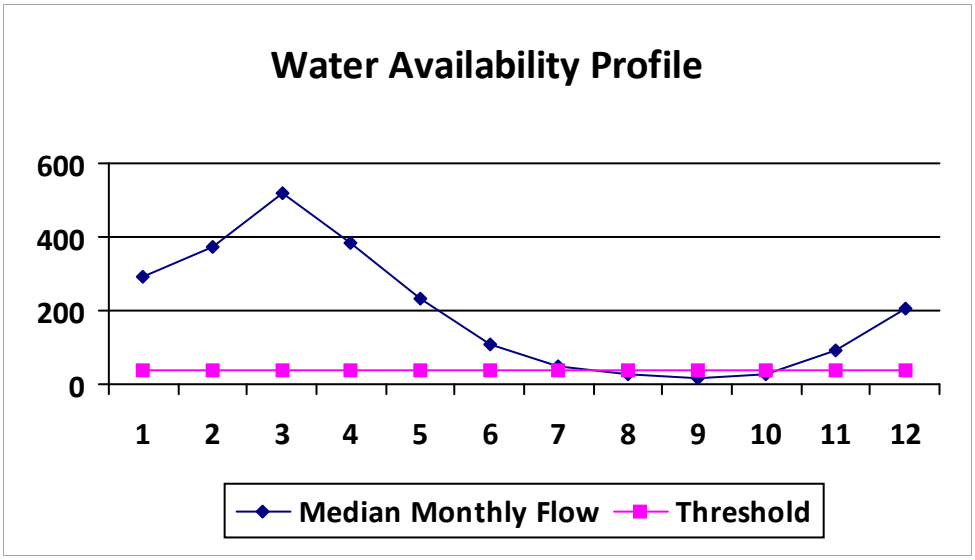
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [x] Gauged Stream?

Max. Pump rate (gpm): 2,500
Max. Simultaneous Trucks: 0
Max. Truck pump rate (gpm) 0

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	293.29	45.60	247.82
2	374.26	45.60	328.78
3	519.05	45.60	473.58
4	385.31	45.60	339.84
5	234.87	45.60	189.40
6	106.90	45.60	61.43
7	47.24	45.60	1.77
8	27.63	45.60	-17.84
9	17.56	45.60	-27.91
10	29.09	45.60	-16.38
11	91.52	45.60	46.05
12	207.51	45.60	162.04



Water Availability Assessment of Location

Base Threshold (cfs)	40.03
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	**43.57**
Passby at Location (cfs):	**40.03**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82047 | Source Name: Ohio River @ Extraction B Panhandle
SWN Production Company, LLC

Source Latitude: 40.233469
Source Longitude: -80.654359

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Brooke

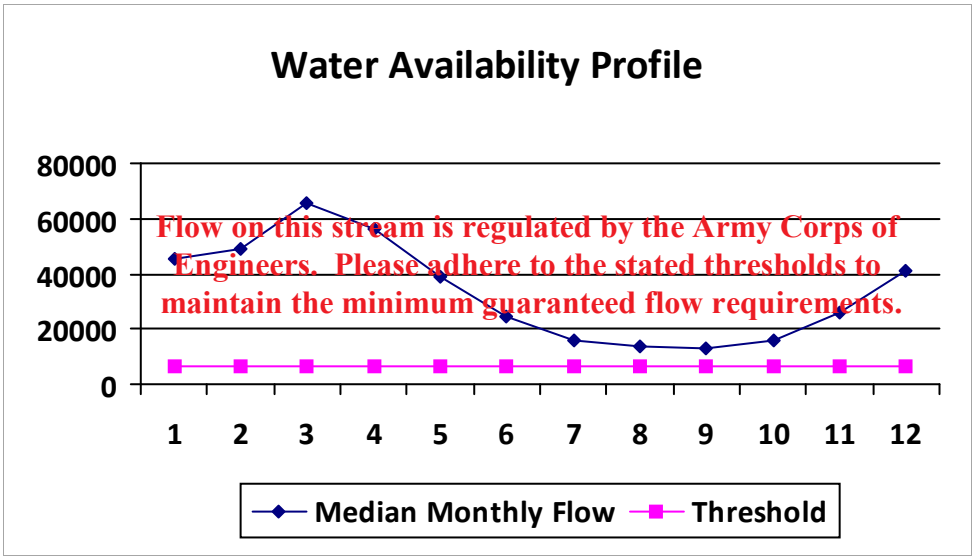
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Beech Bottom Water Dept.
- [x] Gauged Stream?

Max. Pump rate (gpm): 4,375
Max. Simultaneous Trucks: 0
Max. Truck pump rate (gpm) 0

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	9.75
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82048 | Source Name: WV Fork Fish Creek @ Francis / Loretta J. Francis

Source Latitude: 39.733295

Source Longitude: -80.579415

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 86.51 | County: Marshall

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 3,000

Max. Simultaneous Trucks:

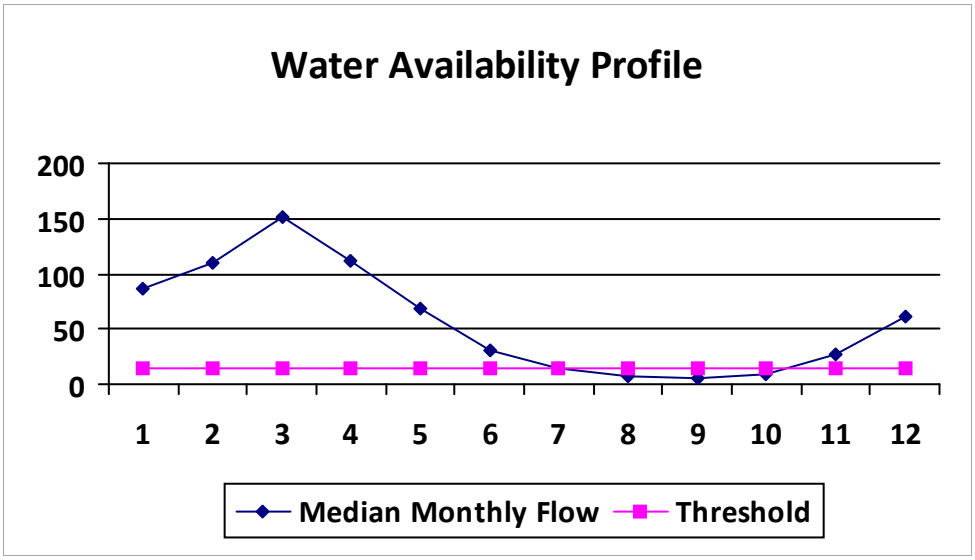
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	85.71	24.23	61.77
2	109.37	24.23	85.43
3	151.68	24.23	127.74
4	112.60	24.23	88.66
5	68.63	24.23	44.70
6	31.24	24.23	7.30
7	13.80	24.23	-10.13
8	8.07	24.23	-15.86
9	5.13	24.23	-18.80
10	8.50	24.23	-15.43
11	26.74	24.23	2.81
12	60.64	24.23	36.71



Water Availability Assessment of Location

Base Threshold (cfs)	11.70
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	6.68
Headwater Safety (cfs):	2.92
Ungauged Stream Safety (cfs):	2.92
Min. Gauge Reading (cfs):	**63.68**
Passby at Location (cfs):	**17.55**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82049 | Source Name: Ohio River @ Proctor Peacemaker

SWN Production Company, LLC

Source Latitude: 39.714299

Source Longitude: -80.825862

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 25000 | County: Wetzel

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [x] Proximate PSD? — Beech Bottom Water Dept.
- [x] Gauged Stream?

Max. Pump rate (gpm): 6,000

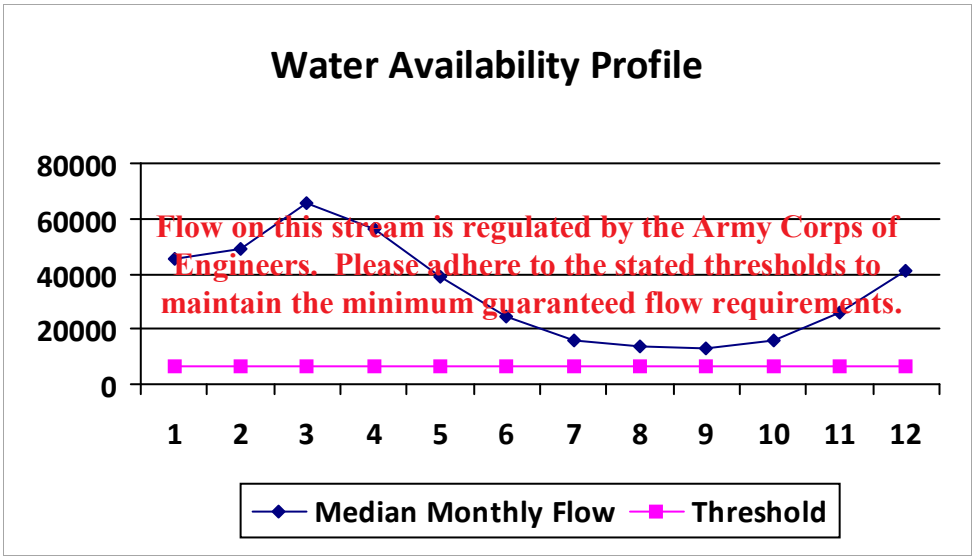
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	45,700.00	-	-
2	49,200.00	-	-
3	65,700.00	-	-
4	56,100.00	-	-
5	38,700.00	-	-
6	24,300.00	-	-
7	16,000.00	-	-
8	13,400.00	-	-
9	12,800.00	-	-
10	15,500.00	-	-
11	26,300.00	-	-
12	41,300.00	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	13.37
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	0.00
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82050 | Source Name: Booths Creek @ Reliance Minerals

Reliance Minerals, Inc.

Source Latitude: 39.530405

Source Longitude: -79.978079

HUC-8 Code: 5020003

Drainage Area (sq. mi.): 1.79 | County: Monongalia

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☑ Proximate PSD? Morgantown Utility Board
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

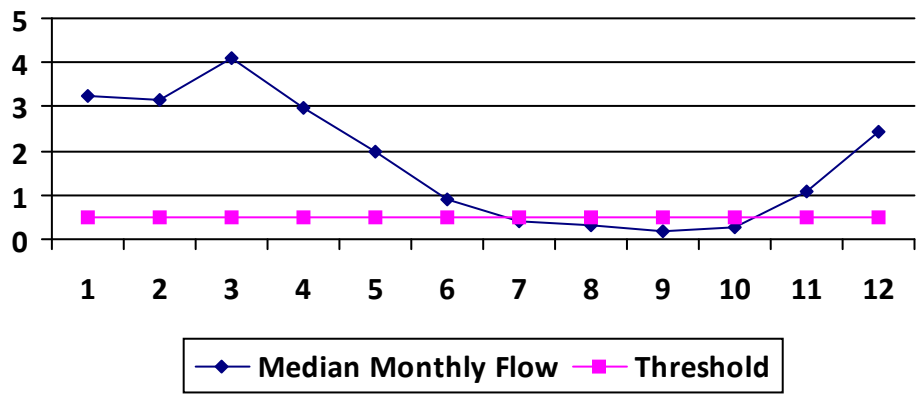
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 3062500 DECKERS CREEK AT MORGANTOWN, WV

Drainage Area (sq. mi.): 63.20 | Gauge Threshold (cfs): 14

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	3.25	5.05	-1.69
2	3.16	5.05	-1.77
3	4.12	5.05	-0.82
4	2.98	5.05	-1.96
5	1.97	5.05	-2.97
6	0.89	5.05	-4.04
7	0.41	5.05	-4.53
8	0.30	5.05	-4.64
9	0.17	5.05	-4.76
10	0.29	5.05	-4.65
11	1.08	5.05	-3.86
12	2.43	5.05	-2.50



Water Availability Assessment of Location

Base Threshold (cfs)	0.40
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.10
Ungauged Stream Safety (cfs):	0.10
Min. Gauge Reading (cfs):	**25.46**
Passby at Location (cfs):	**0.59**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82051 | Source Name: West Virginia Fork of Fish Creek @ Van Scyoc With Israel D Van Scyoc

Source Latitude: 39.6908

Source Longitude: -80.4762

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 21.96 | County: Wetzel

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [ ] Gauged Stream?

Max. Pump rate (gpm): 2,000

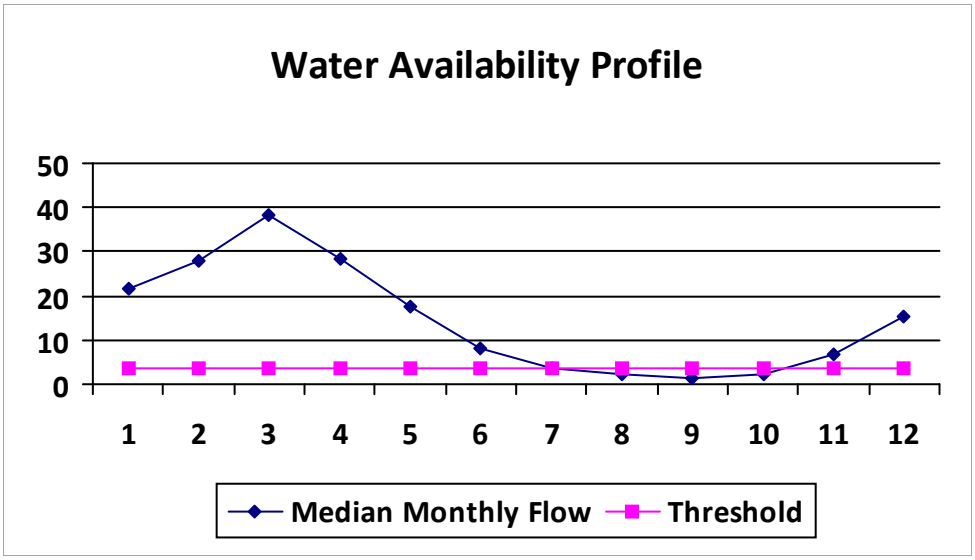
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	21.76	8.91	13.15
2	27.76	8.91	19.16
3	38.50	8.91	29.90
4	28.58	8.91	19.98
5	17.42	8.91	8.82
6	7.93	8.91	-0.67
7	3.50	8.91	-5.10
8	2.05	8.91	-6.55
9	1.30	8.91	-7.30
10	2.16	8.91	-6.44
11	6.79	8.91	-1.81
12	15.39	8.91	6.79



Water Availability Assessment of Location

Base Threshold (cfs)	2.97
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	1.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.74
Ungauged Stream Safety (cfs):	0.74
Min. Gauge Reading (cfs):	**61.46**
Passby at Location (cfs):	**5.45**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82052 | Source Name: Buffalo Creek @ Bethany VFD Withdrawal Site
Bethany Pike Volunteer Fire Department

Source Latitude: 40.253422
Source Longitude: -80.600319

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 158.69 | County: Brooke

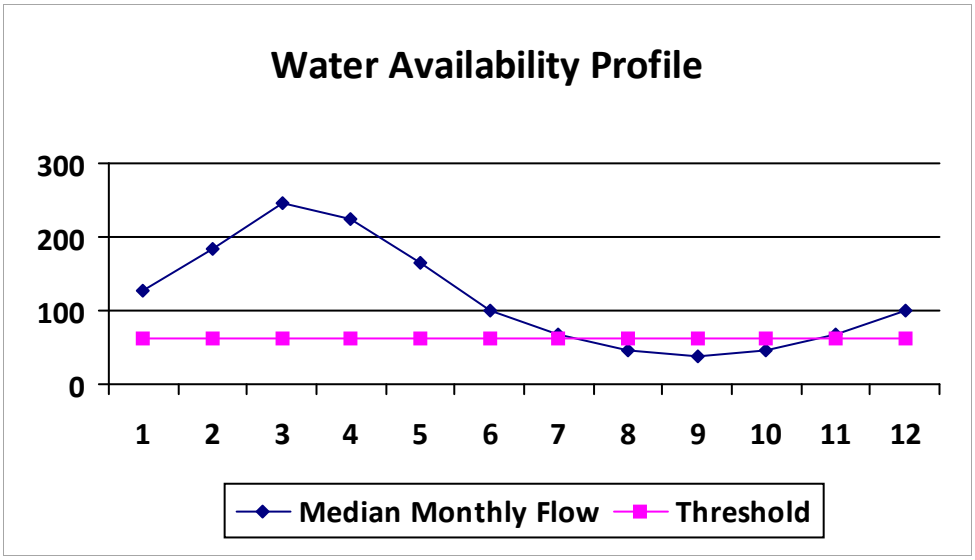
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [ ] Proximate PSD?
- [ ] Gauged Stream?

Max. Pump rate (gpm): 3,100
Max. Simultaneous Trucks: 0
Max. Truck pump rate (gpm) 0

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	128.18	81.44	46.75
2	183.60	81.44	102.17
3	245.67	81.44	164.24
4	224.32	81.44	142.88
5	165.56	81.44	84.12
6	101.06	81.44	19.63
7	66.76	81.44	-14.68
8	46.57	81.44	-34.86
9	38.15	81.44	-43.29
10	45.11	81.44	-36.32
11	66.70	81.44	-14.73
12	101.01	81.44	19.57



Water Availability Assessment of Location

Base Threshold (cfs)	49.03
Upstream Demand (cfs):	13.25
Downstream Demand (cfs):	0.00
Pump rate (cfs):	6.91
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	12.26
Min. Gauge Reading (cfs):	**67.66**
Passby at Location (cfs):	**61.28**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82053 | Source Name: Whiteday Creek @ Sorine Withdrawal Site

Andrew Sorine, Jr.

Source Latitude: 39.472311

Source Longitude: -79.977123

HUC-8 Code: 5020003

Drainage Area (sq. mi.): 12.29 | County: Marion

- ☐ Endangered Species?
- ☐ Mussel Stream?
- ☐ ZCC
- ☑ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

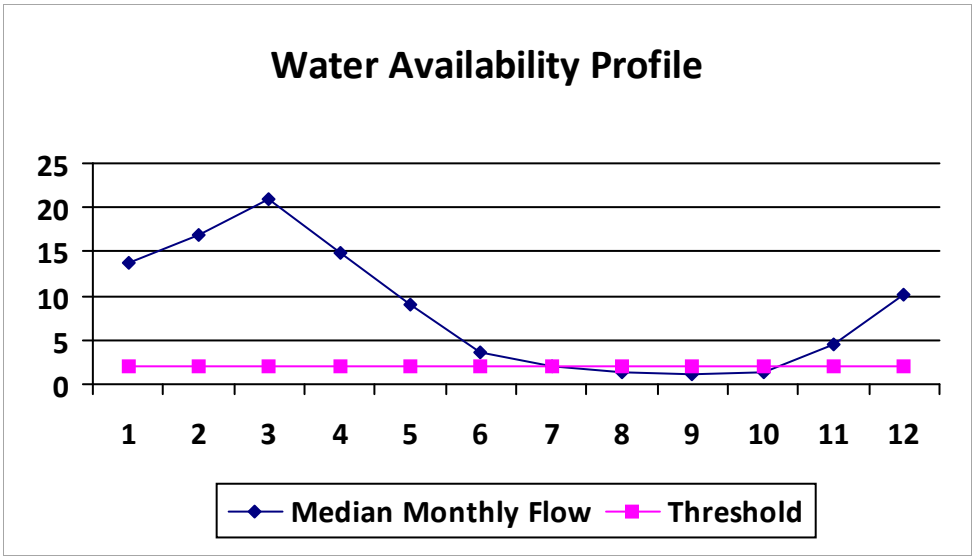
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 3061500 | BUFFALO CREEK AT BARRACKVILLE, WV

Drainage Area (sq. mi.): 116.00 | Gauge Threshold (cfs): 15

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	13.77	6.84	7.02
2	16.96	6.84	10.21
3	20.99	6.84	14.24
4	14.90	6.84	8.15
5	9.00	6.84	2.25
6	3.55	6.84	-3.20
7	1.98	6.84	-4.77
8	1.38	6.84	-5.37
9	1.02	6.84	-5.73
10	1.31	6.84	-5.44
11	4.54	6.84	-2.21
12	10.18	6.84	3.43



Water Availability Assessment of Location

Base Threshold (cfs)	1.59
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.40
Ungauged Stream Safety (cfs):	0.40
Min. Gauge Reading (cfs):	**26.96**
Passby at Location (cfs):	**2.38**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82054 | Source Name: Buffalo Creek @ DNR
SWN Water Resources Company, LLC

Source Latitude: 40.19386
Source Longitude: -80.525796

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 98.28 | County: Brooke

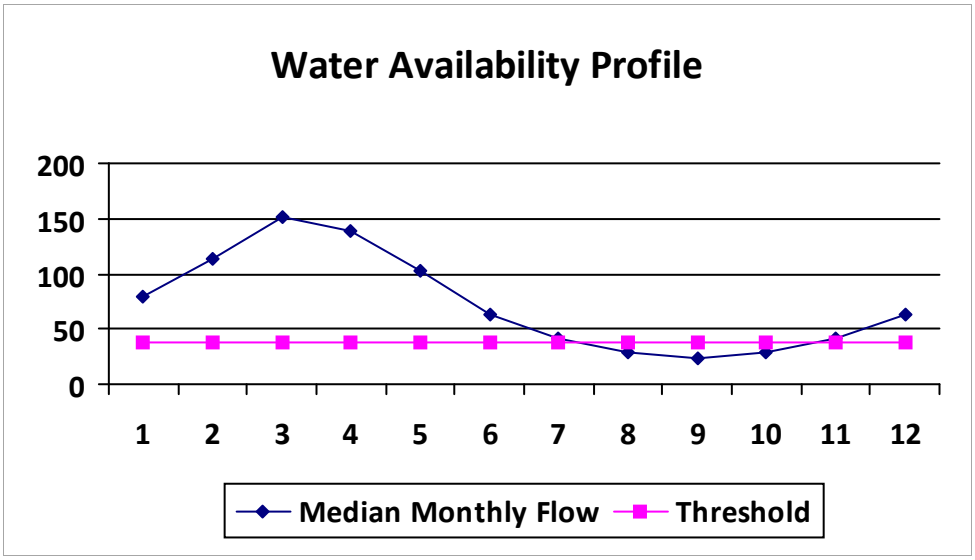
- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 3,200
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	79.39	45.08	34.65
2	113.71	45.08	68.97
3	152.15	45.08	107.41
4	138.92	45.08	94.18
5	102.53	45.08	57.79
6	62.59	45.08	17.85
7	41.34	45.08	-3.40
8	28.84	45.08	-15.90
9	23.62	45.08	-21.12
10	27.94	45.08	-16.80
11	41.31	45.08	-3.43
12	62.56	45.08	17.82



Water Availability Assessment of Location

Base Threshold (cfs)	30.36
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	5.57
Pump rate (cfs):	7.13
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	7.59
Min. Gauge Reading (cfs):	**54.63**
Passby at Location (cfs):	**43.52**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82055 | Source Name: Fish Creek @ Gribben
Revocable Living Trust of M. Peggy Gribben

Source Latitude: 39.753271
Source Longitude: -80.597913

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 141.61 | County: Marshall

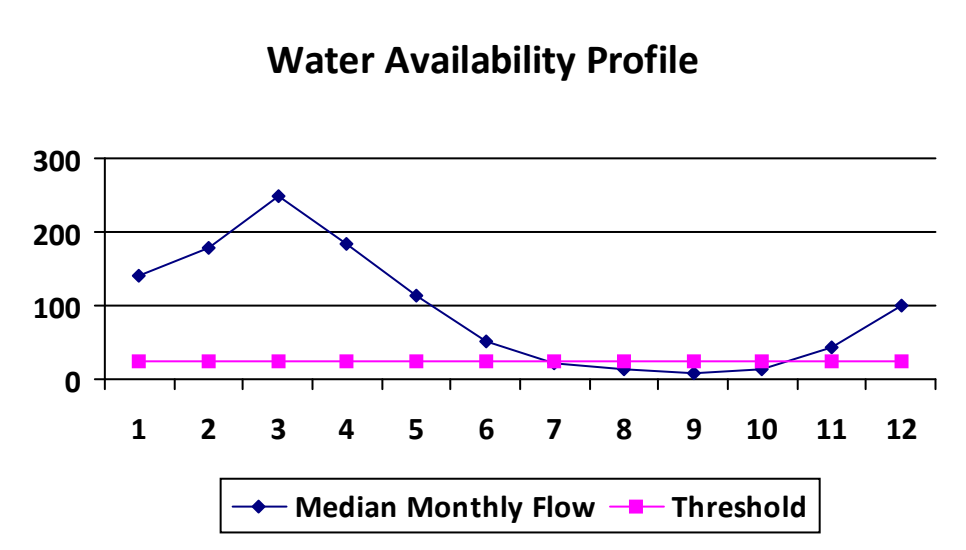
- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 4,200
Max. Simultaneous Trucks: 0
Max. Truck pump rate (gpm) 0

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	140.29	33.30	107.15
2	179.02	33.30	145.88
3	248.28	33.30	215.14
4	184.31	33.30	151.17
5	112.35	33.30	79.20
6	51.13	33.30	17.99
7	22.60	33.30	-10.55
8	13.22	33.30	-19.93
9	8.40	33.30	-24.75
10	13.92	33.30	-19.23
11	43.78	33.30	10.63
12	99.26	33.30	66.12



Water Availability Assessment of Location

Base Threshold (cfs)	19.15
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.79
Min. Gauge Reading (cfs):	**56.86**
Passby at Location (cfs):	**23.94**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP	02427	API/ID Number	see overview	Operator:	SWN Production Company, LLC
Plan Type:	Well Pad		Charles Jamison MSH Well Pad		

Source ID: 82056 Source Name: Buffalo Creek @ Forney
Forney & Sons Holding Company, LLC

Source Latitude: 40.193453
Source Longitude: -80.52175

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 98.28 County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

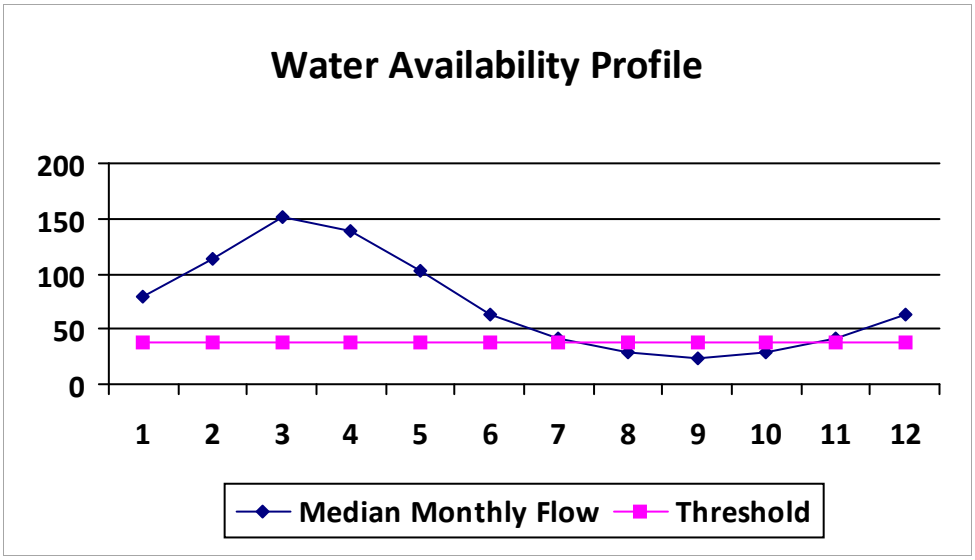
Max. Pump rate (gpm): 2,500
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	79.39	43.52	36.21
2	113.71	43.52	70.53
3	152.15	43.52	108.97
4	138.92	43.52	95.74
5	102.53	43.52	59.35
6	62.59	43.52	19.41
7	41.34	43.52	-1.84
8	28.84	43.52	-14.34
9	23.62	43.52	-19.56
10	27.94	43.52	-15.24
11	41.31	43.52	-1.87
12	62.56	43.52	19.37



Water Availability Assessment of Location

Base Threshold (cfs)	30.36
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	5.57
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	7.59
Min. Gauge Reading (cfs):	**53.07**
Passby at Location (cfs):	**43.52**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82057 | Source Name: Buffalo Creek @ Fuchs / Beverly Fuchs

Source Latitude: 40.258863

Source Longitude: -80.60337

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 163.22 | County: Brooke

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [ ] Gauged Stream?

Max. Pump rate (gpm): 5,250

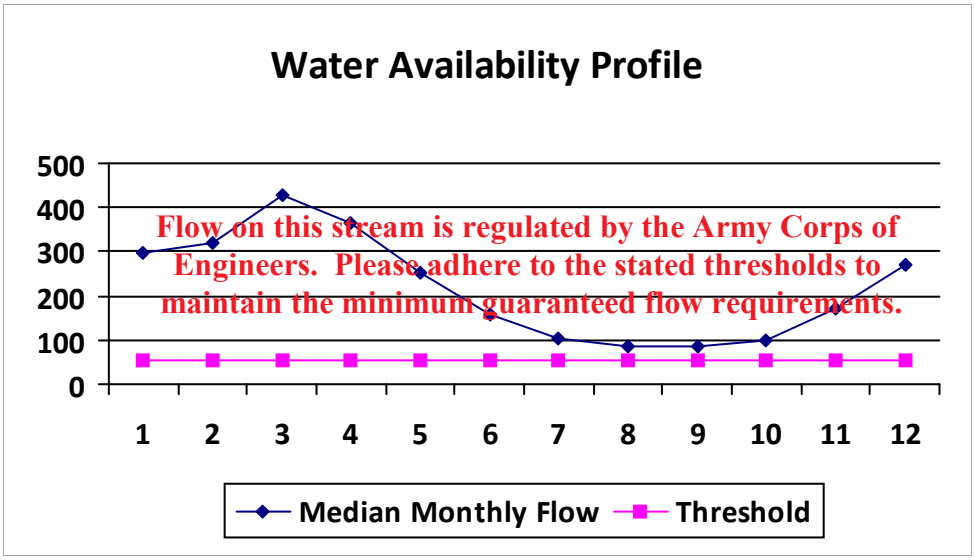
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	298.37	-	-
2	321.22	-	-
3	428.94	-	-
4	366.27	-	-
5	252.66	-	-
6	158.65	-	-
7	104.46	-	-
8	87.49	-	-
9	83.57	-	-
10	101.20	-	-
11	171.71	-	-
12	269.64	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	11.70
Headwater Safety (cfs):	10.56
Ungauged Stream Safety (cfs):	10.56
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82058 | Source Name: Buffalo Creek @ Greathouse Withdrawal Site / Linda Greathouse

Source Latitude: 40.20895

Source Longitude: -80.60105

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 138.56 | County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 3,300

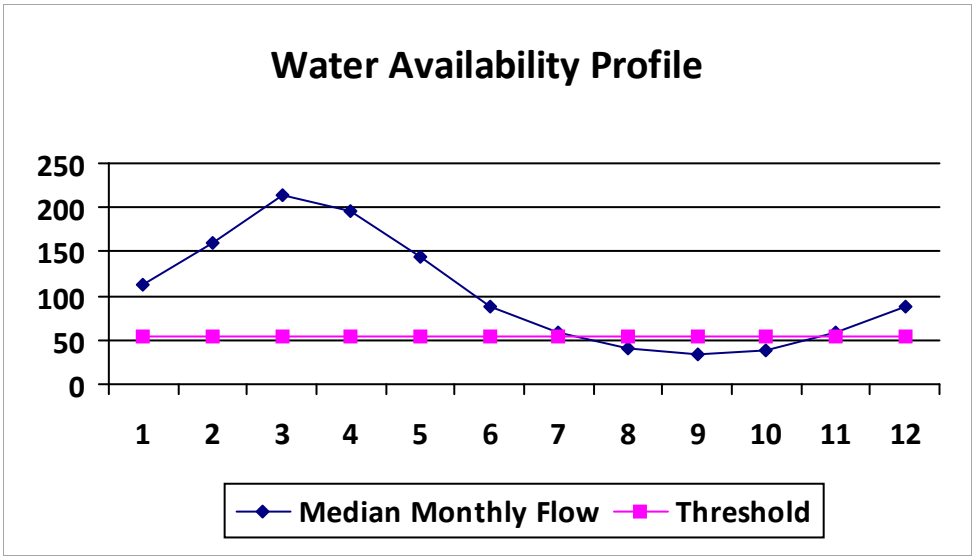
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	111.92	66.43	45.74
2	160.31	66.43	94.13
3	214.51	66.43	148.32
4	195.86	66.43	129.68
5	144.56	66.43	78.37
6	88.24	66.43	22.06
7	58.29	66.43	-7.90
8	40.66	66.43	-25.52
9	33.31	66.43	-32.88
10	39.39	66.43	-26.79
11	58.24	66.43	-7.94
12	88.19	66.43	22.01



Water Availability Assessment of Location

Base Threshold (cfs)	42.81
Upstream Demand (cfs):	5.57
Downstream Demand (cfs):	1.00
Pump rate (cfs):	7.35
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	10.70
Min. Gauge Reading (cfs):	**60.42**
Passby at Location (cfs):	**54.51**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82059 | Source Name: Buffalo Creek @ Labelle Farms / Steve Paul

Source Latitude: 40.204444

Source Longitude: -80.598645

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 136.79 | County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 5,250

Max. Simultaneous Trucks: 0

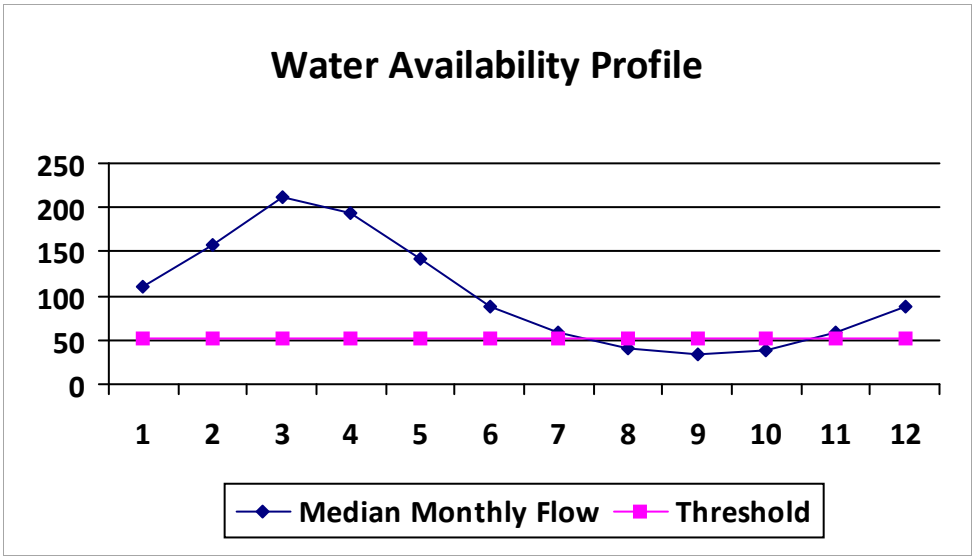
Max. Truck pump rate (gpm) 0

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	110.49	64.52	46.05
2	158.27	64.52	93.82
3	211.77	64.52	147.33
4	193.36	64.52	128.92
5	142.71	64.52	78.27
6	87.12	64.52	22.67
7	57.54	64.52	-6.90
8	40.14	64.52	-24.30
9	32.88	64.52	-31.56
10	38.89	64.52	-25.55
11	57.50	64.52	-6.95
12	87.07	64.52	22.62



Water Availability Assessment of Location

Base Threshold (cfs)	42.26
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.98
Pump rate (cfs):	11.70
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	10.57
Min. Gauge Reading (cfs):	**59.20**
Passby at Location (cfs):	**53.81**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82060 | Source Name: Buffalo Creek @ Worthley Withdrawal Site
Kimberly C. Worthley

Source Latitude: 40.210978
Source Longitude: -80.548779

HUC-8 Code: 5030106

Drainage Area (sq. mi.) 113.49 | County: Brooke

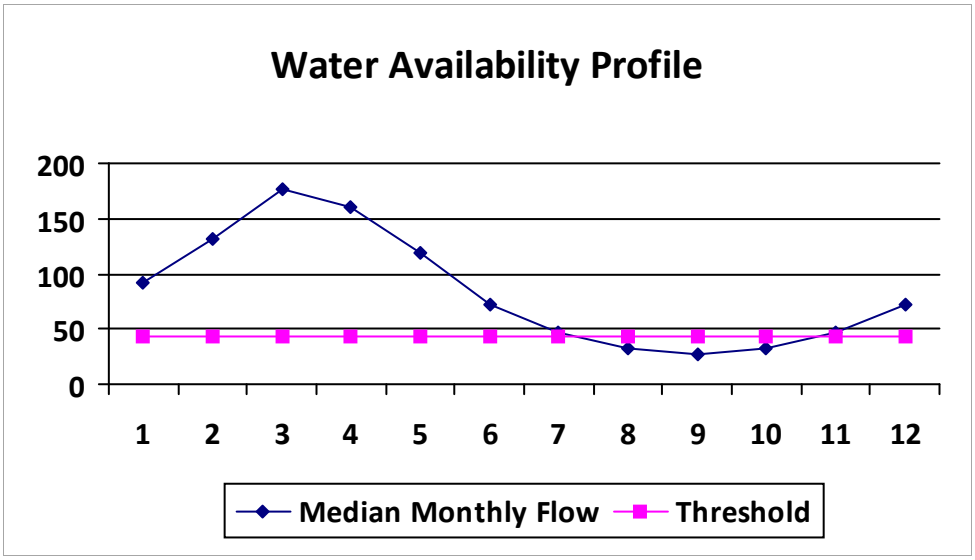
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [ ] Regulated Stream?
- [x] Proximate PSD? Hammond PSD
- [ ] Gauged Stream?

Max. Pump rate (gpm): 2,500
Max. Simultaneous Trucks: 0
Max. Truck pump rate (gpm) 0

Reference Gauge: 3111500 SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	91.67	49.40	42.38
2	131.31	49.40	82.01
3	175.70	49.40	126.40
4	160.42	49.40	111.13
5	118.40	49.40	69.11
6	72.28	49.40	22.98
7	47.74	49.40	-1.55
8	33.31	49.40	-15.99
9	27.28	49.40	-22.02
10	32.26	49.40	-17.03
11	47.70	49.40	-1.59
12	72.24	49.40	22.94



Water Availability Assessment of Location

Base Threshold (cfs)	35.06
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	1.00
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	8.77
Min. Gauge Reading (cfs):	**53.07**
Passby at Location (cfs):	**44.83**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82061 | Source Name: Buffalo Creek @ WVDOH
West Virginia Division of Highways

Source Latitude: 40.258863
Source Longitude: -80.60337

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 163.22 | County: Brooke

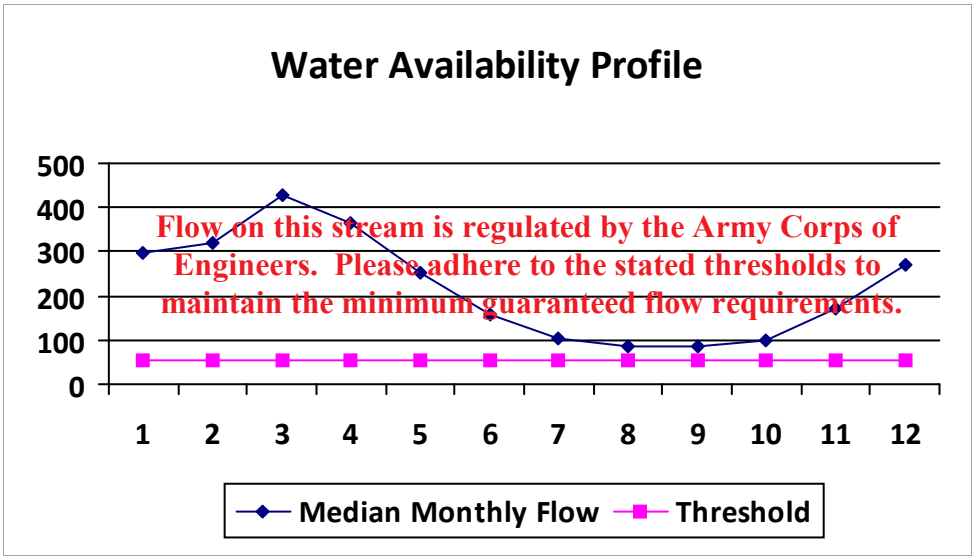
- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [ ] Gauged Stream?

Max. Pump rate (gpm): 3,360
Max. Simultaneous Trucks:
Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	298.37	-	-
2	321.22	-	-
3	428.94	-	-
4	366.27	-	-
5	252.66	-	-
6	158.65	-	-
7	104.46	-	-
8	87.49	-	-
9	83.57	-	-
10	101.20	-	-
11	171.71	-	-
12	269.64	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	7.49
Headwater Safety (cfs):	10.56
Ungauged Stream Safety (cfs):	10.56
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82062 | Source Name: Buffalo Creek @ Zatta / Edward Zatta

Source Latitude: 40.253588

Source Longitude: -80.600254

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 158.69 | County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,520

Max. Simultaneous Trucks: 0

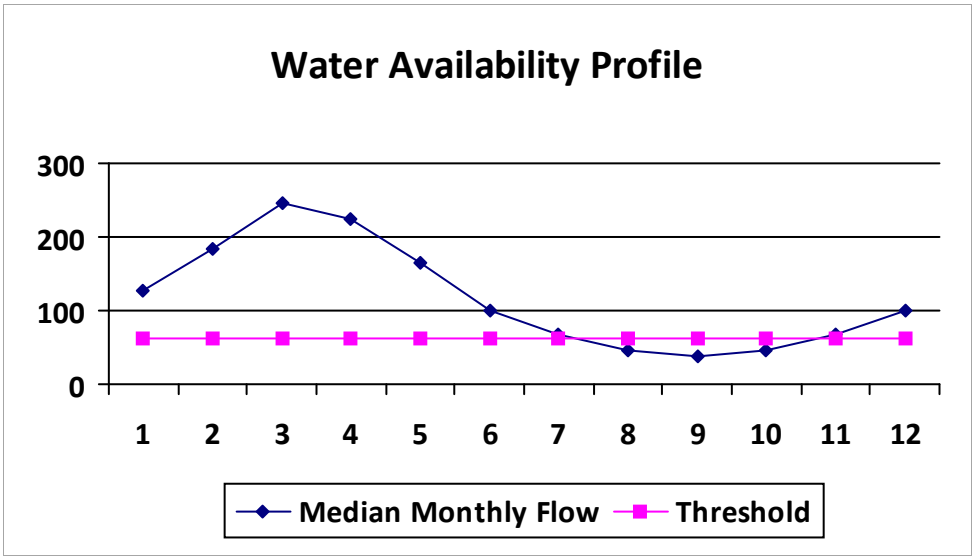
Max. Truck pump rate (gpm) 0

Reference Gauge: 3111500 | SHORT CREEK NEAR DILLONVALE, OH

Drainage Area (sq. mi.): 123.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	128.18	80.15	48.04
2	183.60	80.15	103.46
3	245.67	80.15	165.53
4	224.32	80.15	144.17
5	165.56	80.15	85.42
6	101.06	80.15	20.92
7	66.76	80.15	-13.39
8	46.57	80.15	-33.57
9	38.15	80.15	-42.00
10	45.11	80.15	-35.03
11	66.70	80.15	-13.44
12	101.01	80.15	20.87



Water Availability Assessment of Location

Base Threshold (cfs)	49.03
Upstream Demand (cfs):	13.25
Downstream Demand (cfs):	0.00
Pump rate (cfs):	5.61
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	12.26
Min. Gauge Reading (cfs):	**66.36**
Passby at Location (cfs):	**61.28**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82063 | Source Name: Cross Creek @ Bullock Withdrawal Site / Isabelle Bullock

Source Latitude: 40.30735

Source Longitude: -80.569317

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 74.66 | County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,500

Max. Simultaneous Trucks:

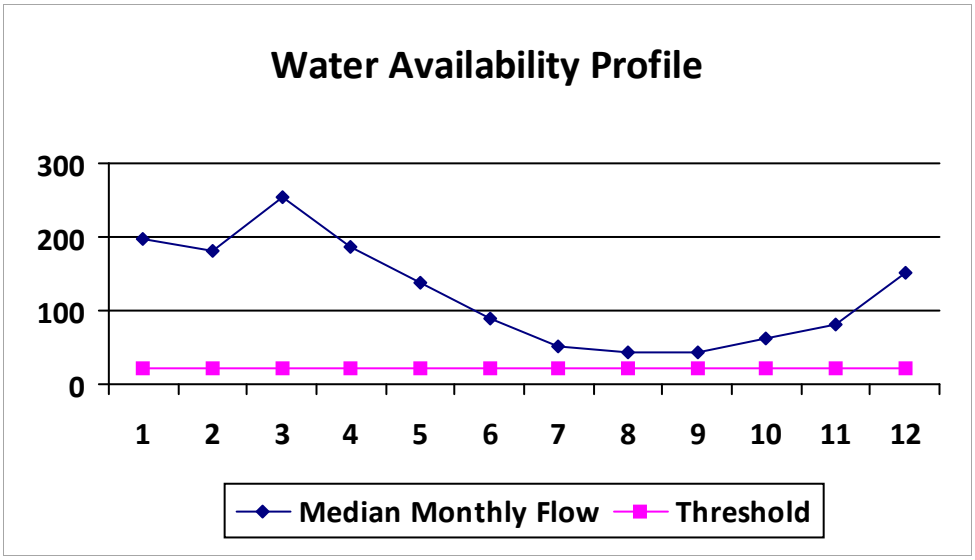
Max. Truck pump rate (gpm)

Reference Gauge: 3110830 | KINGS CREEK AT WEIRTON, WV

Drainage Area (sq. mi.): 48.90

Gauge Threshold (cfs): 11

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	195.97	26.56	169.48
2	180.05	26.56	153.56
3	253.89	26.56	227.40
4	186.52	26.56	160.03
5	138.84	26.56	112.35
6	89.57	26.56	63.08
7	50.78	26.56	24.29
8	42.06	26.56	15.57
9	43.77	26.56	17.28
10	61.47	26.56	34.98
11	81.23	26.56	54.74
12	151.05	26.56	124.56



Water Availability Assessment of Location

Base Threshold (cfs)	16.79
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	5.57
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.20
Min. Gauge Reading (cfs):	**19.32**
Passby at Location (cfs):	**20.99**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82064 | Source Name: Cross Creek @ DNR / WVDNR

Source Latitude: 40.300536

Source Longitude: -80.542229

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 68.58 | County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 3,000

Max. Simultaneous Trucks:

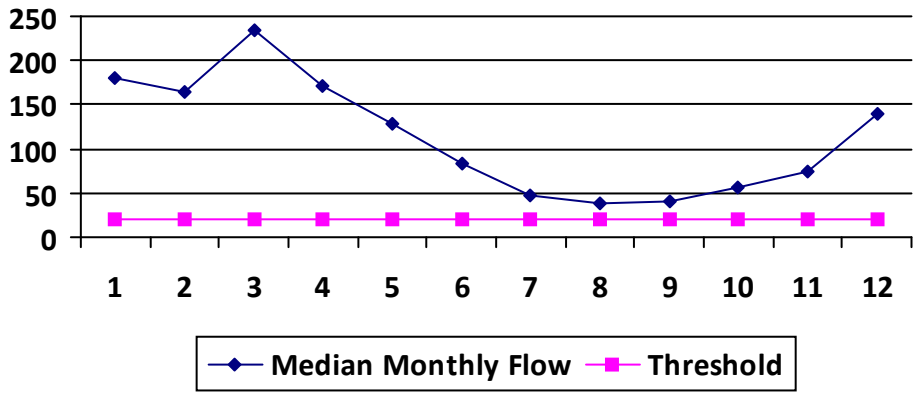
Max. Truck pump rate (gpm)

Reference Gauge: 3110830 | KINGS CREEK AT WEIRTON, WV

Drainage Area (sq. mi.): 48.90

Gauge Threshold (cfs): 11

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	180.01	25.97	154.07
2	165.39	25.97	139.45
3	233.21	25.97	207.27
4	171.33	25.97	145.39
5	127.53	25.97	101.59
6	82.28	25.97	56.34
7	46.64	25.97	20.70
8	38.64	25.97	12.69
9	40.20	25.97	14.26
10	56.46	25.97	30.52
11	74.61	25.97	48.67
12	138.75	25.97	112.81



Water Availability Assessment of Location

Base Threshold (cfs)	15.43
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	6.68
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	3.86
Min. Gauge Reading (cfs):	**20.43**
Passby at Location (cfs):	**19.28**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82065 | Source Name: Cross Creek @ Norfolk and Western Railway / Wheeling & Lake Erie Railway Company

Source Latitude: 40.30802

Source Longitude: -80.599193

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 79.78 | County: Brooke

- [ ] Endangered Species?
- [x] Mussel Stream?
- [ ] ZCC
- [ ] Trout Stream?
- [ ] Tier 3?
- [ ] WH
- [x] Regulated Stream? — Ohio River Min. Flow
- [ ] Proximate PSD?
- [ ] Gauged Stream?

Max. Pump rate (gpm): 5,250

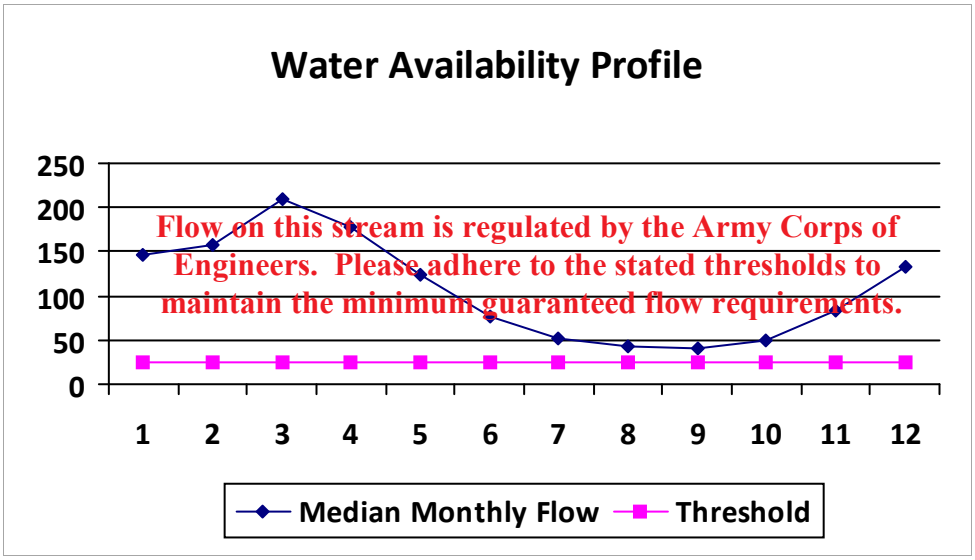
Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

Reference Gauge: 9999999 | Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.): 25,000.00 | Gauge Threshold (cfs): 6468

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	145.84	-	-
2	157.01	-	-
3	209.66	-	-
4	179.03	-	-
5	123.50	-	-
6	77.55	-	-
7	51.06	-	-
8	42.76	-	-
9	40.85	-	-
10	49.46	-	-
11	83.93	-	-
12	131.80	-	-



Water Availability Assessment of Location

Base Threshold (cfs)	-
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	11.70
Headwater Safety (cfs):	5.16
Ungauged Stream Safety (cfs):	5.16
Min. Gauge Reading (cfs):	-
Passby at Location (cfs):	-

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82066 | Source Name: Cross Creek @ Palizzi / Campbell Palizzi

Source Latitude: 40.302427

Source Longitude: -80.582753

HUC-8 Code: 5030101

Drainage Area (sq. mi.): 79.78 | County: Brooke

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

Max. Simultaneous Trucks:

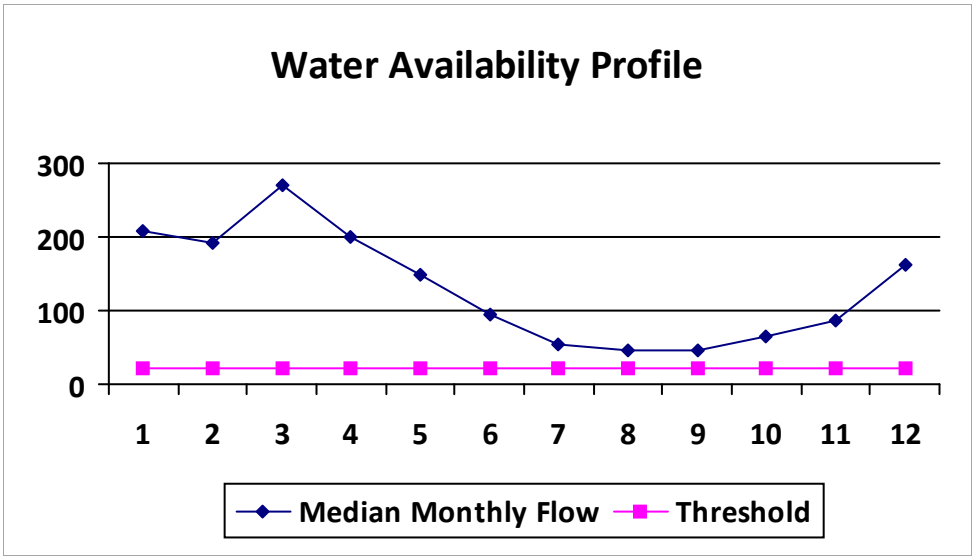
Max. Truck pump rate (gpm)

Reference Gauge: 3110830 | KINGS CREEK AT WEIRTON, WV

Drainage Area (sq. mi.): 48.90

Gauge Threshold (cfs): 11

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	209.41	31.79	177.64
2	192.40	31.79	160.62
3	271.30	31.79	239.53
4	199.31	31.79	167.54
5	148.36	31.79	116.59
6	95.71	31.79	63.94
7	54.26	31.79	22.49
8	44.94	31.79	13.17
9	46.77	31.79	14.99
10	65.68	31.79	33.91
11	86.80	31.79	55.02
12	161.41	31.79	129.64



Water Availability Assessment of Location

Base Threshold (cfs)	17.95
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.49
Min. Gauge Reading (cfs):	**23.11**
Passby at Location (cfs):	**22.43**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82067 | Source Name: WV Fork Fish Creek @ Derby / Steven Derby

Source Latitude: 39.709329

Source Longitude: -80.536079

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 48.62 | County: Wetzel

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

Max. Simultaneous Trucks:

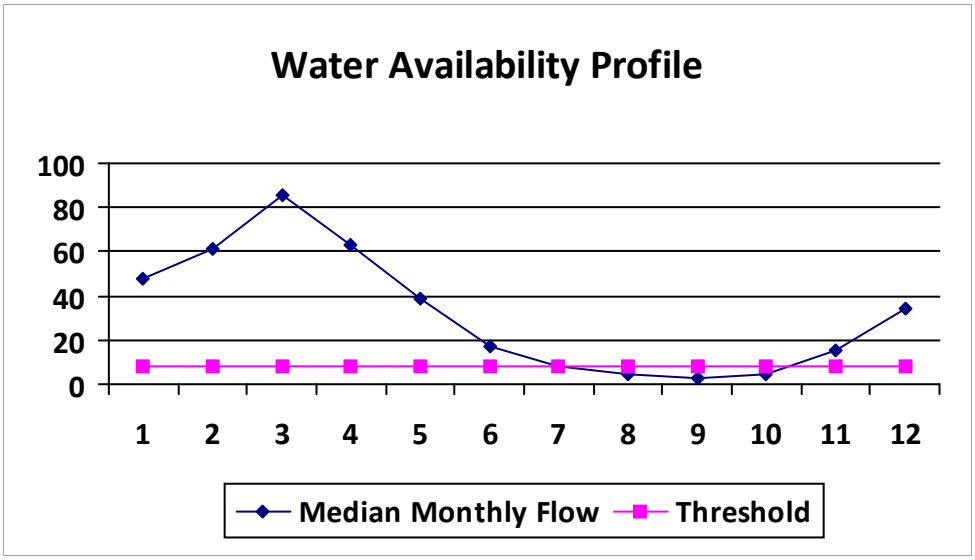
Max. Truck pump rate (gpm)

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00

Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	48.17	20.22	28.06
2	61.47	20.22	41.36
3	85.25	20.22	65.14
4	63.28	20.22	43.18
5	38.57	20.22	18.47
6	17.56	20.22	-2.55
7	7.76	20.22	-12.35
8	4.54	20.22	-15.57
9	2.88	20.22	-17.22
10	4.78	20.22	-15.33
11	15.03	20.22	-5.08
12	34.08	20.22	13.97



Water Availability Assessment of Location

Base Threshold (cfs)	6.57
Upstream Demand (cfs):	1.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	9.36
Headwater Safety (cfs):	1.64
Ungauged Stream Safety (cfs):	1.64
Min. Gauge Reading (cfs):	**67.36**
Passby at Location (cfs):	**9.86**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82068 | Source Name: Fish Creek @ Guzek / Walter A. Guzek

Source Latitude: 39.753021

Source Longitude: -80.613941

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 144.57 | County: Marshall

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 4,200

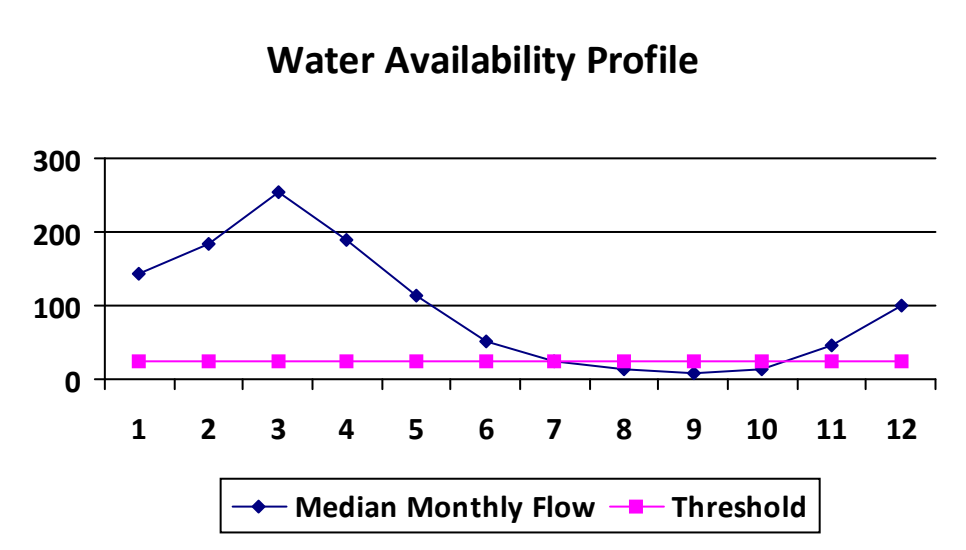
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	143.23	33.80	109.60
2	182.77	33.80	149.14
3	253.47	33.80	219.85
4	188.16	33.80	154.54
5	114.70	33.80	81.07
6	52.20	33.80	18.58
7	23.07	33.80	-10.56
8	13.49	33.80	-20.13
9	8.57	33.80	-25.05
10	14.21	33.80	-19.42
11	44.69	33.80	11.07
12	101.34	33.80	67.71



Water Availability Assessment of Location

Base Threshold (cfs)	19.55
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	9.36
Headwater Safety (cfs):	0.00
Ungauged Stream Safety (cfs):	4.89
Min. Gauge Reading (cfs):	**56.86**
Passby at Location (cfs):	**24.44**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

MODIFICATION **Effective: 12/14/2021**

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

Source ID: 82069 | Source Name: Little Wheeling Creek @ Edge Withdrawal Site / Alice Mae Edge

Source Latitude: 40.098

Source Longitude: -80.5558

HUC-8 Code: 5030106

Drainage Area (sq. mi.): 4.26 | County: Ohio

- ☐ Endangered Species?
- ☑ Mussel Stream?
- ☐ ZCC
- ☐ Trout Stream?
- ☐ Tier 3?
- ☐ WH
- ☐ Regulated Stream?
- ☐ Proximate PSD?
- ☐ Gauged Stream?

Max. Pump rate (gpm): 2,000

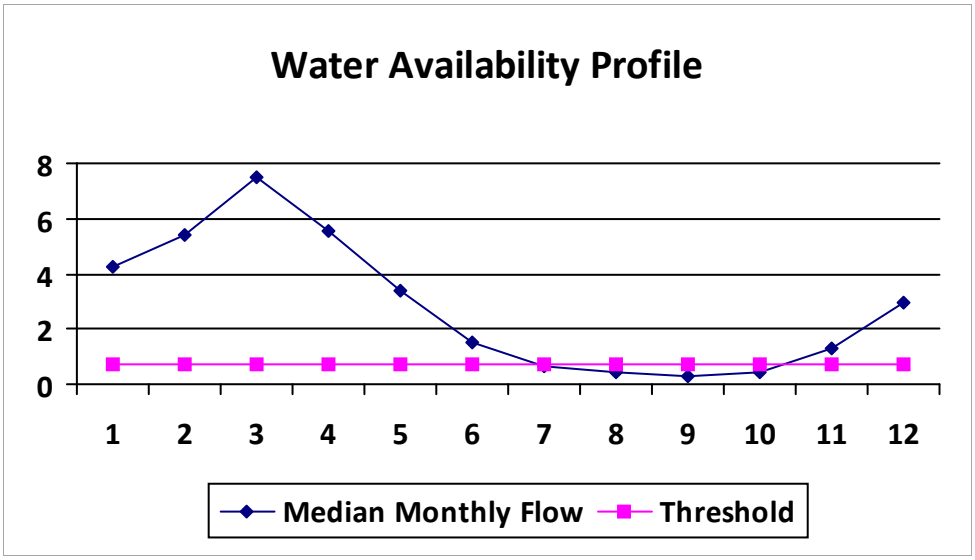
Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm) 0

Reference Gauge: 3112000 | WHEELING CREEK AT ELM GROVE, WV

Drainage Area (sq. mi.): 281.00 | Gauge Threshold (cfs): 38

Month	Median monthly flow (cfs)	Threshold (+ pump rate)	Estimated Available water (cfs)
1	4.22	5.32	-0.90
2	5.39	5.32	0.26
3	7.47	5.32	2.34
4	5.54	5.32	0.42
5	3.38	5.32	-1.74
6	1.54	5.32	-3.59
7	0.68	5.32	-4.44
8	0.40	5.32	-4.73
9	0.25	5.32	-4.87
10	0.42	5.32	-4.71
11	1.32	5.32	-3.81
12	2.99	5.32	-2.14



Water Availability Assessment of Location

Base Threshold (cfs)	0.58
Upstream Demand (cfs):	0.00
Downstream Demand (cfs):	0.00
Pump rate (cfs):	4.46
Headwater Safety (cfs):	0.14
Ungauged Stream Safety (cfs):	0.14
Min. Gauge Reading (cfs):	**61.46**
Passby at Location (cfs):	**0.86**

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Water Management Plan:
Secondary Water Sources

WMP 02427 | API/ID Number: see overview | Operator: SWN Production Company, LLC

Plan Type: Well Pad | Charles Jamison MSH Well Pad

MODIFICATION **Effective: 12/14/2021**

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Centralized Freshwater Impoundment

Source ID: 82099 Source Name: Ballato Freshwater Impoundment

Source Lat: 40.308611 Source Long: -80.565028 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-1877

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82100 Source Name: Barry Greathouse Freshwater Impoundment

Source Lat: 40.18831 Source Long: -80.63714 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1869**

Source ID: 82102 Source Name: Corbin Freshwater Impoundment

Source Lat: 40.233122 Source Long: -80.524025 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1870**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82103 Source Name: Durig A Freshwater Impoundment

Source Lat: 39.715905 Source Long: -80.636785 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1862**

Source ID: 82104 Source Name: Durig B Freshwater Impoundment

Source Lat: 38.8022 Source Long: -80.638491 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1863**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82105 Source Name: Elmer Freshwater Impoundment

Source Lat: 38.831351 Source Long: -80.276326 County: Upshur

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1847**

Source ID: 82106 Source Name: Farmer Freshwater Impoundment

Source Lat: 40.146183 Source Long: -80.573857 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1871**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82107 Source Name: Ferrell Freshwater Impoundment

Source Lat: 40.04445 Source Long: -80.53023 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1874**

Source ID: 82108 Source Name: Heartwood Forestland Freshwater Impoundment

Source Lat: 39.123961 Source Long: -81.098573 County: Ritchie

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1878**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82109 Source Name: Helen Miller Freshwater Impoundment

Source Lat: 40.085722 Source Long: -80.623333 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1059**

Source ID: 82110 Source Name: Hickman Freshwater Impoundment

Source Lat: 40.041361 Source Long: -80.548944 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1875**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82115 Source Name: Hupp 1 Freshwater Impoundment

Source Lat: 40.175058 Source Long: -80.567622 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1873**

Source ID: 82116 Source Name: Hupp 2 Freshwater Impoundment

Source Lat: 40.175069 Source Long: -80.578206 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1058**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82117 Source Name: Kelley #2 Freshwater Impoundment

Source Lat: 39.681388 Source Long: -80.701113 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1865**

Source ID: 82118 Source Name: Kestner Freshwater Impoundment

Source Lat: 40.147904 Source Long: -80.539568 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1872**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82119 Source Name: Linda Greathouse Freshwater Impoundment

Source Lat: 40.205416 Source Long: -80.608805 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1876**

Source ID: 82120 Source Name: Lipps Freshwater Impoundment

Source Lat: 38.8446 Source Long: -80.3413 County: Upshur

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1850**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82121 Source Name: McGlumphy Freshwater Impoundment

Source Lat: 40.152588 Source Long: -80.587667 County: Ohio

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1060**

Source ID: 82122 Source Name: Messenger Freshwater Impoundment

Source Lat: 393674857 Source Long: -80.689887 County: Wetzel

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1859**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82123 Source Name: Reliance Minerals A Freshwater Impoundment

Source Lat: 39.521316 Source Long: -79.973907 County: Monongalia

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1868**

Source ID: 82124 Source Name: Reliance Minerals B Freshwater Impoundment

Source Lat: 39.524571 Source Long: -79.974529 County: Monongalia

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1867**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82125 Source Name: Ross #2 Freshwater Impoundment

Source Lat: 38.9839 Source Long: -80.2628 County: Upshur

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1851**

Source ID: 82126 Source Name: Stern Freshwater Impoundment

Source Lat: 39.733943 Source Long: -80.64695 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1826**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82127 Source Name: Worthley Freshwater Impoundment

Source Lat: 40.216869 Source Long: -80.548592 County: Brooke

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1061**

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Purchased Water

Source ID: 82070 Source Name: 4K Industrial Park, LLC
Commercial Supplier

Source Lat: 40.100395 Source Long: -80.71269 County: Belmont, OH

Max. Daily Purchase (gal) 588,000

DEP Comments: Treated and recycled flowback/produced water

Source ID: 82074 Source Name: Elite Gasfield Services, Midland Borough
Commercial Supplier

Source Lat: 40.644598 Source Long: -80.469382 County:

Max. Daily Purchase (gal) 2,000,000

DEP Comments: Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82076 Source Name: Equitrans Water Services, LLC Cook Impoundment
Commercial Supplier

Source Lat: 39.817197 Source Long: -80.477956 County: Greene, PA

Max. Daily Purchase (gal) 2,100,000

DEP Comments: PA DEP WMP-317902-5 Please ensure that purchases from this facility are in compliance with all applicable rules and regulations established by PADEP.

Source ID: 82078 Source Name: Grant Town Water
Public Water Provider

Source Lat: 39.559407 Source Long: -80.172893 County: Marion

Max. Daily Purchase (gal) 100,000

DEP Comments: @ Horizon Ventures Withdrawal Location

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82079 Source Name: Hydro Recovery, LP

Commercial Supplier

Source Lat: 40.419251 Source Long: -80.422684 County: Washington, MD

Max. Daily Purchase (gal) 1,000,000

DEP Comments: Treated and recycled flowback/produced water

Source ID: 82086 Source Name: Pennsylvania American Water

Public Water Provider

Source Lat: Source Long: County:

Max. Daily Purchase (gal) 864,000

DEP Comments: Please ensure that the sourcing of this water confirms to all rules and guidance provided by PA DEP.

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

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•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82088 Source Name: Raw Water Pond @ Horizon Ventures Industrial Facility

Source Lat: 39.5535 Source Long: -80.16742 County: Marion

Max. Daily Purchase (gal) 1,008,000

DEP Comments:

Source ID: 82089 Source Name: Robinson Fork @ HG Energy Oil & Gas Operator

Source Lat: 39.979222 Source Long: -80.487472 County: Washington, MD

Max. Daily Purchase (gal) 1,600,000

DEP Comments:

Important:

MODIFICATION Effective: 12/14/2021

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•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82093 Source Name: Washington Pike PSD @ Brook Hills Park
Public Water Provider

Source Lat: 40.26632 Source Long: -80.543592 County: Brooke

Max. Daily Purchase (gal) 1,000,000

DEP Comments:

Source ID: 82094 Source Name: WFN Impoundment A @ HG Energy
Oil & Gas Operator

Source Lat: 39.991417 Source Long: -80.488694 County: Washington, PA

Max. Daily Purchase (gal) 1,600,000

DEP Comments:

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82095 Source Name: WFN Impoundment B @ HG Energy
Oil & Gas Operator

Source Lat: 39.991917 Source Long: -80.4965 County: Washington, PA

Max. Daily Purchase (gal) 1,600,000

DEP Comments:

Source ID: 82101 Source Name: Columbia Gas Transmission (TCO Elson) FWI

Source Lat: 39.75398 Source Long: -80.613604 County: Marshall

Max. Daily Purchase (gal)

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-547**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82111 Source Name: Hieronimus #1 Freshwater Impoundment

Source Lat: 39.811 Source Long: -80.5212 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1856**

Source ID: 82112 Source Name: Hieronimus #2 Freshwater Impoundment

Source Lat: 39.8149 Source Long: -80.5233 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1857**

WMP 02427	API/ID Number: see overview	Operator: SWN Production Company, LLC
Plan Type: Well Pad	Charles Jamison MSH Well Pad	

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Source ID: 82113 Source Name: Hieronimus #3 Freshwater Impoundment

Source Lat: 39.8162 Source Long: -80.5266 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1761**

Source ID: 82114 Source Name: Hieronimus #4 Freshwater Impoundment

Source Lat: 39.8198 Source Long: -80.5295 County: Marshall

Max. Daily Purchase (gal):

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted. **Reference: WMP-1858**

Important: **MODIFICATION** **Effective: 12/14/2021**

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Recycled Frac Water

Source ID: 82128 Source Name: Various

Source Lat: Source Long: County:

Max. Daily Purchase (gal):

DEP Comments: Various sources include, but are not limited to, the Charles Jamison MSH well pad.