west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

January 21, 2016

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-6900206, issued to SWN PRODUCTION COMPANY, LLC, 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 all 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.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days 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.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-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) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: SHAWN COUCH OHI 10H
Farm Name: COUCH, SHAWN W. TRUST
API Well Number: 47-6900206
Permit Type: Horizontal 6A Well
Date Issued: 01/21/2016

API Number 47 0 6 9 0 0 2 0 3

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) 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. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.

2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.

3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.

4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.

5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations,* 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.

6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.

7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.

8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

9. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.

WW-6B
(10/14)

API NO. 47- 69 -
OPERATOR WELL NO. Shawn Couch OHI 10H
Well Pad Name: Shawn Couch OHI Pad

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator:	SWN Production Co., LLC	494512924	69-Ohio	3-Liberty	247-Bethany
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: Shawn Couch OHI 10H Well Pad Name: Shawn Couch OHI Pad

3) Farm Name/Surface Owner: Shawn W. Couch Trust Public Road Access: Weidmans Run Road

4) Elevation, current ground: 1247' Elevation, proposed post-construction: 1247'

5) Well Type (a) Gas x Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow x Deep _____
Horizontal x

6) Existing Pad: Yes or No Yes

11-6-15

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Target Formation- Marcellus, Target Top TVD- ~~6285'~~ 6173', Target Base TVD- ~~6369'~~ 6213', Anticipated Thickness- ~~84'~~ 40', Associated Pressure- 4160

8) Proposed Total Vertical Depth: 6198'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 15,707'

11) Proposed Horizontal Leg Length: 8411.02'

4706900206

12) Approximate Fresh Water Strata Depths: 300'

13) Method to Determine Fresh Water Depths: wireline logs

14) Approximate Saltwater Depths: 1150'

15) Approximate Coal Seam Depths: 453'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes _____ No x

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

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WW-6B
(10/14)

API NO. 47- 69 -
OPERATOR WELL NO. Shawn Couch OHI 10H
Well Pad Name: Shawn Couch OHI Pad

18) **CASING AND TUBING PROGRAM**

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	H-40	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	J-55	~~54.5#~~ 48#	400'	400'	375 sx/CTS
Coal	9 5/8"	New	J-55	~~40#~~ 36#	1858'	1858'	712 sx/CTS
Intermediate	7"	New	J-55	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	15,707'	15,707'	Lead 965 sx 2115 tail sx/100' inside inter
Tubing	2 3/8'	New	P-110	4.7#	Approx. 6198'	Approx. 6198'	
Liners							

11.6.15

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Max. Associated Surface Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	633	Class A	1.19/50% Excess
Coal	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/50% Excess
Intermediate	7"	8 3/4"	0.317	4360	3250	Class A	1.20/15% Excess
Production	5 1/2"	8 3/4"	0.361	12360	9500	Class A	1.20/15% Excess
Tubing	2 3/8"	4.778"	0.190				
Liners							

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PACKERS

Kind:	10K Arrowset AS1-X			
Sizes:	5 1/2"			
Depths Set:				

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API NO. 47- 69 -
OPERATOR WELL NO. Shawn Couch OHI 10H
Well Pad Name: Shawn Couch OHI Pad

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill and stimulate any potential zones between and including the Benson to Marcellus. **If we should encounter a void place basket above and below void area- balance cement to bottom of void and grout from basket to surface. Run casing not less than 50' below void nor more than 100' below void. (*If freshwater is encountered deeper than anticipated it must be protected, set casing 50'-75' below and cts.)

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Well will be perforated within the target formation and stimulated with a slurry of water, sand, and chemical additives at a high rate. This will be performed in stages with the plug and perf method along the wellbore until the entire lateral has been stimulated within the target formation. All stage plugs are then drilled out and the well is flowed back to surface. The well is produced through surface facilities consisting of high pressure production unites, vertical separation units, water and oil storage tanks. Max press and anticipated max rate- 9000 lbs @ 80 barrels a minute.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 12.9

22) Area to be disturbed for well pad only, less access road (acres): 6.4

23) Describe centralizer placement for each casing string:

All casing strings will be ran with a centralizer at a minimum of 1 per every 3 joints of casing.

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24) Describe all cement additives associated with each cement type:

See Attachment ***

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25) Proposed borehole conditioning procedures:

All boreholes will be conditioned with circulation and rotation for a minimum of one bottoms up and continuing until operator is satisfied with borehole conditions.

*Note: Attach additional sheets as needed.

Schlumberger Cement Additives

	Product Name	Product Use	Chemical Name	CAS Number
Surface	S001	accelerator	calcium chloride	10043-52-4
Intermediate	S001	accelerator	calcium chloride	10043-52-4
Kick Off Plug	D080	dispersant	sodium polynaphthalene sulfonate	9008-63-3
	D801	retarder	aromatic polymer derivative	propriatary
	D047	antifoam	polypropylene glycol	25322-69-4
Production-Lead	D167	fluid loss	aliphatic amide polymer	propriatary
	D154	extender	non-crystalline silica	7631-86-9
	D400	gas migration	boric acid	10043-35-3
	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgite)	8031-18-3
	D201	retarder	chrystalline silica	14808-60-7
			metal oxide	propriatary
	D202	dispersant	sulphonated synthetic polymer	propriatary
			formaldehyde (impurity)	propriatary
Production-Tail	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgite)	8031-18-3
	D167	fluid loss	aliphatic amide polymer	propriatary
	D065	dispersant	sodium polynaphthalene sulfonate	9008-63-3
			sodium sulfate	7757-82-6
	D201	retarder	chrystalline silica	14808-60-7
			metal oxide	propriatary
	D153	anti-settling	chrystalline silica	14808-60-7

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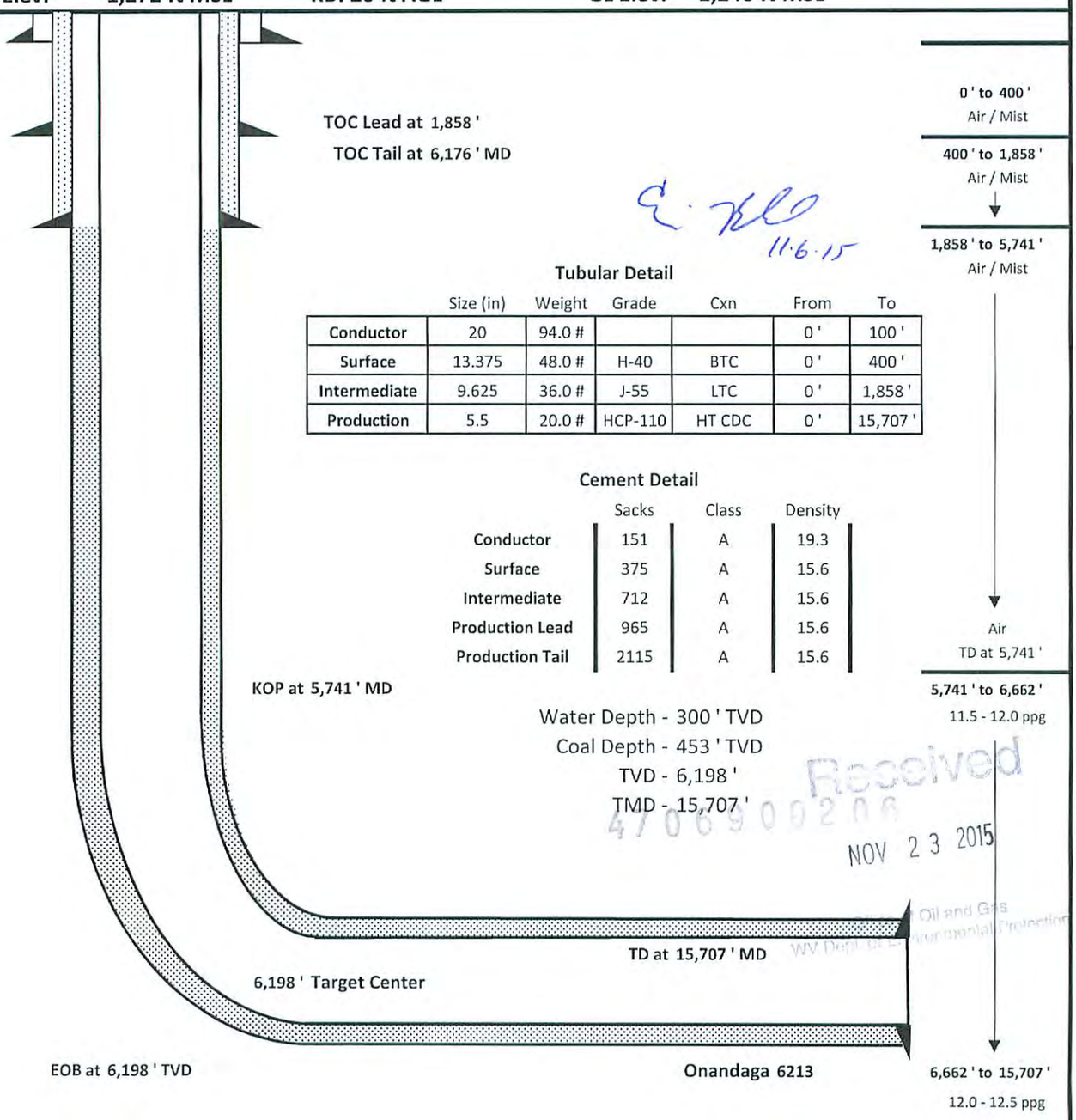
Southwestern Energy Company	Proposed Drilling Program

Well:	SHAWN COUCH OHI 10	Re-entry Rig:	SDC 42
Field:	PANHANDLE FIELD	Prospect:	PANHANDLE
County:	OHIO	State:	WV
SHL:	40.1478 Latitude	-80.5886 Longitude	
BHL:	40.1258 Latitude	-80.5738 Longitude	
KB Elev:	1,272 ft MSL	KB: 26 ft AGL	GL Elev: 1,246 ft MSL



E. Kelo 11.6.15

Tubular Detail

	Size (in)	Weight	Grade	Cxn	From	To
Conductor	20	94.0 #			0 '	100 '
Surface	13.375	48.0 #	H-40	BTC	0 '	400 '
Intermediate	9.625	36.0 #	J-55	LTC	0 '	1,858 '
Production	5.5	20.0 #	HCP-110	HT CDC	0 '	15,707 '

Cement Detail

	Sacks	Class	Density
Conductor	151	A	19.3
Surface	375	A	15.6
Intermediate	712	A	15.6
Production Lead	965	A	15.6
Production Tail	2115	A	15.6

Water Depth - 300 ' TVD
Coal Depth - 453 ' TVD
TVD - 6,198 '
TMD - 15,707 '

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Oil and Gas

WW-9
(9/13)

API Number 47 - 69 - _____
Operator's Well No. Shawn Couch OHI 10H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name SWN Production Co., LLC OP Code 49447757

Watershed (HUC 10) Weidmans Run Quadrangle 247-Bethany

4706900206

Elevation 1247' County 69-Ohio District 3-Liberty

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: closed loop system in place at this time- cuttings will be taken to a permitted landfill.

Will a synthetic liner be used in the pit? Yes ☐ No ☑ If so, what ml.?_____

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application
■ Underground Injection (UIC Permit Number 2D0072539/ 2D0413175/ 2D0610306/ 2D0610317)
■ Reuse (at API Number at next anticipated well, API# will be included with the WR-34/DDMR &/or permit addendum.)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
■ Other (Explain flow back fluids will be put in steel tanks and reused or taken to a permitted disposal facility.

Will closed loop system be used? If so, describe: Yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. air drill to KOP, Fluid drill with SOBM from KOP to TD

-If oil based, what type? Synthetic, petroleum, etc. Synthetic Oil Base

Additives to be used in drilling medium? see attached sheets

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust)_____

-Landfill or offsite name/permit number? meadow SWF- 1032, SS Grading SWF- 4902, Northwestern SWF- 1025, Short Creek 1034/WV0109517/CID28726, Carbon Limestone 28726/CID28726
Arden Landfill 10072, American 02-12954, Country Wide 38390/CID38390, Pine Grove 13688

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, 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 _____ NOV 23 2015

Company Official (Typed Name) Dee Southall

Company Official Title Regulatory Supervisor

Office of Oil and Gas
WV Dept. of Environmental Protection

Subscribed and sworn before me this 5th day of November, 20 15

Brittany R Woody Notary Public

My commission expires 11/27/22

OFFICIAL SEAL
Notary Public, State of West Virginia
BRITTANY R WOODY
3302 Old Elkins Road
Buckhannon, WV 26201
My commission expires November 27, 2022

Form WW-9

Operator's Well No. Shawn Couch OHI 10H

SWN Production Co., LLC

Proposed Revegetation Treatment: Acres Disturbed 12.9 Prevegetation pH _____

Lime _____ (as determined by pH test min. 2) Tons/acre or to correct to pH 6.4

Fertilizer type 10-20-20

Fertilizer amount 600 lbs/acre

Mulch Hay/Straw 2.5 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
White Grove	15	White Grove	15
Red Top	15	Red Top	15
Orchard Grass	20	Orchard Grass	20

Attach:
Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [signature] 11-6-15 4706900206

Comments: _____

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Title: Oil and Gas Inspector Date: 11-6-15

Field Reviewed? (—) Yes ( ) No

Marcellus Well Drilling Procedures
And Site Safety Plan

SWN Production Co., LLC

47 - 051 -
Well name: Shawn Couch OHI 10H
Bethany, Quad
Liberty, District
Ohio County, West Virginia

4706900206

Submitted by:

Danielle Southall Date: 11/5/2015

Title Regulatory Supervisor SWN Production Co., LLC

Approved by:

Date: 11-6-15

Title: Oil & Gas Inspector

Approved by:

Date:

Title:

SWN Production Co., LLC – Confidential

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SOUTHWESTERN ENERGY

Location:	Ohio County, WV	Slot:	Slot #03
Field:	Ohio	Well:	Shawn Couch OHI 3H
Facility:	Shawn Couch OHI Pad 1	Wellbore:	Shawn Couch OHI 3H PWB

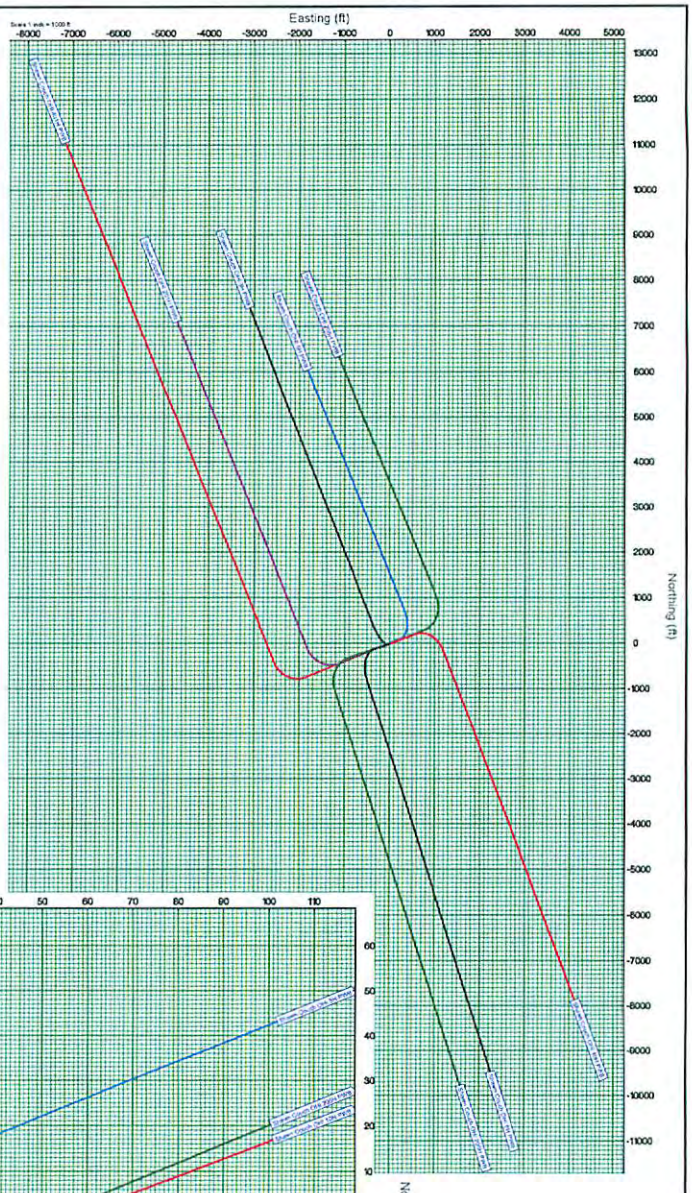
Plot reference wellpath is Shawn Couch OHI 3H PWP Ex-00	
True vertical depths are referenced to Rig on Slot #03 (KB)	Grid System: NAD83 / UTM Zone 17 North, US feet
Measured depths are referenced to Rig on Slot #03 (KB)	North Reference: Grid north
Rig on Slot #03 (KB) to Mean Sea Level: 1272 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot #03): -1246 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: thomsuzc on 6/26/2015

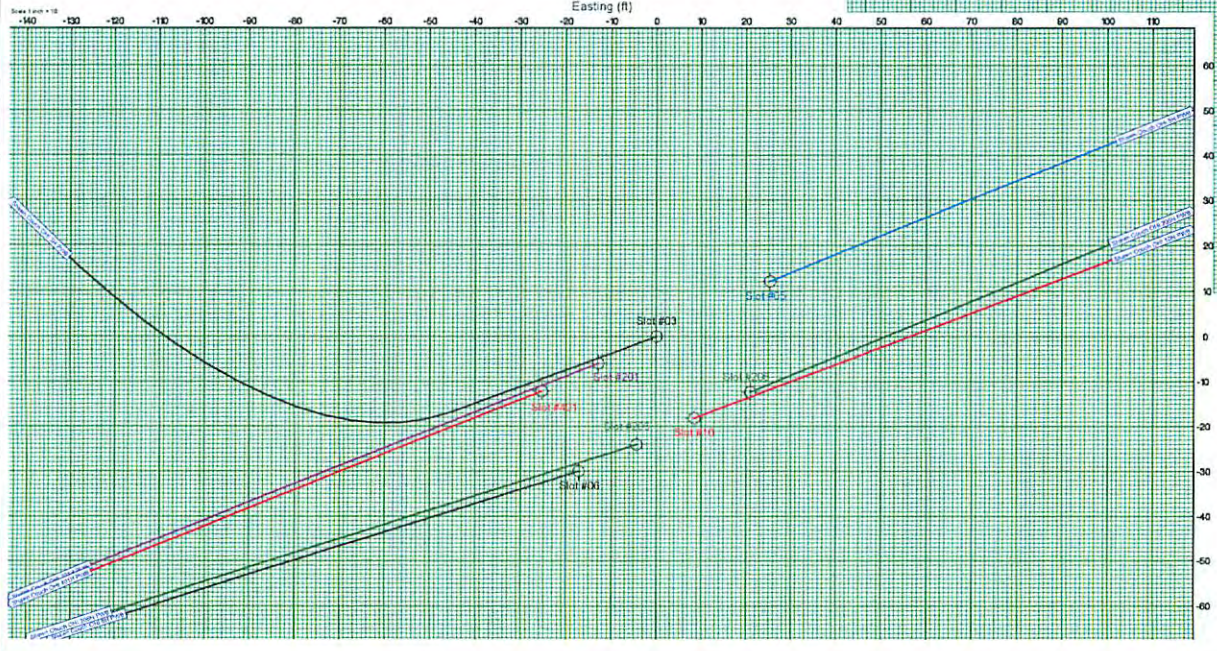
swn Southwestern Energy

BAKER HUGHES

Well Data

Slot	Well	Wellbore	Wellpath
Slot #03	Shawn Couch OHI 3H	Shawn Couch OHI 3H PWB	Shawn Couch OHI 3H PWP Ex-00
Slot #05	Shawn Couch OHI 5H	Shawn Couch OHI 5H PWB	Shawn Couch OHI 5H PWP Ex-00
Slot #06	Shawn Couch OHI 6H	Shawn Couch OHI 6H PWB	Shawn Couch OHI 6H PWP Ex-00
Slot #10	Shawn Couch OHI 10H	Shawn Couch OHI 10H PWB	Shawn Couch OHI 10H PWP Ex-00
Slot #201	Shawn Couch OHI 201H	Shawn Couch OHI 201H PWB	Shawn Couch OHI 201H PWP Ex-00
Slot #205	Shawn Couch OHI 205H	Shawn Couch OHI 205H PWB	Shawn Couch OHI 205H PWP Ex-00
Slot #206	Shawn Couch OHI 206H	Shawn Couch OHI 206H PWB	Shawn Couch OHI 206H PWP Ex-00
Slot #401	Shawn Couch OHI 401H	Shawn Couch OHI 401H PWB	Shawn Couch OHI 401H PWP Ex-00





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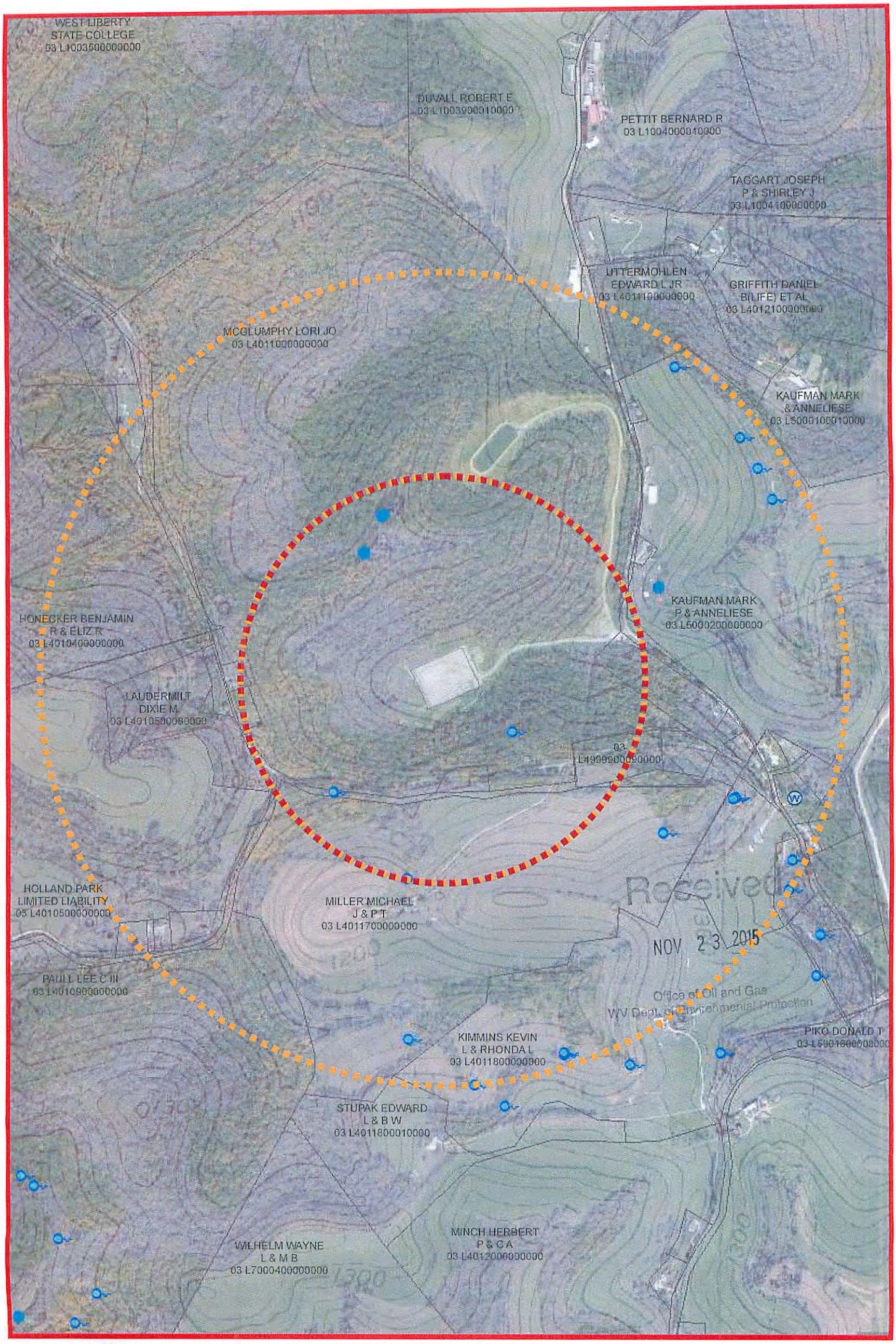


The intent of this map is for general reference only. Information on this map was created using the best available data at the time but is not guaranteed accurate.

Water Purveyor Map

Well Pad:	County:
Shawn Couch	Ohio

Map by: youngst	Date: 11/5/2015
Nad 83 UTM Z one 17	SWN Southwestern Energy

Spring
Water Well
Pond
Radius - 1500 ft
Radius - 3000 ft

1 inch = 812 feet

0 287.5 575 1,150 1,725 2,300 Feet

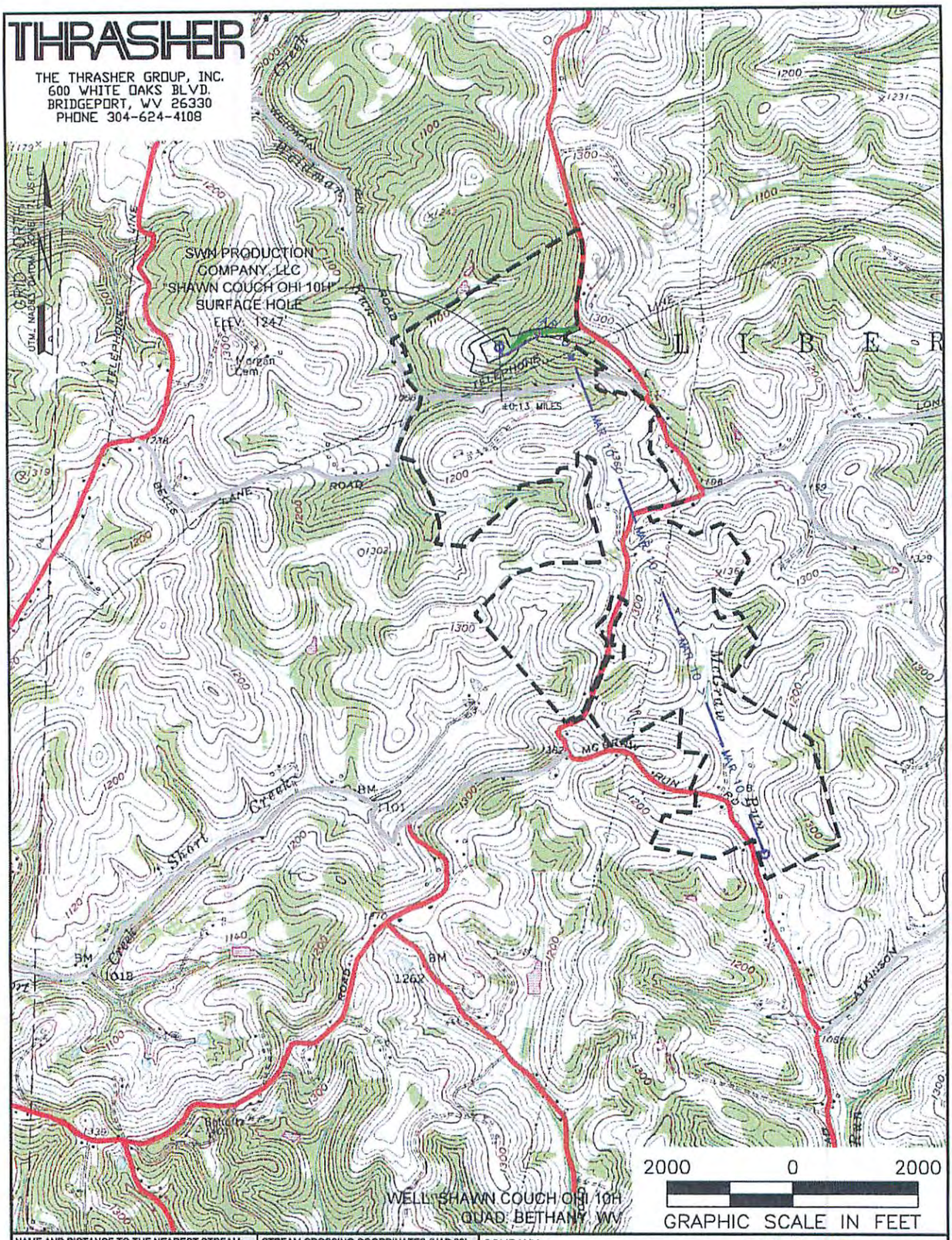
N W E S

Document Path: K:\Land\PWVO\Team Data\GIS\Stephanie Young\Regulatory\Water Purveyor Maps\MXD\Water_Purveyor_Map.mxd

4706900209

THRASHER

THE THRASHER GROUP, INC.
600 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
PHONE 304-624-4108



NAME AND DISTANCE TO THE NEAREST STREAM:	STREAM CROSSING COORDINATES (NAD 83):
UNNAMED TRIBUTARY OF WEIDMAN RUN IS LOCATED ±0.13 MILES SW OF THE CENTER OF THE DRILL PAD.	A. LAT: 40.135295 / LONG:-80.5788252 B. LAT: 40.1286390 / LONG:-80.5752279

WELL RESTRICTIONS:

WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET
WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET
WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET
WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET
CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET
CENTER OF PAD TO AGRICULTURAL BUILDINGS LAGER THAN 2500 SQ FT: >625 FEET

FEMA FLOOD INFORMATION:

NO FLOOD ZONES.

COMPANY: SWN Production Company, LLC / SWN Production Company ™

OPERATOR'S WELL #: SHAWN COUCH 10H

LOCATION: LIBERTY DISTRICT, OHIO COUNTY, WEST VIRGINIA

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WV Dept. of Environmental Protection

SURFACE HOLE LOCATION:

GEOGRAPHIC (NAD83):
LATITUDE: 40.147818°
LONGITUDE: -80.588619

BOTTOM HOLE LOCATION:

GEOGRAPHIC (NAD83):
LATITUDE: 40.125763°
LONGITUDE: -80.573809°

LEGEND:

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- ABANDONED WELL
- PLUGGED & ABANDONED WELL
- CUT CONDUCTOR
- (S) EXISTING SPRING
- (W) EXISTING WATER WELL
- ACCESS ROAD
- ACCESS ROAD TO PREV. SITE
- HIGHWAY/INTERSTATE
- COUNTY ROAD

REVISIONS:	DATE: 11-05-15
	DRAWN BY: K. POTH
	SCALE: 1" = 2000'
	DRAWING NO: 050-5635
	TOPOGRAPHIC MAP

R:\050-5635-SHAWN COUCH WELL PLATS-SOUTHWESTERN-\SURVEY\10H DRAFT 11-05-2015_FINAL.DWG
THURSDAY NOVEMBER 05 2015 09:57AM

PROPERTY NUMBER 2501163488
PAD ID 3001155644

THRASHER

THE THRASHER GROUP, INC.
600 WHITE OAKS BLVD.
BRIDGEPORT, WV 26330
PHONE 304-624-4108

1534'

6864'

Latitude: 40°10'00"

Longitude: 80°35'00"

SWN PRODUCTION COMPANY, LLC
"SHAWN COUCH OHI 10H"
SURFACE HOLE
ELEV: 1247'

REFERENCES
069-00072
069-00105
10H
SHAWN COUCH OHI 10H
NTS

GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT

ADJOINING OWNER INFORMATION
(SEE ADJOINING OWNERS SHEET)

BOTTOM HOLE

BH TO LEASE LINE: 381.6'

REFERENCES TO PROPOSED HORIZONTAL WELLS SURFACE LOCATIONS
069-00072
069-00105
3H
205H
201H
401H
5H
10H
6H
206H
N 64°25'04" E
20'
56'
NTS

3000'
1200'
2400'
069-00072
069-00105
069-00170
NTS

NOTES ON SURVEY

1. COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
2. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
6. NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
7. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

LINE	DESCRIPTION	DISTANCE	DESCRIPTION	MONUMENT
L1	N 10°35'55" E	24.50'	SHL TO 069-00072	EXISTING WELL HEAD
L2	N 65°47'31" E	27.98'	SHL TO 069-00105	EXISTING WELL HEAD
L3	N 87°55'23" W	1717.98'	SHL TO LANDMARK	IRF FOUND
L4	S 75°13'39" W	1602.60'	SHL TO LANDMARK	IRF FOUND
L5	S 83°08'14" E	985.57'	SHL TO LP	LANDING POINT
L6	S 21°00'58" E	8411.02'	LP TO BHL	BOTTOM HOLE

TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES
1	SHAWN W. COUCH TRUST (S) GEORGE W. COUCH (R)	3-L4011000000000	121.56
2	PAUL & RHONDA TYRNA (S/R)	3-L4011400000000	1.24
3	MICHAEL J. & PENELOPE T. MILLER (S/R)	3-L4011700000000	139.51
4	JAMES W. & HELEN L. LOEW (S/R)	3-L4011800020000	15.00
5	KEVIN L. & RHONDA L. KIMMINS (S/R)	3-L4011800030000	29.00
6	HERBERT P. & CAROL A. MINCH (S/R)	3-L4012000000000	198.35
7	RONALD D. & MARY LEE FEKETE (S/R)	3-L7000500000000	40.18
8	JOSEPH F. BIPPUS SR (ET AL) (S/R) JOSEPH F. BIPPUS JR (R) MARY LEE BIPPUS FEKETE (R) BETTY ANN SMITH F/K/A BETTY ANN BIPPUS (R)	3-L8000100050000	96.05
9	JOSEPH F. JR & C. L. BIPPUS (S/R)	3-L8000100020000	2.99
10	CHARLES E. DAGUE (S/R)	3-L8001400000000	20.51

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,444,244.894 EASTING: 535,039.583
LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,444,196.053 EASTING: 535,393.338
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,441,802.905 EASTING: 536,312.751

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 2270 1/13/16

MICHAEL S. WOLF LICENSED No. 2270 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

2000 0 2000
GRAPHIC SCALE IN FEET

COMPANY: SWN Production Company, LLC — SWN Production Company™

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

OPERATOR'S WELL #: SHAWN COUCH OHI 10H

API WELL #: 47 (STATE) 069 (COUNTY) 00206 (PERMIT) HG A

WELL TYPE: OIL ☐ WASTE DISPOSAL ☐ PRODUCTION ☐ DEEP ☐ GAS ☒ LIQUID INJECTION ☐ STORAGE ☐ SHALLOW ☒

WATERSHED: MCGRAW RUN ELEVATION: 1247

DISTRICT: LIBERTY COUNTY: OHIO QUADRANGLE: BETHANY

SURFACE OWNER: SHAWN W. COUCH TRUST ACREAGE: 121.56

OIL & GAS ROYALTY OWNER: GEORGE W. COUCH ACREAGE: 121.56

DRILL ☒ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☒ PLUG OFF OLD FORMATION ☐ PERFORATE NEW FORMATION ☐

CONVERT ☐ PLUG & ABANDON ☐ CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY)

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,198 TVD 15,076 TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC
ADDRESS: P.O. BOX 1300
CITY: JANE LEW STATE: WV ZIP CODE: 26378

DESIGNATED AGENT: DEE SOUTHALL
ADDRESS: P.O. BOX 1300
CITY: JANE LEW STATE: WV ZIP CODE: 26378

LEGEND:
- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- ABANDONED WELL
- PLUGGED & ABANDONED WELL
- CUT CONDUCTOR
- LEASE BOUNDARY
- 500' DHP BUFFER
- MAR 10 > MARCELLUS DHP
- ABANDONED PATH

REVISIONS:

DATE: 11-16-15
DRAWN BY: K. POTH
SCALE: 1" = 2000'
DRAWING NO: 050-5635
WELL LOCATION PLAT

R:\050-5635-SHAWN COUCH WELL PLATS-SOUTHWESTERN-\SURVEY\10H 11-16-2015_FINAL.DWG
WEDNESDAY JANUARY 13 2016 10:42AM

PROPERTY NUMBER 2501163488
PAD ID 3001155644

WELL LOCATION PLAT
DRAWING NO: 020-2032
SCALE:
DRAWN BY: K. POTH
REVISIONS: 11-18-12

Production Company LLC
SMU
COMPANY:

PROFESSIONAL SURVEYOR
STATE OF WEST VIRGINIA
No. 2270
LICENSED
MICHAEL S. MOYE

TRACT	SURFACE OWNER	TAX PARCEL	ACRES
A	SHAWN M. COUCH TRUST	2-4011000010000	1.18
B	STEVEN M. MCCLAUGHEY	2-4011000020000	188.84
C	ROBERT E. DUNAFF & ANNE E. DUNAFF	2-4011000000000	103.08
D	MARK P. KAUFMAN & VANESSE KAUFMAN	2-4011200000000	0.22
E	TODD E. FORTER	2-4011200000000	0.22
F	MILLIAM S. PATTERSON, JR.	2-4011200000000	2.00
G	MARK E. HORVAN	2-4011000030000	3.44
H	MILBERT A. PLTON & CHEN VAN PLTON	2-4011000030000	1.11
I	MILLIAM A. BENSON & TORI L. BOHENKO	2-4011000020000	3.11
J	STEVEN L. WINTER & SANDRA M. WINTER	2-4001300000000	1.30
K	DAVID A. GILBERT SR. & PAULA A. GILBERT	2-4011800030000	2.00
L	ROBERT SORSBA	2-4002200000000	2.02
M	ROBERT SORSBA	2-4002200000000	2.02
N	DONALD T. PIKO	2-4001800000000	10.81
O	DAVID ALAN BELLANCO & DEBRA KAY BELLANCO	2-4003000110000	3.81
P	JOSEPH E. BIBBLE SR. & ICA M. BIBBLE (LIFE ESTATE):	2-4003000010000	102.33
Q	TRUNNEL BIDGE LLC	2-4003000020000	2.13
R	SARAH A. FORTER, ET AL	2-4000200000000	108.00
S	HOMEST FAND CROLL LLC	2-4001200000000	12.21
T	TRUNNEL BIDGE LLC	2-4001200000000	10.88
U	TRUNNEL BIDGE LLC	2-4001200000000	2.88
V	JAY T. MANCK & MELISSA L. MANCK	2-4003300000000	2.88
W	DANIEL MCKEE	2-4003200000000	4.11
X	DANIEL MCKEE	2-4003400000000	6.38
Y	COREA M. SOBOTA	2-4003400000000	4.00
Z	JOSEPH E. BIBBLE SR. ET AL	2-4000100000000	0.43
AA	WILD H. CRISMELL	2-4000200020000	33.08
BB	JOSEPH E. BIBBLE SR. & ICA M. BIBBLE (LIFE ESTATE):	2-4000100040000	1.00
CC	JOSEPH E. BIBBLE SR. & ICA M. BIBBLE (LIFE ESTATE):	2-4000100020000	1.42
DD	ROWALD D. FEKETE & M. L. FEKETE	2-4000100010000	4.08
EE	RUSSEL E. WAERS & BETTA ANNE WAERS	2-4000200000000	10.88
FF	MENDA L. DAVIS	2-4000200030000	3.48
GG	RICHARD L. SCHNEITE & CAYLAN M. SCHNEITE	2-4000200000000	3.00
HH	RICHARD L. SCHNEITE & CAYLAN M. SCHNEITE	2-4000800000000	184.38
II	MAYNE L. MILHELM & M. B. MILHELM	2-4000400000000	1.00
JJ	B. A. FARMER (LIFE ESTATE): CINDA L. PINTON	2-4002000000000	1.00
KK	CARL HARTLIEB & ELSIE HARTLIEB	2-4013000010000	1.38
LL	HERBERT P. WINCH JR. & C. A. WINCH	2-4013000030000	1.42
MM	EDWARD L. STUPAK & B. M. STUPAK	2-4011800010000	32.80
NN	KEVIN L. KIMMINS & RHONDA L. KIMMINS	2-4011800000000	32.28
OO	LEE C. PAULL III & JANE M. PAULL	2-4010300000000	3.88
PP	JOHN C. WAERS & A.L. WAERS	2-4010300000000	3.88
QQ	HOLLYWOOD PARK LIMITED LIABILITY	2-4010200030000	3.81
RR	MINDSOR POWER HOUSE COAL COMPANY	2-4010200030000	3.81
SS	B. C. BIDLER & L. M. TAYLOR	2-4011300000000	1.02
TT	EDWARD E. GILBERT JR.	2-4011300000000	0.31
UU	B. C. BIDLER & L. M. TAYLOR	2-4010800000000	1.08
VV	DIXIE M. LANDERWILT & L. LANDERWILT	2-4010800010000	0.18

PHONE 304-254-4108
BRIDGEPORT, WV 56330
900 WHITE OAKS BLVD.
THE THRASHER GROUP, INC.

THRASHER

ADJOINING OWNER INSET

WW-6A1
(5/13)

Operator's Well No. Shawn Couch OHI 10H

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
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:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page

"SEE EXHIBIT A"

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: SWN Production Company L.L.C
By: John D. Startz
Its: John D. Startz, Senior Staff Landman

Received

NOV 23 2015

Office of Oil and Gas
WV Dept. of Environmental Protection

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, LLC., Operator

Shawn Couch OHI 10H

Ohio County, West Virginia

#	TMP	LEASE #	LESSOR	LESSEE	ROYALTY	BK/PG
1)	3-L4-110	1-324742-000	George W. Couch, widower	Fortuna Energy Inc.	12.50%	775/537
				Range Resources - Appalachia, LLC		786/422
				Chesapeake Appalachia, L.L.C.		808/493
				SWN Production Company, LLC		883/539
2)	3-L4-114	47-003376-000	Paul L. Tyrna and Rhonda J. Tyrna, husband and wife	Chesapeake Appalachia, L.L.C.	18.00%	855/671
				SWN Production Company, LLC		885/764
3)	3-L4-117	1-329416-000	Michael J. Miller and Penelope T. Miller, husband and wife	Chesapeake Appalachia, L.L.C.	18.00%	814/537
				SWN Production Company, LLC		883/587
4)	3-L4-118.2	1-324726-000	James W. Loew and Helen L. Loew, his wife	Great Lakes Energy Partners, LLC	14.00%	777/94
				Chesapeake Appalachia, L.L.C.		808/563
				SWN Production Company, LLC		883/527
5)	3-L4-118.3	1-324720-000	Kevin L. Kimmins and Rhonda L. Kimmins, his wife	Great Lakes Energy Partners, LLC	12.50%	776/264
				Chesapeake Appalachia, L.L.C.		808/549
				SWN Production Company, LLC		883/527
6)	3-L4-120	1-324724-000	Herbert P. Minch and Carol A. Minch, his wife	Great Lakes Energy Partners, LLC	12.50%	777/225
				Chesapeake Appalachia, L.L.C.		808/563
				SWN Production Company, LLC		883/527
7)	3-L7-5	1-325734-000	Ronald D. Fekete and Mary Lee Fekete, husband and wife	Chesapeake Appalachia, L.L.C.	18.00%	815/1
				SWN Production Company, LLC		883/563
8)	3-L8-1.5	1-329301-000	Joseph F. Bippus, Sr., a married man dealing in his sole and separate property, by and through his Attorney-in-Fact, Betty Ann Smith, Joseph F. Bippus, Jr., a married man dealing in his sole and separate property, Mary Lee Bippus Fekete, a married woman dealing in her sole and separate property and Betty Ann Smith f/k/a Betty Ann Bippus, a married woman dealing in her sole and separate property	Chesapeake Appalachia, L.L.C.	18.00%	813/280
				SWN Production Company, LLC		883/587
9)	3-L8-1.2	1-329329-000	Joseph F. Bippus, Jr. and Cindy Lou Bippus, a married couple	Chesapeake Appalachia, L.L.C.	18.00%	813/294
				SWN Production Company, LLC		883/587
10)	3-L8-14	47-000301-000	Charles Everett Dague, a single man	Chesapeake Appalachia, L.L.C.	18.00%	819/785
				SWN Production Company, LLC		885/584

690025

RECEIVED

NOV 23 2015

Office of Oil and Gas
WV Dept. of Environmental Protection

SWN Production Company, LLC
P O Box 12359
Spring, Texas 77391-2359
www.swn.com

November 5, 2015

Ms. Laura Adkins
WV DEP Office of Oil & Gas
601 57th St., SE
Charleston, WV 25304

RE: SWN's proposed Shawn Couch OHI 10H & 206H in Ohio County, West Virginia, Drilling under Weidman Run Rd., Greggsville Clinton and Potomac Rd.

Dear Ms. Adkins:

SWN Production Company, LLC ("SWN") is applying for a drilling permit for the above referenced well. The State of West Virginia has raised some concern as to SWN's right to drill under Weidman Run Rd., Greggsville Clinton and Potomac Rd. Please be advised that SWN has leased all mineral owners under said route as it relates to the above-referenced well and unit.

Thank you and should you have any questions please feel free to contact the undersigned at (832) 796-6374 or by email at john_startz@swn.com.

Sincerely,

John D. Startz, CPL
Senior Staff Landman
SWN Production Company, LLC

Received
NOV 23 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

4706900207

$\frac{R^2}{A} \rightarrow V^{+^5}$

10000 Energy Drive
Spring, TX 77389-4954

WW-6AC
(1/12)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE CERTIFICATION

Date of Notice Certification: 11/19/15

API No. 47- 69 -
Operator's Well No. Shawn Couch OHI 10H
Well Pad Name: Shawn Couch OHI Pad

Notice has been given:
Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State:	WV	UTM NAD 83 Easting:	535039.583
County:	69-Ohio	Northing:	4444244.894
District:	3-Liberty	Public Road Access:	Weidmans Run Road
Quadrangle:	247-Bethany	Generally used farm name:	Shawn Couch
Watershed:	Weidmans Run		

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

4706900206

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following: *PLEASE CHECK ALL THAT APPLY	OOG OFFICE USE ONLY
☐ 1. NOTICE OF SEISMIC ACTIVITY or ☒ NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED	☐ RECEIVED/ NOT REQUIRED
☐ 2. NOTICE OF ENTRY FOR PLAT SURVEY or ☒ NO PLAT SURVEY WAS CONDUCTED	☐ RECEIVED
☒ 3. NOTICE OF INTENT TO DRILL or ☐ NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or ☐ WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)	☐ RECEIVED/ NOT REQUIRED
☒ 4. NOTICE OF PLANNED OPERATION	☐ RECEIVED
☒ 5. PUBLIC NOTICE	☐ RECEIVED
☒ 6. NOTICE OF APPLICATION	☐ RECEIVED

Received
4706900206
NOV 23 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

Required Attachments:
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

WW-6AC
(1/12)

Certification of Notice is hereby given:

THEREFORE, I _____, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification 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:	SWN Production Co., LLC	Address:	P.O. Box 1300
By:	Dee Southall		Jane Lew, WV 26378
Its:	Regulatory Supervisor	Facsimile:	
Telephone:	304-884-1614	Email:	Dee_Southall@swn.com

NOTARY SEAL
OFFICIAL SEAL
Notary Public, State of West Virginia
BRITTANY R WOODY
3302 Old Elkins Road
Buckhannon, WV 26201
My commission expires November 27, 2022

Subscribed and sworn before me this 5th day of November 2015

Brittany R Woody Notary Public

My Commission Expires 11/27/22

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as 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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

4706900206

Received
NOV 23 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

WW-6A
(9-13)

API NO. 47- 69 -
OPERATOR WELL NO. Shawn Couch OHI 10H
Well Pad Name: Shawn Couch OHI Pad

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 11/19/15 **Date Permit Application Filed:** 11/19/15

Notice of:

☑ PERMIT FOR ANY WELL WORK ☐ CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

☐ PERSONAL SERVICE ☑ REGISTERED MAIL ☐ METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

☑ Application Notice ☑ WSSP Notice ☑ E&S Plan Notice ☑ Well Plat Notice is hereby provided to:

☑ SURFACE OWNER(s)
Name: Shawn W. Couch Trust C/O Joseph Moffo, Jr.
Address: 5503 Wood Duck Road
Middleburg, FL 32068
Name:
Address:

☐ SURFACE OWNER(s) (Road and/or Other Disturbance)
Name:
Address:
Name:
Address:

☐ SURFACE OWNER(s) (Impoundments or Pits)
Name:
Address:

☑ COAL OWNER OR LESSEE
Name: Windsor Coal Company
Address: 100 Consol Energy Drive
Canonsburg, PA 26059

☐ COAL OPERATOR
Name:
Address:

☑ SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: *** See Attachment #1
Address:

☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name:
Address:

*Please attach additional forms if necessary

Received
NOV 23 2015
Office of Oil and Gas
Dept. of Environmental Protection

4706900306

Attachment #1

Shawn Couch OHI Pad - Water Purveyors w/in 1500'

Landowner	Address
Shawn W. Couch Trust	5503 Wood Duck Road Middleburg, FL 32068

Received
NOV 23 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

4706900200

WW-6A
(8-13)

API NO. 47- 69 -
OPERATOR WELL NO. Shawn Couch OHI 10H
Well Pad Name: Shawn Couch OHI Pad

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:
Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Received
NOV 23 2015
WV Dept. of Environmental Protection
Office of Oil & Gas

Well Location Restrictions
Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:
Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:
Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:
Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

4700900202 NOV 23 2015

Office of Oil and Gas
WV Department of Environmental Protection

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

WW-6A
(8-13)

API NO. 47- 69 -
OPERATOR WELL NO. Shawn Couch OHI 10H
Well Pad Name: Shawn Couch OHI Pad

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

(1) The proposed well work will constitute a hazard to the safety of persons;
(2) The plan for soil erosion and sediment control is not adequate or effective;
(3) Damage would occur to publicly owned lands or resources; or
(4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

4706900206

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NOV 23 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

WW-6A
(8-13)

API NO. 47- 69 -
OPERATOR WELL NO. Shawn Couch OHI 10H
Well Pad Name: Shawn Couch OHI Pad

Notice is hereby given by:
Well Operator: SWN Production Co., LLC
Telephone: 304-884-1614
Email: Dee_Southall@swn.com

Address: P.O. Box 1300
Jane Lew, WV 26378
Facsimile:

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as 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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

OFFICIAL SEAL
Notary Public, State of West Virginia
BRITTANY R WOODY
3302 Old Elkins Road
Buckhannon, WV 26201
My commission expires November 27, 2022

Subscribed and sworn before me this 5th day of November 2015

Brittany R Woody Notary Public

My Commission Expires 11/27/22

4706900206

Received
NOV 23 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

WW-6A4
(1/12)

Operator Well No. Shawn Couch 10H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 11/04/2015 **Date Permit Application Filed:** 11/19/15

Delivery method pursuant to West Virginia Code § 22-6A-16(b)

☐ HAND DELIVERY ☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided,* That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however,* That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Received
NOV 23 2015

Notice is hereby provided to the SURFACE OWNER(s):

Name: Shawn W. Couch Trust C/O Joseph Moffo, Jr.
Address: 5503 Wood Duck Rd.
Middleburg, FL 32068

Name:
Address:

Office of Oil and Gas
WV Dept. of Environmental Protection

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	West Virginia	UTM NAD 83 Easting:	535,039.583
County:	Ohio	Northing:	4,444,244.894
District:	Liberty	Public Road Access:	Harvey Road
Quadrangle:	Bethany	Generally used farm name:	Shawn Couch
Watershed:	Weidmans Run		

This Notice Shall Include:
Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator:	SWN Production Company, LLC	Authorized Representative:	Steve Perkins
Address:	PO Box 1300, 179 Innovation Drive	Address:	PO Box 1300, 179 Innovation Drive
	Jane Lew, WV 26378		Jane Lew, WV 26378
Telephone:	304-884-1615	Telephone:	304-884-1615
Email:	steve_perkins@swn.com	Email:	steve_perkins@swn.com
Facsimile:		Facsimile:	

4700900280

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as 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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

WW-6A5
(1/12)

Operator Well No. Shawn Couch 10H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**
Date of Notice: 11/04/2015 **Date Permit Application Filed:** 11/19/15

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

☒ CERTIFIED MAIL RETURN RECEIPT REQUESTED ☐ HAND DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Received
NOV 23 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

Name: Shawn W. Couch Trust C/O Joseph Moffo, Jr.
Address: 5503 Wood Duck Rd.
Middleburg, FL 32068

Name:
Address:

Notice is hereby given:
Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia
County: Ohio
District: Liberty
Quadrangle: Bethany
Watershed: Weidmans Run

UTM NAD 83 Easting: 535,039.583
Northing: 4,444,244.894
Public Road Access: Harvey Road
Generally used farm name: Shawn Couch

This Notice Shall Include:
Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1)A copy of this code section; (2) The information required to be provided by **W. Va. Code § 22-6A-10(b)** to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: SWN Production Company, LLC
Telephone: 304-884-1615
Email: steve_perkins@swn.com

Address: PO Box 1300, 179 Innovation Drive
Jane Lew, WV 26378
Facsimile:

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as 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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

4706900200

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways
1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505

Earl Ray Tomblin
Governor

Paul A. Mattox, Jr., P. E.
Secretary of Transportation/
Commissioner of Highways

November 18, 2015

James A. Martin, Chief
Office of Oil and Gas
Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304

Subject: DOH Permit for the Shawn Couch Pad, Ohio County
Shawn Couch OHI 10H

Dear Mr. Martin,

The West Virginia Division of Highways has transferred Permit #06-2011-0060 for the subject site to Southwestern Energy for access to the State Road for the well site located off of Ohio County Route 55 SLS.

The operator has signed an OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

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WV Dept. of Environmental Protection

Very Truly Yours,

Gary K. Clayton

Gary K. Clayton, P.E.
Regional Maintenance Engineer
Central Office Oil &Gas Coordinator

Cc: Brittany Woody
Southwestern Energy
CH, OM, D-6
File

Supplier Name	Product Name	Product Use	Chemical Name	CAS Number
BAKER HUGHES	ALPHA 1427	Biocide	Didecyl Dimethyl Ammonium Chloride	007173-51-1
			Ethanol	000064-17-5
			Glutaraldehyde (Pentanediol)	000111-30-8
			Quaternary Ammonium Compound	068424-85-1
			Water	007732-18-5
	BF-7L	Buffer	Potassium Carbonate	000584-08-7
	ClayCare	Clay Stabilizer	Choline Chloride	000067-48-1
			Water	007732-18-5
	Enzyme G-I	Breaker	No Hazardous Components	NONE
	ENZYME G-NE	Breaker	No Hazardous Components	NONE
	FRW-18	Friction Reducer	Petroleum Distillate Hydrotreated Light	064742-47-8
	GW-3LDF	Gel	Petroleum Distillate Blend	N/A-014
			Polysaccharide Blend	N/A-021
	SCALETROL 720	Scale Inhibitor	Diethylene Glycol	000111-46-6
			Ethylene Glycol	000107-21-1
	XLW-32	Crosslinker	Boric Acid	010043-35-3
			Methanol (Methyl Alcohol)	000067-56-1
FRAC TECH SERVICES	APB01 (AMMONIUM PERSUFATE BREAKER)	Breaker	Ammonium Persulfate	007727-54-0
	B05 (LOW PH BUFFER)	Buffer	Acetic acid	000064-19-7
	BXL03 Borate XL Delayed High Temp	Crosslinker	No Hazardous Components	NONE
	FRW-200	Friction Reducer	No Hazardous Components	NONE
	HVG01 (TURQUOISE-1 BULK)	Gelling Agent	Petroleum Distillate Hydrotreated Light	064742-47-8
	KCLS-4	Clay Stabilizer	No Hazardous Components	NONE
	LTB-1	Breaker	Ammonium Persulfate	N/A

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Supplier Name	Product Name	Product Use	Chemical Name	CAS Number
NALCO ONESOURCE	EC6110A	Biocide	Ethanol	000064-17-5
			Glutaraldehyde (Pentanediol)	000111-30-8
			Quaternary Ammonium Compounds	N/A-063
	EC6629A	Biocide	No Hazardous Components	NONE
WEATHERFORD	WBK-133 OXIDIZER	Breaker	Ammonium Persulfate	007727-54-0
	WBK-134	Breaker	Ammonium Persulfate	007727-54-0
			Crystalline Silica (Quartz Sand, Silicon Dioxide)	014808-60-7
	WCS-631LC	Clay Stabilizer	Proprietary Non Hazardous Salt	N/A-229
			Water	007732-18-5
	WFR-55LA	Friction Reducer	No Hazardous Components	NONE
	WGA-15L	Gel	Petroleum Distillate Hydrotreated Light	064742-47-8
	WPB-584-L	Buffer	Potassium Carbonate	000584-08-7
			Potassium Hydroxide	001310-58-3
	WXL-101LE	Corsslinker	No Hazardous Components	NONE
	WXL-101LM	Crosslinker	Petroleum Distillate Hydrotreated Light	064742-47-8
	WXL-105L	Crosslinker	Water	007732-18-5
			Ethylene Glycol	000107-21-1
			Boric Acid	010043-35-3
			Ethanolamine	000141-43-5
SCHLUMBERGER	B244 Green-Cide 25G	Biocide	Glutaraldehyde	111-30-8
	L071 Temporary Clay Stabilizer	Clay Stabilizer	Cholinium Chloride	67-48-1
	Breaker J218	Breaker	Diammonium Peroxidisulphate	7727-54-0
	EB-Clean* J475 Breaker		Diammonium Peroxidisulphate	7727-54-0
	Friction Reducer B315	Friction Reducer	Distillates (petroleum), Hydrotreated light Aliphatic Alcohol Glycol Ether	64742-47-8 Proprietary
	Friction Reducer J609		Ammonium Sulfate	7783-20-2
Supplier Name	Product Name	Product Use	Chemical Name	CAS Number

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SCHLUMBERGER	Water Gelling Agent J580	Gel	Carbohydrate Polymer	Proprietary
	Scale Inhibitor B317	Scale Inhibitor	Trisodium ortho phosphate Ethane-1, 2-diol	7601-54-9 107-21-1
	Borate Crosslinker J532	Crosslinker	Aliphatic polyol Sodium tetraborate decahydrate	Proprietary 1303-96-4
	Crosslinker J610		Aliphatic polyol Potassium hydroxide	Proprietary 1310-58-3

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Office of Oil and Gas
WV Dept. of Environmental Protection

4706900206

SOUTHWESTERN ENERGY

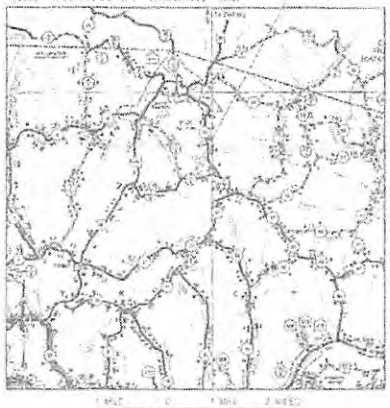
AS-BUILT PLANS FOR THE

SHAWN COUCH PAD "A"

LIBERTY DISTRICT, OHIO COUNTY, WV

NOVEMBER 2015

OHIO COUNTY, BY HIGHWAY MAP



HIGHWAY MAP SCALE

BETHANY QUAD MAP

VICINITY MAP SCALE

WVDEP OOG
ACCEPTED AS-BUILT
12 / 11 / 2015

AS-BUILT ACCESS ROAD BEGINNING
NAD83 Latitude = N 40.148237°
NAD83 Longitude = W 80.584606°
UTM 83-17 Northing = 14581167.5619 ft.
UTM 83-17 Easting = 1756663.1109 ft.

AS-BUILT CENTER OF WELL PAD
NAD83 Latitude = N 40.147867°
NAD83 Longitude = W 80.588565°
UTM 83-17 Northing = 14580844.5644 ft.
UTM 83-17 Easting = 1755379.7053 ft.

NOTES

1. PORTIONS OF THE ORIGINAL AS-BUILT SURVEY OF THIS SITE PROVIDED BY BLOOD, BENCHECK & ASSOCIATES, INC. (BBA) TO CHESAPEAKE APPALACHIA LLC IN JULY 2011 HAVE BEEN INCORPORATED INTO THESE PLANS. THE BBA AS-BUILT SURVEY WAS PROVIDED TO THRASHER BY SOUTHWESTERN ENERGY IN SEPTEMBER 2015 AND INCLUDED CONTOURS, ROAD EDGES, WELL HEAD LOCATIONS, FRESHES AND SEDIMENT CONTROLS, ETC.
2. EXISTING ROAD EDGES, WELL PAD EDGE, GAS PROPELLATION EQUIPMENT, ABOVE GROUND PIPING, STORM WATER FEATURES, ETC. WERE VERIFIED AND AS-BUILT BY THRASHER SEPTEMBER 2015.
3. THE COORDINATE SYSTEM USED FOR THIS PROJECT IS TIEDIN WITH NAD83 DATUM, ZONE 17, US FOOT, CENTRAL MERIDIAN 81W.

SWN
Southwestern Energy

SOUTHWESTERN ENERGY
179 Chesapeake Drive
Jane Lew, WV 26378
(304) 884-1610

SHEET INDEX

SHEET	DESCRIPTION
1	TITLE SHEET
2-3	EVACUATION ROUTE PREVAILING WIND
4	AS-BUILT OVERVIEW
5	AS-BUILT ACCESS ROAD PLAN & PROFILE
6	AS-BUILT WELL PAD PLAN
7	AS-BUILT WELL PAD PROFILE & SECTIONS
8	RECLAMATION PLAN
9	RECLAMATION GENERAL NOTES
10	RECLAMATION DETAILS

SHAWN COUCH PAD "A" WELLS

EXISTING WELL: HE APP [illegible]
EXISTING WELL: HE APP [illegible]

REVISION NUMBER	SHEETS	BY	DATE	DESCRIPTION

ONE CALL UTILITY SYSTEM CONTACT INFO

WEST VIRGINIA 811

CONTRACTOR SHALL NOTIFY THE ONE CALL SYSTEM OF THE INTERSTATE OPERATOR OR DEMOLITION WORKERS THAN FORTY-FIVE (45) HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL FEDERAL OR STATE HOLIDAYS, NOR MORE THAN TEN (10) WORK DAYS PRIOR TO THE BEGINNING OF SUCH WORK

E. [illegible]
11-19-15

THRASHER

THRASHER
[illegible]
[illegible] WHITE OAKS BOULEVARD [illegible]
PHONE (304) 824-4106 • FAX (304) 824-7831

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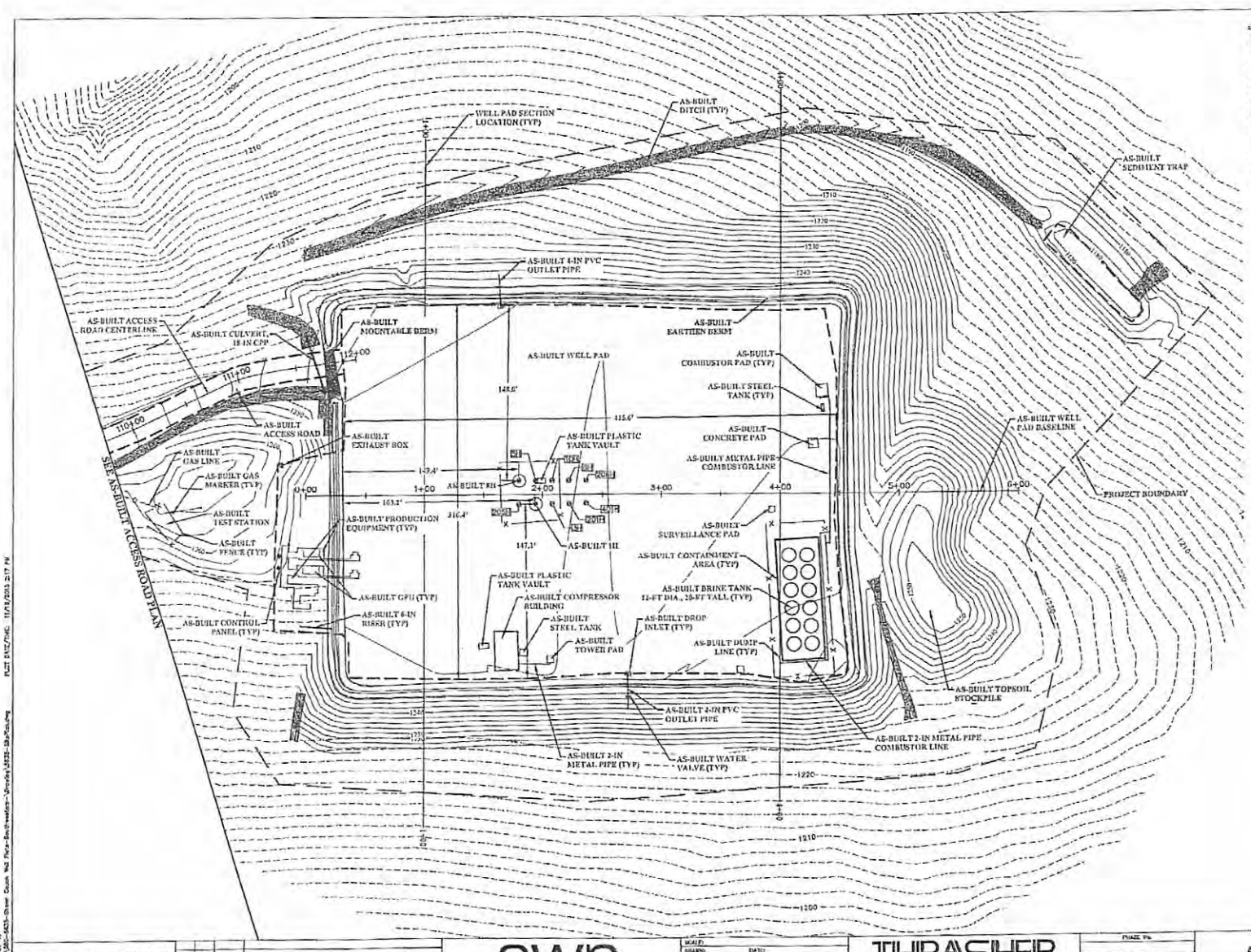

PLAN LEGEND

- PRE-CONSTRUCTION CONTOURS
- BBA AS-BUILT 2' CONTOURS
- BBA AS-BUILT PROJECT BOUNDARY
- EXISTING OVERHEAD UTILITY LINE AND POLE
- TTG AS-BUILT ROAD EDGE
- TTG AS-BUILT EDGE OF PAVEMENT
- TTG AS-BUILT PAD EDGE
- TTG AS-BUILT SEDIMENT TRAP EDGE
- TTG AS-BUILT FENCE
- TTG AS-BUILT DITCH
- TTG AS-BUILT CULVERT
- TTG AS-BUILT CONTAINMENT AREA
- TTG AS-BUILT PRODUCTION EQUIPMENT
- TTG AS-BUILT GAS LINE AND GAS MARKER
- PROPOSED 18-IN COMPOST FILTER SOCK
- AS-BUILT TTG AS-BUILT TEXT
- AS-BUILT BBA AS-BUILT TEXT

SHAWN COUCH PAD "A" WELLS

WELL NAME	API NUMBER	CELLAR DIAMETER	CELLAR DEPTH	CELLAR MATERIAL
AS-BUILT 1H	47-069-00072	8-FT	8-FT	CMP*
AS-BUILT 8H	47-069-00105	8-FT	8-FT	CMP*
PROPOSED WELL 3H	-	8-FT	8-FT	CMP*
PROPOSED WELL 5H	-	8-FT	8-FT	CMP*
PROPOSED WELL 6H	-	8-FT	8-FT	CMP*
PROPOSED WELL 10H	-	8-FT	8-FT	CMP*
PROPOSED WELL 201H	-	8-FT	8-FT	CMP*
PROPOSED WELL 205H	-	8-FT	8-FT	CMP*
PROPOSED WELL 206H	-	8-FT	8-FT	CMP*
PROPOSED WELL 401H	-	8-FT	8-FT	CMP*

NOTES:
* CMP = CORRUGATED METAL PIPE

WVDEP OOG
ACCEPTED AS-BUILT
12 / 11 / 2015

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NO.	BY	DATE	DESCRIPTION

SWN Southwestern Energy

SCALE:
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CHECKED: DATE:
APPROVED: DATE:
SURVEY DATE:
SURVEY BY:
FIELD BOOK No.:

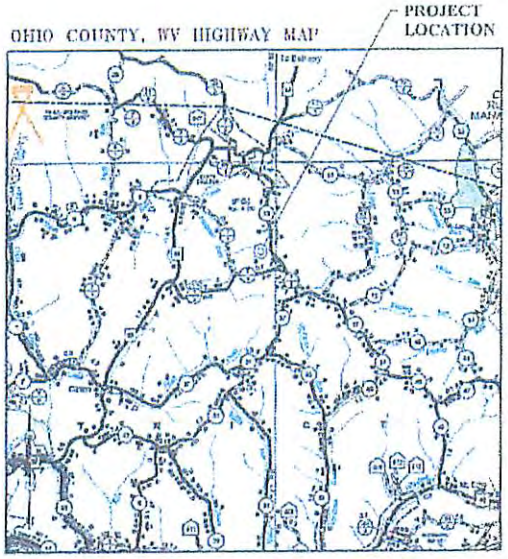
THRASHER
THE THRASHER GROUP, INC.
800 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330
PHONE (304) 624-4108 FAX (304) 624-7831

PHASE No.
CONTRACT No.
PROJECT No. 101-050-5635

SOUTHWESTERN ENERGY
AS-BUILT PLANS FOR THE
SHAWN COUCH PAD "A"
OHIO COUNTY, OH
AS-BUILT WELL PAD PLAN

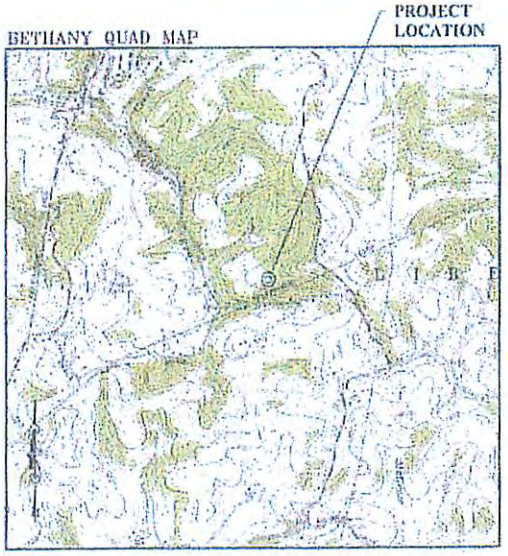
SHEET No. 6

OHIO COUNTY, WV HIGHWAY MAP



HIGHWAY MAP SCALE

BETHANY QUAD MAP



VICINITY MAP SCALE

SOUTHW

AS-BU

SHAWN

LIBERTY DIS

N

AS-BUILT ACCESS ROAD BEGINNING
NAD83 Latitude = N 40.148737°
NAD83 Longitude = W 80.584006°
UTM 83-17 Northing = 14581167.5010 ft.
UTM 83-17 Easting = 1756663.1100 ft.

AS-BUILT CENTER OF WELL PAD
NAD83 Latitude = N 40.147867°
NAD83 Longitude = W 80.588565°
UTM 83-17 Northing = 14580844.5644 ft.
UTM 83-17 Easting = 1755390.7053 ft.

PROJE
LOCATI

THR

WEST

ONE CALL UTILITY SYSTEM CONTACT INFO

WEST VIRGINIA 811

CONTRACTOR SHALL NOTIFY THE ONE-CALL SYSTEM OF THE INTENDED EXCAVATION OR DEMOLITION NOT LESS THAN FORTY-EIGHT (48) HOURS, EXCLUDING SATURDAYS, SUNDAYS AND LEGAL FEDERAL OR STATE HOLIDAYS, NOR MORE THAN TEN (10) WORK DAYS PRIOR TO THE BEGINNING OF SUCH WORK.

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ESTERN ENERGY

LT PLANS FOR THE

COUCH PAD "A"

RICT, OHIO COUNTY, WV

VEMBER 2015

swn
Southwestern Energy®

SOUTHWESTERN ENERGY
179 Chesapeake Drive
Jane Lew, WV 26378
(304) 884-1610

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SHAWN COUCH PAD "A" WELLS

EXISTING WELL 1H: API# 47-069-00072
EXISTING WELL 8H: API# 47-069-00103

4706900206

RUSSELL B. MESSENGER
REGISTERED
10220
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER
11/19/15

REVISION NUMBER	REVISED SHEETS	BY	DATE	DESCRIPTION

11.19.15

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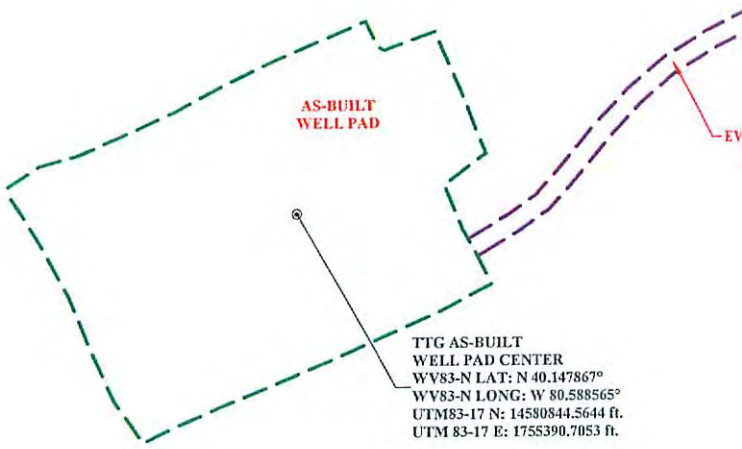

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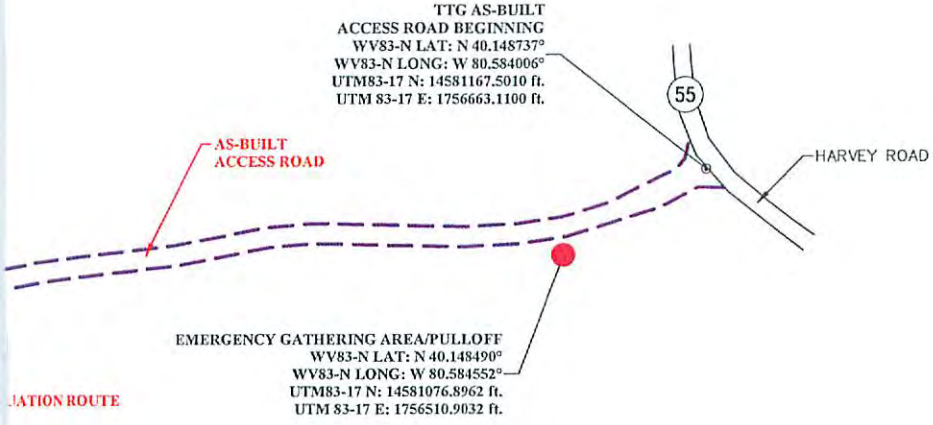
DRAWN:	
CHECKED:	
APPROVED:	
SURVEY DATE:	
SURVEY BY:	
FIELD BOOK No.:	

LAYOUT TAB: 02-ExPlan
CAD FILE: R:\050-5635-Shawn Couch Well Plats-Southwestern-\Drawing\5635-EvacuationPlan-As-Built.dwg PLOT DATE/TIME: 11/18/2015 2:17 PM

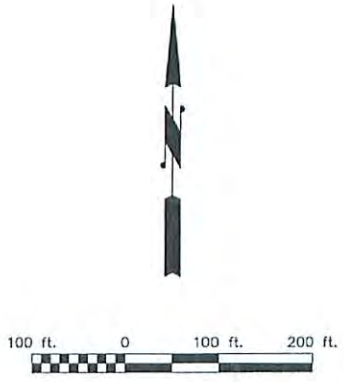
EVACUATION ROUTE PLAN LEGEND

- TTG AS-BUILT ROAD EDGE
- TTG AS-BUILT PAD EDGE
- TTG AS-BUILT EDGE OF PAVEMENT

PREVAILING WINDS



PREVAILING WINDS



DATE: DATE: DATE:	THRASHER THE THRASHER GROUP, INC. 600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330 PHONE (304) 624-4108 FAX (304) 624-7831	PHASE No. CONTRACT No. PROJECT No. 101-050-5635	SOUTHWESTERN ENERGY AS-BUILT PLANS FOR THE SHAWN COUCH PAD "A" OHIO COUNTY, OH EVACUATION ROUTE/PREVAILING WINDS	SHEET No. 2