



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

, Governor
, Cabinet Secretary
www.dep.wv.gov

WELL WORK PERMIT
/

Re: Permit approval for

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.

Please be advised that form WR-35, Well Operators Report of Well Work 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.

Chief

Operator's Well Number:

Farm Name:

U.S. WELL NUMBER:

/

Date Issued:

Promoting a healthy environment.

08/04/2017

PERMIT CONDITIONS

API 047-069-00226

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. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. 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.
10. 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.

08/04/2017

PERMIT CONDITIONS

API 047-069-00226

11. 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
(04/15)

API NO. 47-069 -
OPERATOR WELL NO. Edward Dremak OHI 1H
Well Pad Name: Edward Dremak 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 069-Ohio 4-Richland 641-Tiltonsville
Operator ID County District Quadrangle

2) Operator's Well Number: Edward Dremak OHI 1H Well Pad Name: Edward Dremak OHI Pad

3) Farm Name/Surface Owner: Edward Dremak & Joanne Dremak Public Road Access: Waddells Run Road

4) Elevation, current ground: 1087' Elevation, proposed post-construction: 1080'

5) Well Type (a) Gas X Oil Underground Storage
Other

(b) If Gas Shallow X Deep
Horizontal X

6) Existing Pad: Yes or No No *Handwritten: 3-30-17*

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Target Top TVD-5781', Target Base TVD- 5821', Anticipated Thickness- 40', Associated Pressure- 3480

8) Proposed Total Vertical Depth: 5800'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 14008'

11) Proposed Horizontal Leg Length: 7797'

12) Approximate Fresh Water Strata Depths: 472'

13) Method to Determine Fresh Water Depths: Offset Wells

14) Approximate Saltwater Depths: 1083'

15) Approximate Coal Seam Depths: 840'

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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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	H-40	48#	900'	900'	826 sx/CTS
Coal	9 5/8"	New	J-55	36#	1747'	1747'	630 sx/CTS
Intermediate	7"	New	HCP-110	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	14008'	14008'	Head 7000; Tail 1007m; Include Inconel
Tubing	2 3/8"	New	HCP-110	4.7#	Approx. 5800'	Approx. 5800'	
Liners							

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal 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	1.20/50% Excess
Production	5 1/2"	8 3/4"	0.361	12360	9500	Class A	1.20/50% Excess
Tubing	2 3/8"	4.778"	0.190	Approx 8193'	Approx 8193'		
Liners							

PACKERS

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

WVDEP OOG JUL 13 2017

WW-6B
(10/14)

API NO. 47- 069 -
OPERATOR WELL NO. Edward Dremak OHI 1H
Well Pad Name: Edward Dremak 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 20' below void nor more than 50' below void. (*If freshwater is encountered deeper than anticipated it must be protected, set casing 50' 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): 23.7

22) Area to be disturbed for well pad only, less access road (acres): 8.0

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.

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	proprietary
	D047	antifoam	polypropylene glycol	25322-69-4
Production-Lead	D167	fluid loss	aliphatic amide polymer	proprietary
	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 (attapulgitite)	8031-18-3
	D201	retarder	chrySTALLINE silica	14808-60-7
			metal oxide	proprietary
	D202	dispersant	sulphonated synthetic polymer	proprietary
formaldehyde (impurity)			proprietary	
Production-Tail	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgitite)	8031-18-3
	D167	fluid loss	aliphatic amide polymer	proprietary
	D065	dispersant	sodium polynaphthalene sulfonate	9008-63-3
			sodium sulfate	7757-82-6
	D201	retarder	chrySTALLINE silica	14808-60-7
			metal oxide	proprietary
D153	anti-settling	chrySTALLINE silica	14808-60-7	

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Southwestern Energy Company

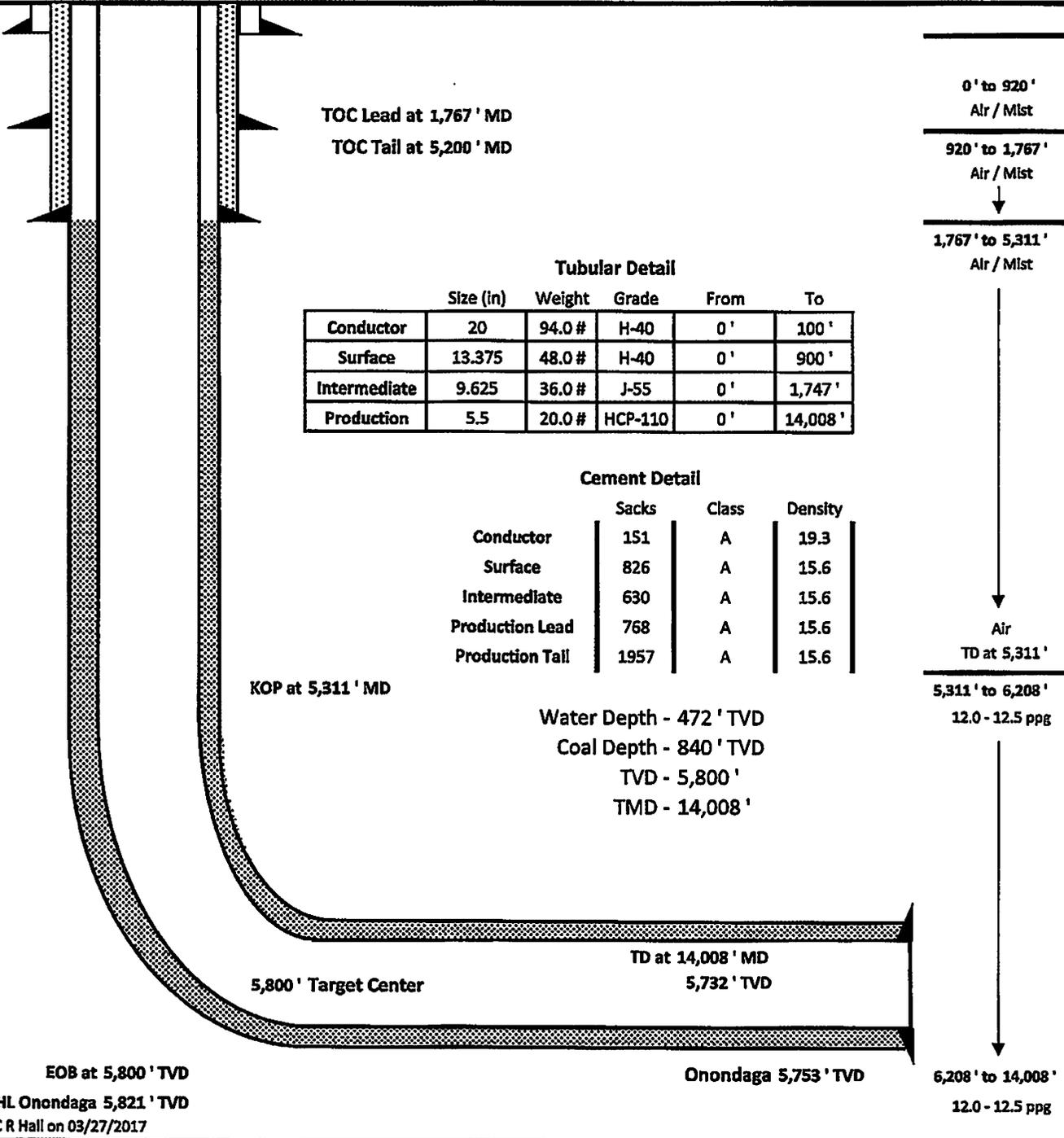
Proposed Drilling Program

Well: EDWARD DREMAK OHI 1
 Field: PANHANDLE FIELD
 County: OHIO
 SHL: 40.1588 Latitude -80.6516 Longitude
 BHL: 40.1805 Latitude -80.6623 Longitude
 KB Elev: 1,121 ft MSL

Re-entry Rig: TBD
 Prospect: PANHANDLE
 State: WV



KB: 26 ft AGL GL Elev: 1,095 ft MSL



Tubular Detail

	Size (in)	Weight	Grade	From	To
Conductor	20	94.0 #	H-40	0'	100'
Surface	13.375	48.0 #	H-40	0'	900'
Intermediate	9.625	36.0 #	J-55	0'	1,747'
Production	5.5	20.0 #	HCP-110	0'	14,008'

Cement Detail

	Sacks	Class	Density
Conductor	151	A	19.3
Surface	826	A	15.6
Intermediate	630	A	15.6
Production Lead	768	A	15.6
Production Tail	1957	A	15.6

Created by: C R Hall on 03/27/2017



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

March 14, 2017

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

RE: Proposed New Well Edward Dremak OHI 1H

Dear Ms. Adkins

SWN has reviewed the area of the above mentioned well and discovered no shallow wells within 500' of the lateral. This well is situated on the Dremak's property, in Richland District, Ohio County, West Virginia.

If you have any questions or desire additional information, please me at 304-884-1614

Thank you.

Sincerely,

A blue ink handwritten signature, appearing to be "Dee Southall", written over the word "Sincerely,".

Dee Southall
Regulatory Supervisor
Southwestern Energy Production Company, LLC
PO Box 1300
Jane Lew, WV 26378

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The Value+ logo, featuring the letters "R" and "A" stacked vertically on the left, with a red arrow pointing from the "A" to the "V" in "V+", which is followed by a registered trademark symbol (®).

08/04/2017

WW-9
(4/16)

API Number 47 - 69 - _____
Operator's Well No. Edward Dremak OHI 1H

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name SWN Production Company, LLC OP Code 494512924

Watershed (HUC 10) Upper Ohio Wheeling Quadrangle Tiltonsville

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 _____)
- 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 SOBMs 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 100/2, American U2-12954, Country Wide 38390/CID38390, Pine Grove 13688
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 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 [Signature]

Company Official (Typed Name) Dee Southall

Company Official Title Regulatory Supervisor

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Subscribed and sworn before me this 14th day of March, 2017

Brittany R Woody
My commission expires 11/27/18

Notary Public



Drilling Mediums

Synthetic Oil

Brine

Barite

Calcium Chloride

Lime

Organophilic Bentonite

Primary and Secondary Emulsifiers

Gilsonite

Calcium Carbonate

Friction Reducers

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Form WW-9

Operator's Well No. Edward Dremak OHI 1H

SWN Production Company, LLC

Proposed Revegetation Treatment: Acres Disturbed 25.3 Prevegetation pH _____

Lime as determined by pH test min. 2 Tons/acre or to correct to pH 8.0

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

****See Attachment**

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, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: _____

E. BLO 3-30-17

Comments: _____

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Title: oil and gas inspector

Date: 3-30-17

Field Reviewed?

() Yes

() No



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WVD Seeding Specification

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

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To Order Seed contact Lyndsi Eddy Filippa office 570-996-4271 cell 501-269-5451 lyndsi_eddy@swn.com (please allow 7 to 10 days for delivery)

NON-ORGANIC PROPERTIES		
Seed Mixture: ROW Mix	SWN Supplied	
Orchardgrass	40%	
Timothy	15%	
Annual Ryegrass	15%	
Brown Top Millet	5%	
Red Top	5%	
Medium Red Clover	5%	All legumes are innoculated at 5x normal rate
White Clover	5%	
Birdsfoot Trefoil	5%	
Rough Bluegrass	5%	
Apply @ 100lbs per acre April 16th- Oct. 14th		Apply @ 200lbs per acre Oct. 15th- April 15th PLUS 50lbs per acre of Winter Wheat

SOIL AMENDMENTS	
10-20-20 Fertilizer	*Apply @ 500lbs per Acre
Pelletized Lime	Apply @ 2 Tons per Acre
*unless otherwise dictated by soil test results	

Seeding Calculation Information:
1452' of 30' ROW/LOD is One Acre
871' of 50' ROW/LOD is One Acre
622' of 70' ROW/LOD is One Acre

Synopsis:
Every 622 linear feet in a 70' ROW/LOD, you should be using (2) 50lb bags of seed, (4) 50lb bags of fertilizer and (80) 50lb bags of Lime (2x seed in winter months + 50lb Winter Wheat/ac).

Special Considerations:
Landowner Special Considerations including CREP program participants require additional guidance that is not given here. Discuss these requirements with SWN supervision at the beginning of the project to allow time for special seed delivery.

ORGANIC PROPERTIES	
Seed Mixture: SWN Production Organic Mix	SWN Supplied
Organic Timothy	50%
Organic Red or White Clover	50%
OR	
Organic Perennial Ryegrass	50%
Organic Red or White Clover	50%
Apply @ 100lbs per acre April 16th- Oct. 14th	
Organic Fertilizer @ 200lbs per Acre	
Apply @ 200lbs per acre Oct. 15th- April 15th	
Pelletized Lime @ 2 Tons per Acre	

WETLANDS (delineated as jurisdictional wetlands)	
Seed Mixture: Wetland Mix	SWN Supplied
VA Wild Ryegrass	20%
Annual Ryegrass	20%
Fowl Bluegrass	20%
Cosmos 'Sensation'	10%
Redtop	5%
Golden Tickseed	5%
Maryland Senna	5%
Showy Tickseed	5%
Fox Sedge	2.5%
Soft Rush	2.5%
Woolgrass	2.5%
Swamp Verbena	2.5%
Apply @ 25lbs per acre April 16th- Oct. 14th	
Apply @ 50lbs per acre Oct. 15th- April 15th	
NO FERTILIZER OR LIME INSIDE WETLAND LIMITS	

API 047-069-00226

MARCELLUS WELL DRILLING PROCEDURES AND WELL SITE SAFETY PLAN



SWN Production Company, LLC
179 Innovation Drive
Jane Lew, West Virginia 26378

API NO. 47-XXX-XXXXX
WELL NAME: Edward Dremak OHI 1H
Tiltonsville QUAD
Richland DISTRICT
Ohio COUNTY, WEST VIRGINIA

Submitted by:

Dee Southall

Date: 3/14/2017

Title: Regulatory Supervisor

SWN Production Co., LLC

Approved by:

E. J. Hill
Title: E. J. Hill Oil & Gas Inspector

Date: 3-30-17

Approved by:

Date: _____

Title: _____

SWN PRODUCTION COMPANY, LLC

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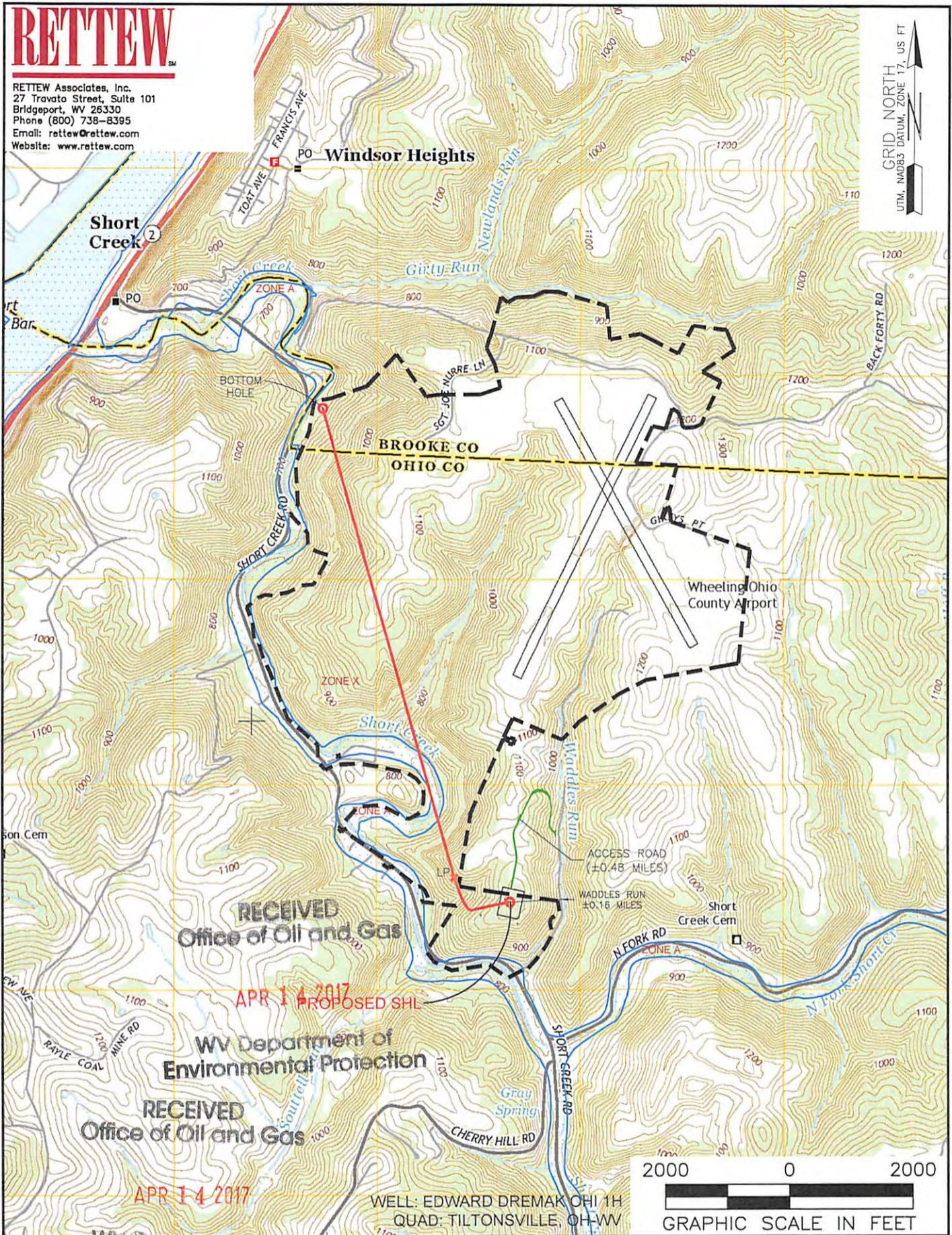
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08/04/2017



RETTEW Associates, Inc.
27 Travato Street, Suite 101
Bridgeport, WV 26330
Phone (800) 738-8395
Email: rettew@rettew.com
Website: www.rettew.com

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



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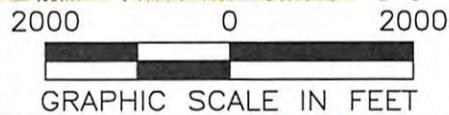
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APR 14 2017

WELL: EDWARD DREMAK OHI 1H
QUAD: TILTONSVILLE, OH-WV



NAME AND DISTANCE TO THE NEAREST STREAM / STREAM CROSSING COORDINATES (NAD 83):
WADDLES RUN ±0.16 MILES
ACCESS ROAD ±0.48 MILES

COMPANY:
SWN
Production Company, LLC

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 LARGER THAN 2500 SQ FT: >625 FEET

OPERATOR'S: EDWARD DREMAK OHI
WELL #: 1H
LOCATION: RICHLAND/BUFFALO DISTRICTS, OHIO/BROOKE COUNTIES, WEST VIRGINIA

FEMA FLOOD INFORMATION:
BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF OHIO/BROOKE COUNTY, WEST VIRGINIA; MAP NUMBER 54069C0016D/54069C0020D; EFFECTIVE DATE: JULY 17, 2006

SURFACE HOLE LOCATION:
GEOGRAPHIC (NAD83):
LATITUDE: 40.158773'
LONGITUDE: -80.651562'

08/04/2017

LEGEND:
PROPOSED SURFACE HOLE / BOTTOM HOLE
EXISTING / PRODUCING WELLHEAD
ABANDONED WELL
PLUGGED & ABANDONED WELL
PERMITTED BUT NOT DRILLED

BOTTOM HOLE LOCATION:
GEOGRAPHIC (NAD83):
LATITUDE: 40.180473'
LONGITUDE: -80.662310'

LEASE BOUNDARY
ACCESS ROAD
ACCESS ROAD TO PREV. SITE
HIGHWAY/INTERSTATE
COUNTY ROAD

REVISIONS:
DATE: 04-11-2017
DRAWN BY: W. McCLEAF
SCALE: 1" = 2000'
DRAWING NO: 087569045
TOPOGRAPHIC MAP

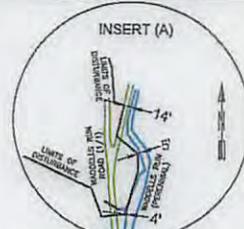
SHL Latitude: 40°10'00" 7,421'

BHL Latitude: 40°12'30" 10,421'

RETTEW

RETTEW Associates, Inc.
27 Travato Street, Suite 101
Bridgeport, WV 26330
Phone (800) 738-8395
Email: rettew@rettew.com
Website: www.rettew.com

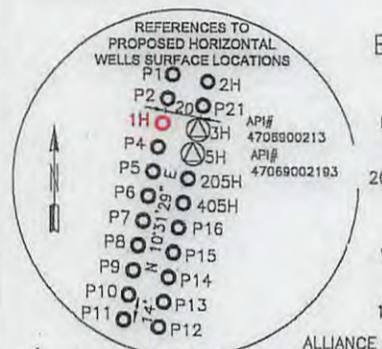
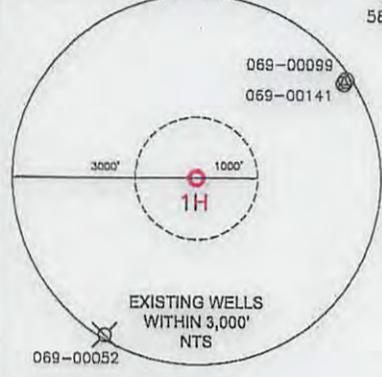
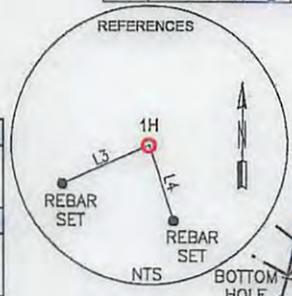
LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 81°38'55" W	350.09'	SHL TO LANDMARK	
L2	N 88°24'44" E	767.47'	SHL TO LANDMARK	
L3	S 65°49'27" W	526.54'	SHL TO REF. PNT.	REBAR W/CAP
L4	S 18°06'57" E	358.52'	SHL TO REF. PNT.	REBAR W/CAP



SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,445,437.911
EASTING: 529,673.611

LANDING POINT LOCATION (LPL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,445,557.558
EASTING: 529,400.870

BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,447,842.937
EASTING: 528,749.093



RODNEY K. MCCONNELL AND NEDRA C. MCCONNELL
04-R2-20
58.02± ACRES

S E W TRUST
c/o SHANE E. WOLOSHAN
04-R5-9
220.947± ACRES

BURNT MILLS ACRES LLC
04-R5-13
20.332± ACRES

JOHN W. METZ
04-R5-46
22.63± ACRES

WINDSOR COAL COMPANY
04-R5-50
19.447± ACRES

ALLIANCE RESOURCE GP LLC
04-R5-53
13.12± ACRES



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. 2313



COMPANY: **SWN** Production Company, LLC

EDWARD DREMAK OHI
OPERATOR'S WELL #: 1H
API WELL #: 47 69 00226
STATE COUNTY PERMIT

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW
WATERSHED: UPPER OHIO WHEELING
DISTRICT: RICHLAND COUNTY: OHIO
SURFACE OWNER: DREMAK, EDWARD W. & JOANNE V.
OIL & GAS ROYALTY OWNER: DREMAK, EDWARD W. & JOANNE V.
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: 5,800' TVD 14,008' TMD

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

LEGEND:
PROPOSED SURFACE HOLE / BOTTOM HOLE
EXISTING / PRODUCING WELLHEAD
ABANDONED WELL
PLUGGED & ABANDONED WELL
PERMITTED BUT NOT DRILLED
EXISTING SPRING
EXISTING WATER WELL
TIE LINE
LEASE BOUNDARY
PROPOSED PATH
ABANDONED PATH
REVISIONS:
DATE: 04-11-2017
DRAWN BY: W. McCLEAF
SCALE: 1" = 2000'
DRAWING NO: 087569045
WELL LOCATION PLAT



RETTEW Associates, Inc.
 27 Travato Street, Suite 101
 Bridgeport, WV 25330
 Phone (800) 738-8395
 Email: rettetw@rettetw.com
 Website: www.rettetw.com

ADJOINING OWNERS

TRACT	SURFACE OWNERS	TAX PARCEL	ACRES
A	WINDSOR POWER COAL COMPANY	04-R8-8-1	59.13±
B	EDWARD W. & JOANN V. DREMAK	04-R8-54-1	0.69±
C	CHRISTOPHER A. WADDELL	04-R8-8-18	0.93±
D	EDWARD N. & SUSAN L. CAIN	04-R8-8-3	1.95±
E	ALLIANCE RESOURCE GP LLC	04-R8-6	169.98±
F	ALLIANCE RESOURCE GP LLC	04-R5-52	6.32±
G	WHEELING ELECTRIC COMPANY	04-R5-52-1	0.39±
H	ALLIANCE RESOURCE GP LLC	04-R5-51-1	1.18±
I	WINDSOR COAL COMPANY	04-R5-50-3	2.19±
J	WINDSOR COAL COMPANY	04-R5-50-5	0.876±
K	WINDSOR COAL COMPANY	04-R5-50-7	0.16±
L	WINDSOR COAL COMPANY	04-R5-50-6	0.59±
M	PAULA RUTTER	04-R5-45-14	2.09±
N	TUNNEL RIDGE LLC	04-R5-45-8	5.04±
O	ROBERT S. & NANCY A. KISH	04-R5-45-15	0.32±
P	CARL & LORAIN C. TIMPSON	04-R5-45-18	0.22±
Q	MARION S. PAVLIC	04-R5-45	0.91±
R	JOHN STANLEY WALTERS	04-R5-45-5	0.85±
S	JOHN W. METZ	04-R5-45-3	0.97±
T	JOHN W. METZ	04-R5-45-2	1.59±
U	OHIO COUNTY PUBLIC SERVICE DISTRICT	04-R5-45-17	0.22±
V	JOHN W. METZ	04-R5-45-11	27.41±
W	KEVIN T. WOODFORD	04-R5-47	15.51±
X	PAUL K. YOUNG	04-R5-48	7.42±
Y	OHIO COUNTY PUBLIC SERVICE DISTRICT	04-R5-13-1	0.04±
Z	ROBERTA M. & G B KORNER	04-R5-45-12	2.13±
AA	JULIE A. KOEHLER	04-R5-45-4	2.838±
BB	JULIE A. KOEHLER	04-R5-45-13	3.662±
CC	HELEN TAYLOR	04-R5-12	0.68±
DD	HELEN TAYLOR	04-R5-14	0.56±
EE	HUMPHREY D. JR. & T. M. FLICK	04-R5-15	1.64±
FF	DALE A. VILLIANI AND JENNIFER A. VILLIANI	04-R5-16	1.63±
GG	DALE A. VILLIANI AND JENNIFER A. VILLIANI	04-R5-17-1	0.438±
HH	ROBERT N. & C. L. CONNER	04-R5-17	7.16±
II	PATRICIA ROUSH	04-R5-18	1.8707±
JJ	ERVAN D. TRUBIANO AND NANCY G. TRUBIANA	04-R5-19	1.01±
KK	BRIAN W. SOWIZRAL AND MELINDA K. SOWIZRAL	04-R5-20-1	5.683±
LL	DENNIS J. HOSKINS AND SHEINA L. HOSKINS	04-R5-20-4	4.84±
MM	HAROLD COAST AND LINDA COAST	04-R5-2-9	10.94±
NN	ROBERT KUBOVICZ	04-R5-8	13.91±
OO	JOHN E HARWATT AND E R HARWATT	04-R5-8-2	1.90±
PP	SHORT CREEK ROAD	04-R2-9999-9999	
QQ	RODNEY K. MCCONNELL AND NEDRA C. MCCONNELL	03-R46-14	2.75±
RR	HENRY W. ZEIDLER AND JUDITH K. ZEIDLER	03-R46-15	66.01±
SS	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B46-18	20.52±
TT	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B41-32	57.28±
UU	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B41-83	83.41±
VV	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B46-19	7.14±
WW	STACY ANN GREATHOUSE AND PATRICIA ANN	03-B46-41	5.00±
XX	GREATHOUSE		
	BARRY L. GREATHOUSE AND PATRICIA A. GREATHOUSE	03-B41-82	229.00±
YY	DANNY GENE BRITT AND VIRGINIA BRITT	03-B46-27	106.53±
ZZ	TRACY GILBERT	03-B46-22	10.00±
AAA	BRUCE D. BONAR (3/4) WILLIAM BONAR (1/4)	03-B46-20	113.00±
BBB	MARC SEAMON	04-R6-2	93.627±
CCC	BOARD OF COMMISSIONERS OF OHIO COUNTY	04-R5-55	239.50±
DDD	EDWARD W. DREMAK AND JOANN V. DREMAK	04-R5-49	87.575±

REVISIONS:	COMPANY:	SWN Production Company, LLC	SWN Production Company™	<i>R+</i> <i>A</i> <i>V+</i> <i>0</i> 08/04/2017
	OPERATOR'S	EDWARD DREMAK OHI		DATE: 04-11-2017
	WELL #:	1H		DRAWN BY: W. McCLEAF
	LOCATION:	RICHLAND/BUFFALO DISTRICTS, OHIO/BROOKE COUNTIES, WEST VIRGINIA		SCALE: N/A
				DRAWING NO: 087569045
				ADJOINING OWNERS

WW-6A1
(5/13)

Operator's Well No. Edward Dremak OHI 1H

**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"

RECEIVED
Office of Oil and Gas

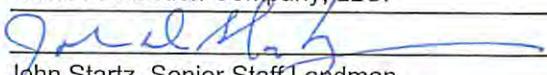
APR 14 2017
WV Department of
Environmental Protection

**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, LLC.
By: 
Its: John Startz, Senior Staff Landman

4706900226

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by Chesapeake Appalachia, L.L.C., Operator
Edward Dremak OHI 1H
Ohio County, West Virginia

TMP	LEASE #	LESSOR	LESSEE	ROYALTY	BK/PG
4-R5-54	729403-000	Edward W Dremak and Joanne V Dremak	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	16.75%	810/722 884/121
4-R5-53	746192-001	Alliance Resources GP LLC	SWN Production Company, LLC	17%	916/98
4-R5-50	Pending	CNX Gas Company LLC, a Virginia Limited Liability Company	SWN Production Company, LLC; Statoil USA Onshore Properties Inc.	18%	921/653
4-R5-46	735830-000	John W Metz	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	814/390 884/693
4-R5-10	727321-000	The Board of Ohio County Commissioners	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	802/742 893/13
4-R5-13	729329-000	Edward W Dremak and Joanne V Dremak	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	814/582 884/109
4-R5-9	730349-000	S E W Trust, Shane E Woloshan, Trustee	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	812/384 898/212
4-R2-20	729440-000	Rodney K McConnell and Nedra C McConnell	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	819/737 884/133

WVDEP OOG JUL 24 2017

MEMORANDUM OF OIL AND GAS LEASE

This MEMORANDUM OF OIL AND GAS LEASE ("Memorandum") is entered into as of the 7th day of April, 2017 by and between, CNX GAS COMPANY LLC, a Virginia limited liability company with an address at 1000 CONSOL Energy Drive, Canonsburg, Pennsylvania 15317 "Lessor," and SWN Production Company, LLC, a Texas limited liability company, having an address of 10000 Energy Drive, Spring, Texas 77389 and STATOIL USA ONSHORE PROPERTIES INC. a Delaware corporation with an address at 6300 Bridge Point Pkwy, Building 2, Suite 100, Austin, Texas 78730, "Lessee".

For and in consideration of the sum of Ten Dollars (\$10.00) cash in hand paid, and other good and valuable consideration, Lessor did make and execute in favor of Lessee an Oil and Gas Lease dated April 7, 2017 and made effective April 7, 2017, which provides for a five (5) year primary term covering the Lessor's interest in the following described lands:

Tax Map No: See Exhibit "A"

Containing 24.462 acres and located in the Richland District of Ohio County, West Virginia, for the purpose of drilling, operating for, producing and removing oil and gas and all the constituents thereof. This Lease may be extended beyond the primary term by certain activities including, without limitation, conducting operations, producing oil or gas, or making prescribed payments.

This Memorandum of Oil and Gas Lease is being made and filed for the purpose of giving third parties notice of the existence of the Lease described above. The execution, delivery and recordation of this Memorandum of Oil and Gas Lease shall have no effect upon, and is not intended as an amendment of the terms and conditions of the Lease.

THIS MEMORANDUM OF LEASE IS NOT A COMPLETE SUMMARY OF THE LEASE. IN THE EVENT OF A CONFLICT BETWEEN THE TERMS OF THIS MEMORANDUM OF LEASE AND THE LEASE, THE TERMS AND PROVISIONS OF THE LEASE SHALL CONTROL.

[Signature and Notary Pages Follow]

WVDEP OOG JUL 25 2017

4706900226

BOOK 921 PAGE 654

IN WITNESS WHEREOF this Memorandum of Oil and Gas Lease is executed as of the date first above written.

CNX Gas Company LLC

By: David W. Aman DF

Name: David W. Aman

Title: Assistant Vice President

SWN Production Company LLC

By: Jim R. Dewbre Jim R. Dewbre

Name:

Jim R. Dewbre

Title: Sr. Vice President of Land

Statoil USA Onshore Properties Inc.

By: A.J. Kieke AK

Name: A.J. Kieke

Title: Authorized Person

WVDEP OOG JUL 25 2017

4706900226

BOOK 921 PAGE 656

CORPORATE ACKNOWLEDGMENT

COMMONWEALTH/STATE OF TEXAS §

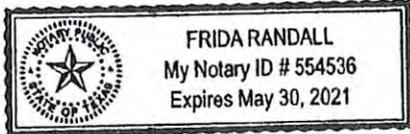
COUNTY OF TRAVIS §

On this 24th day of July, 2017, before me, the undersigned officer, personally appeared A. J. KROCK, JR. as AUTHORIZED PERSON of STATOIL USA ONSHORE PROPERTIES INC., a Delaware corporation, personally known (or satisfactorily proven) to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he/she executed the same for the purposes therein contained and on behalf of said corporation.

In witness thereof, I hereunto set my hand and affixed my official seal.

MY COMMISSION EXPIRES:

Frída Randall
Notary Public



This instrument has been prepared by:
CNX Gas Company LLC
1000 CONSOL Energy Drive
Canonsburg, PA 15137

WVDEP OOG JUL 25 2017

EXHIBIT "A"

Attached to and made a part of that certain Memorandum of Oil and Gas Lease dated April 7, 2017, by and between CNX Gas Company LLC, as Lessor, and SWN Production Company, LLC and Statoil USA Onshore Properties Inc., as Lessee.

QLS	Legacy	Grantor	Grantee	Date	District	County	Tax Parcel(s)	Gross Acres	CNX Net	Book/Page
250479000	702130	Thomas Safreed	Windsor Coal Company	12/15/1992	Richland	Ohio	04-00R5-0050-0000-0000	19.447	19.447	670/142
250478000	702129	Robert S. Safreed, et ux	Windsor Coal Company	12/15/1992	Richland	Ohio	04-00R5-0050-0003-0000	2.082	2.082	670/137
250478000	702129	Robert S. Safreed, et ux	Windsor Coal Company	12/15/1992	Richland	Ohio	04-00R50050-0004-0000	1.36	1.36	670/137
250478000	702129	Robert S. Safreed, et ux	Windsor Coal Company	12/15/1992	Richland	Ohio	04-00R50050-0005-0000	0.876	0.876	670/137
250477000	702128	Robert S. Safreed, Jr., et ux	Windsor Coal Company	12/15/1992	Richland	Ohio	04-00R50050-0006-0000	0.58	0.58	670/131
250477000	702128	Robert S. Safreed, Jr., et ux	Windsor Coal Company	12/15/1992	Richland	Ohio	04-00R50050-0007-0000	0.117	0.117	670/131

24.462

24.462

Ohio County
 Michael E. Kelly, Clerk
 Instrument 19651469
 06/21/2017 @ 10:16:48 AM
 OIL & GAS LEASE
 Book 921 @ Page 653
 Pages Recorded 5
 Recording Cost \$
 11.00

WVDEP 006 JUL 25 2017

BOOK 921 PAGE 657

4706900226

WW-6AC
(1/12)

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

Date of Notice Certification: 4/12/17

API No. 47- 069 -
Operator's Well No. Edward Dremak OHI 1H
Well Pad Name: Edward Dremak 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: <u>West Virginia</u>	UTM NAD 83	Easting: <u>529673</u>
County: <u>069-Ohio</u>		Northing: <u>4445437</u>
District: <u>Richland</u>	Public Road Access: <u>Waddells Run Road</u>	
Quadrangle: <u>Tiltonsville</u>	Generally used farm name: <u>Edward Dremak</u>	
Watershed: <u>Upper Ohio Wheeling</u>		

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.

<p>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:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 40px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

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(c), 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.

WV Department of Environmental Protection
 Office of Oil and Gas
 RECEIVED
 APR 12 2017

08/04/2017

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
By: Dee Southall
Its: Regulatory Supervisor
Telephone: 304-884-1614

Address: P.O. Box 1300
Jane Lew, WV 26378
Facsimile: _____
Email: Dee_Southall@swn.com



Subscribed and sworn before me this 14th day of March 2017
Brittany R Woody Notary Public
My Commission Expires 11/27/21

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.

WV Department of
Environmental Protection

APR 14 2017

RECEIVED
Office of Oil and Gas

WW-6A
(9-13)

API NO. 47- 069 -
OPERATOR WELL NO. Edward Dremak OHI 1H
Well Pad Name: Edward Dremak 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: 4/12/17 **Date Permit Application Filed:** 4/12/17

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: Edward Dremak & Joanne Dremak
Address: 503 Waddells Run Road
Wheeling, WV 26003

COAL OWNER OR LESSEE
Name: Consolidation Coal Company %Leatherwood
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

Name: _____
Address: _____

COAL OPERATOR
Name: _____
Address: _____

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

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)
Name: _____
Address: _____

Name: _____
Address: _____

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

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

WV Department of
 Environmental Protection
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*Please attach additional forms if necessary

08/04/2017

Attachment #1

Edward Dremak Water Purveyors - 1500 ft

LANDOWNER	SOURCE	WELL DEPTH	Address
/ David & Patricia Wolen	Well	112 ft	1826 Short Creek Rd., Wheeling WV 26003
/ David & Patricia Wolen	Well	78 ft	1826 Short Creek Rd., Wheeling WV 26003
/ Christopher Waddell	Spring		116 Wadeells Run Rd., Wheeling WV 26003
/ Edward Dremak	Spring		503 Waddells Run Rd., Wheeling WV 26003

WV Department of Environmental Protection

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API 047-069-00226

WW-6A
(8-13)

API NO. 47- 069 -
OPERATOR WELL NO. Edward Dremak OHI 1H
Well Pad Name: Edward Dremak 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.

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

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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(k), 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

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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- 069 -
OPERATOR WELL NO. Edward Dremak OHI 1H
Well Pad Name: Edward Dremak 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.

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08/04/2017

WW-6A
(8-13)

API NO. 47-069 -
OPERATOR WELL NO. Edward Dremak OHI 1H
Well Pad Name: Edward Dremak 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: 92816182780@fax.com

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 deprivacyofficer@wv.gov.



Subscribed and sworn before me this 14th day of March 2017.
Brittany R Woody Notary Public
My Commission Expires 11/27/2022

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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: 03/16/2017 **Date Permit Application Filed:** 4/12/17

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.

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

Name: Edward & Joanne Dremak
Address: 503 Waddells Run Road
Wheeling, WV 26003

Name: _____
Address: _____

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:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>529,673.611</u>
County:	<u>Ohio</u>		Northing:	<u>4,445,437.911</u>
District:	<u>Richland</u>	Public Road Access:	<u>Waddells Run</u>	
Quadrangle:	<u>Tiltonsville, OH-WV</u>	Generally used farm name:	<u>Edward Dremak</u>	
Watershed:	<u>Upper Ohio Wheeling</u>			

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
Address: PO Box 1300, 179 Innovation Drive
Jane Lew, WV 26378
Telephone: 304-517-6603
Email: Michael_Yates@swn.com
Facsimile: 304-471-2497

Authorized Representative: Mike Yates
Address: PO Box 1300, 179 Innovation Drive
Jane Lew, WV 26378
Telephone: 304-517-6603
Email: Michael_Yates@swn.com
Facsimile: 304-471-2497

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.

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Environmental Protection

WW-6A5
(1/12)Operator Well No. Edward Dremak OH1 1H

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: 03/16/2017 **Date Permit Application Filed:** 4/11/17

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

CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED 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.

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: Edward & Joanne Dremak

Name: _____

Address: 503 Waddells Run Road

Address: _____

Wheeling, WV 26003

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:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>529,673.611</u>
County:	<u>Ohio</u>		Northing:	<u>4,445,437.911</u>
District:	<u>Richland</u>	Public Road Access:	<u>Waddells Run</u>	
Quadrangle:	<u>Tiltonsville, OH-WV</u>	Generally used farm name:	<u>Edward Dremak</u>	
Watershed:	<u>Upper Ohio Wheeling</u>			

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: 304-517-6603
Email: Michael_Yates@swn.com

Address: PO Box 1300, 179 Innovation Drive
Jane Lew, WV 26378
Facsimile: 304-471-2497

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 state 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.

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08/04/2017



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
 Charleston, West Virginia 25305-0430 • (304) 558-3505

Jim Justice
 Governor

Thomas J. Smith, P. E.
 Secretary of Transportation/
 Commissioner of Highways

March 15, 2017

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 Edward Dremak Pad OHI 1H Well Site, Ohio County

47-069-00226

Dear Mr. Martin,

The West Virginia Division of Highways has issued permit 06-2017-0100 to Southwestern Energy for access to the State Road for the well site located off of Ohio County Route 1/1 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.

Very Truly Yours,

A handwritten signature in blue ink that reads "Gary K. Clayton".

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

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

08/04/2017

Product Name	Product Use	Chemical Name	CAS Number
EC6734A (Champion Technologies)	Biocide	Hydrogen Peroxide	7722-84-1
		Acetic Acid	64-19-7
		Peroxyacetic Acid	79-21-0
GYPTRON T-390 (Champion Technologies)	Scale Inhibitor	Methanol	67-56-1
		Nonylphenol Ethoxylate	Proprietary
Bactron K-139 (Champion Technologies)	Biocide	Glutaraldehyde	111-30-8
		Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides	68424-85-1
		Ethanol	64-17-5
Bactron K-219 (Champion Technologies)	Biocide	Methanol	67-56-1
		Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides	68424-85-1
A264 (Schlumberger)	Corrosion Inhibitor	Methanol	67-56-1
		Aliphatic Acids	Proprietary
		Prop-2-yn-1-ol	107-19-7
		Aliphatic Alcohols, Ethoxylated #1	Proprietary
Myacide GA 25 (Schlumberger)	Biocide	Water	7732-18-5
		Glutaral	111-30-8
Scale Inhibitor B317 (Schlumberger)	Scale Inhibitor	Trisodium Ortho Phosphate	7601-54-9
		Ethane-1,2-diol	107-21-1
H215 (Schlumberger)	Hydrochloric Acid	Hydrochloric Acid	7647-01-0
J218 (Schlumberger)	Breaker	Diammonium Peroxidisulphate	7727-54-0
EB-Clean* J475 (Schlumberger)	Breaker	Diammonium Peroxidisulphate	7727-54-0
Water Gelling Agent J580 (Schlumberger)	Gel	Carbohydrate Polymer	Proprietary
Friction Reducer J609W (Schlumberger)	Friction Reducer	Ammonium Sulfate	7783-20-2
		Urea	57-13-6
Crosslinker J610 (Schlumberger)	Crosslinker	Potassium Hydroxide	1310-58-3
		Aliphatic Polyol	Proprietary
Iron Stabilizer L58 (Schlumberger)	Iron Stabilizer	Sodium Erythorbate	6381-77-7
40/70-Mesh Sand S012 (Schlumberger)	Sand	Crystalline Silica	14808-60-7
Sand S100 (Schlumberger)	Sand	Crystalline Silica	14808-60-7
EC6486A (Nalco Champion)	Scale Inhibitor	Amine Triphosphate	Proprietary
		Ethylene Glycol	107-21-1
SSA-2 (Halliburton)	Sand	Crystalline Silica	14808-60-7
FR-76 (Halliburton)	Friction Reducer	Inorganic salt	64742-47-8
		Hydrotreated light petroleum distillate	
LCA-1 (Halliburton)		Hydrotreated light petroleum distillate	Proprietary
SP BREAKER (Halliburton)	Breaker	Sodium Persulfate	7775-27-1
HAI-150E (Halliburton)	Corrosion Inhibitor	Methanol	NA
		Aliphatic Acids	
		Prop-2-yn-1-ol	
		Aliphatic Alcohols, Ethoxylated #1	
Hydrochloric Acid 10-30% (Halliburton)		Hydrochloric Acid	7647-01-0
WG-36 Gelling Agent (Halliburton)	Gel	Polysaccharide	9000-30-0
BC-140C (Halliburton)	Crosslinker		NA

APPROVED
WVDEP OOG
 Modification
 3/2/2017

EROSION & SEDIMENT CONTROL PLAN FOR EDWARD DREMAK WELL PAD RICHLAND TAX DISTRICT, OHIO COUNTY, WEST VIRGINIA

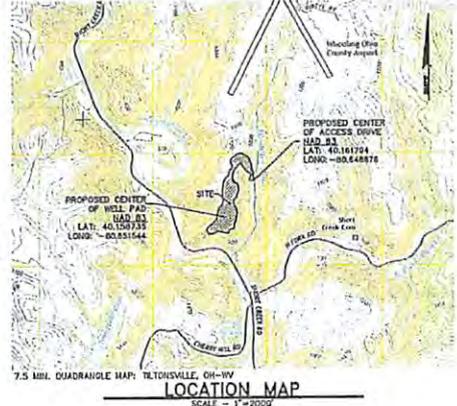
GENERAL NOTES

- THE BOUNDARY AND TOPOGRAPHIC SURVEY FOR THE PROJECT AREA WERE PERFORMED BY RETEVE ASSOCIATES IN JANUARY 2016 AND SEPTEMBER 2016.
- PROPERTY BOUNDARIES, LANDOWNER EASEMENTS AND ROAD NETWORKS SHOWN ON THIS PLAN ARE BASED ON AVAILABLE COUNTY GIS DATA.
- EXISTING SURVEYED TREE, LINE AND ROADWAYS HAVE BEEN LOCATED PER AVAILABLE ONLINE AERIAL PHOTOGRAPHY.
- THE HORIZONTAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN DATUM 1983 (NAD 83) NORTH ZONE.
- THE VERTICAL DATUM IS WEST VIRGINIA STATE PLANE, NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88) WHICH INDICATES FROM PIED MOUNT TOPOGRAPHIC SURVEY.
- A WELAND SURVEY WAS PERFORMED BY RETEVE ASSOCIATES IN DECEMBER 2015 AND SEPTEMBER 2016.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING PRIOR TO CONSTRUCTION ALL NECESSARY CONSTRUCTION PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL GOVERNMENT AGENCIES.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS, INCLUDING ALL SAFETY REQUIREMENTS.
- SWN PRODUCTION CO. LLC RESERVES THE RIGHT TO ACCEPT OR REJECT ANY AND ALL BIDS AT ITS DISCRETION. ALL WORK WILL BE PERFORMED UPON AND SUBJECT TO THE TERMS AND CONDITIONS OF SWN PRODUCTION CO. LLC'S MASTER SERVICE AGREEMENT EXECUTED BETWEEN THE COMPANY AND US ENERGY SERVICES. SHOULD CONTRACTOR UNDERSTAND THAT CONTRACTOR SHALL PROVIDE ADDITIONAL LABOR AND MATERIALS TO COMPLETE THE WORK AT THE COST TO SWN PRODUCTION CO. LLC. ALL MEASUREMENTS ARE ESTIMATES GIVEN FOR PLANNING PURPOSES. CONTRACTOR IS RESPONSIBLE TO BID ON THE BASIS OF THE SITE PLAN DRAWINGS PROVIDED.
- THE CONSTRUCTION START DEADLINE IS BEING PROVIDED AS THE DATE SWN PRODUCTION CO. LLC MAY LOSE ITS RIGHTS TO CONDUCE WORK UNDER THIS BID AND DRILL THE PROPOSED WELL. IF THE WORK PROVIDED FOR UNDER THIS BID IS NOT TIMELY COMMENCED, BY SUBMITTING THIS BID, CONTRACTOR IS AGREEING TO COMMENCE THE WORK PRIOR TO THE DEADLINE PROVIDED HEREIN. FAILURE TO COMMENCE THE WORK DETAILED IN THIS PACKAGE IN A TIMELY MANNER MAY CAUSE DAMAGES TO SWN PRODUCTION CO. LLC FOR WHICH CONTRACTOR SHALL BE HELD RESPONSIBLE.
- THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL PROJECT BONDING REQUIREMENTS WHEN CONSTRUCTING PUBLIC INFRASTRUCTURE. ALL PRIVATE CONSTRUCTION FOR SWN PRODUCTION CO. LLC SHALL INCLUDE A MINIMUM 1-YEAR WARRANTY OF PERFORMANCE.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PREVENT ANY DAMAGE TO PRIVATE PROPERTY, FUTURE ACCESS TO ALL UTILITIES DURING CONSTRUCTION, HOTLY UTILITIES COMPANIES AND VERIFY LOCATION OF ALL UTILITIES PRIOR TO THE START OF CONSTRUCTION, AND PROJECT ALL UTILITIES TO REMAIN IN SERVICE.
- BARBERING AND TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM TO THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), TRAFFIC FLOW AND ACCESS SHALL BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TRAFFIC SAFETY MEASURES FOR WORK ON THE PROJECT.
- THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS GOVERNING EXCAVATION. THE CONTRACTOR SHALL PROVIDE DETAILED PLANS AND SPECIFICATIONS FOR TRENCH SAFETY SYSTEMS THAT COMPLY WITH APPLICABLE LAWS COVERING EXCAVATION WHEN APPLICABLE TO THE PROJECT. THESE PLANS SHALL BE SEALED BY AN ENGINEER EXPERIENCED IN THE DESIGN OF TRENCH SAFETY SYSTEMS AND LICENSED BY THE STATE IN WHICH THE WORK IS OCCURRING. CONTRACTOR SHALL SUBMIT THE PLAN TO SWN PRODUCTION CO. LLC PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS FOR WORK RELATED TO EXCAVATION.
- ANY DAMAGES THAT MAY OCCUR TO PROPERTY OR EXISTING IMPROVEMENTS SHALL BE RESTORED BY THE CONTRACTOR TO AT LEAST THE SAME CONDITION THAT THE PROPERTY OR IMPROVEMENTS WERE IN PRIOR TO THE DAMAGES. IN THE EVENT OF SUCH DAMAGE, CONTRACTOR SHALL NOTIFY SWN PRODUCTION CO. LLC IMMEDIATELY PRIOR TO THE RESTORATION. THIS RESTORATION SHALL BE SUBJECT TO THE OWNER'S APPROVAL. MOREOVER, THIS RESTORATION SHALL NOT BE A BASIS FOR ADDITIONAL COMPENSATION TO THE CONTRACTOR.
- THE MAXIMUM ALLOWABLE SLOPE FOR EARTHEN AREAS IS 3:1 TO 1 HORIZONTAL-TO-VERTICAL, UNLESS SPECIFIED OTHERWISE IN A SITE-SPECIFIC GEOLOGICAL REPORT.
- PRIOR TO FILL PLACEMENT, EXISTING SUBGRADE SHALL BE SCARPED TO A MINIMUM DEPTH OF 6". MOISTURE ADJUSTED TO OPTIMUM, AND RE-COMPACTED TO THE SAME DENSITY AND MOISTURE CONTENT AS THE PROPOSED FILL.
- IMPORTED SELECT FILL IS DEFINED AS UNFRACTIONATED SANDY CLAY TO CLAYEY SAND WITH A LIQUID LIMIT (LL) OF LESS THAN 25 PERCENT AND A PLASTICITY INDEX (PI) OF BETWEEN 6 AND 15. FILL MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING EIGHT (8) INCHES IN LOOSE DIMENSIONS.
- FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 85 PERCENT MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D 698), IN CONJUNCTION WITH THE COMPACTING OPERATION, FILL MATERIAL SHALL BE BROUGHT TO OPTIMUM MOISTURE AND COVERED.
- STORM DRAINAGE PIPING SHALL BE CONSTRUCTED OF A MINIMUM OF CLASS II REINFORCED CONCRETE PIPE (RCP), CORRUGATED METAL PIPE (CMP), OR HIGH-DENSITY POLYETHYLENE (HDPE) PIPE. A MINIMUM OF 1/2" OR 1/2" OF COVER SHALL BE MAINTAINED WHEN USING CMP OR HDPE PIPE. MINIMUM COVER SHALL BE 18" OR 18" COVER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE CONSTRUCTION SITE CLEAR OF ALL TRASH AND DEBRIS.
- PRIOR TO ANY EARTHWORK EXCAVATION OR TOPSOIL REMOVAL, ALL EROSION CONTROL MEASURES DETAILED ON THESE DRAWINGS SHALL BE PROPERLY INSTALLED. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY SWN PRODUCTION COMPANY, LLC AT ANY TIME.
- THE CONTRACTOR SHALL RESPECT STAKEPLACES AND EROSION CONTROL MEASURES AT A MINIMUM OF EVERY SEVEN (7) DAYS OR WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES OF RAINFALL.
- SILT FENCE AND SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL RE-VEGETATION HAS BEEN COMPLETELY ESTABLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS UNTIL PROJECT COMPLETION.
- DISTURBED AREAS THAT ARE SEEDED OR SOILED SHALL BE CHECKED PERIODICALLY TO SEE THAT GRASS COVERING REMAINS MAINTAINED UNTIL THE DISTURBANCE IS RELEASED FROM THE JOB SITE. DISTURBED AREAS SHALL BE WATERED, FERTILIZED, AND RESEEDED OR RE-CORDED IF NECESSARY.
- FOR DESIGN PURPOSES, THE PAD CROSS SECTION AND ROAD SECTION WAS ASSUMED TO BE 14'. THIS IS DUE TO SETTLEMENT OF THE CRUSHER RUN INTO THE R-3 ROAD.

WV Department of
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 APR 14 2017

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OPERATOR
 SWN PRODUCTION CO., LLC
 PO BOX 1500
 JANE LEW, WV 26378
 (833) 728-1010

LIMITS OF DISTURBANCE

PAD	8.0 ACRES
ROAD	15.7 ACRES
TOTAL	23.7 ACRES

PER LAND OWNER ACRES
 DREMAK, EDWARD W. & JOANNE V. 23.7

STAKING FLAG LEGEND

- TOP OF CUTS (YELLOW)
- GRADE AT TOP OF PAD/PROFILING (YELLOW & ORANGE)
- TOES OF FILL (ORANGE)
- TOP HOLE LOCATION (PINK)
- VERTICAL CUT & FILL AT PAD/PROFILING CORNER (ORANGE & BLACK STRIPES)
- EROSION & SEDIMENT CONTROL STRUCTURES (PINK & WHITE STRIPES)
- TOPSOIL STOCKPILE LOCATION (ORANGE & WHITE STRIPES)
- CENTERLINE OF EROSION CONTROL MEASURES (BLACK)
- EROSION & SEDIMENT CONTROL MEASURES (PINK & WHITE)
- CENTERLINE LEASE ROAD (LIME GREEN & ORANGE)
- CLWERT CROSSING (GREEN)

SOILS CLASSIFICATION

- QUC: GUERNEYSEY SILT LOAM, 3 TO 8% SLOPES
- QUC: GUERNEYSEY SILT LOAM, 8 TO 15% SLOPES
- QUC: GUERNEYSEY SILT LOAM, 15 TO 25% SLOPES
- YSH: YESHORELAND SILT LOAM, 3 TO 8% SLOPES
- YSH: YESHORELAND SILT LOAM, 8 TO 15% SLOPES
- YSH: YESHORELAND SILT LOAM, 15 TO 25% SLOPES
- YSH: YESHORELAND SILT LOAM, 25 TO 35% SLOPES
- YSH: YESHORELAND SILT LOAM, 35 TO 60% SLOPES

CUT & FILL

CUT (SOIL)	WELL PAD	ACCESS DRIVE	SITE
105 SOIL (SOIL)	+ 21,290 CY	+ 50,904 CY	+ 72,494 CY
105 SOIL (SOIL)	- 2,159 CY	- 8,000 CY	- 7,249 CY
CUT (ROCK)	+ 58 CY	+ 42,800 CY	+ 42,835 CY
105 ROCK SHELL	+ 875 CY	+ 875 CY	+ 875 CY
30% ROCK SHELL	+ 7 CY	+ 5,040 CY	+ 5,055 CY
50% ROCK SHELL	+ 1,381 CY	+ 1,381 CY	+ 1,381 CY
FILL	- 31,883 CY	- 78,792 CY	- 110,745 CY
NET	- 12,479 CY	- 19,728 CY	- 5,247 CY
STONE	+ 10,078 CY	+ 3,053 CY	- 12,141 CY
TOPSOIL	+ 4,710 CY	+ 5,550 CY	- 10,730 CY

- NOTES:**
- THE TOPSOIL DEPTH FOR THE ACCESS DRIVE IS 5.3'. THE TOPSOIL DEPTH FOR THE PAD IS 3.5'.
 - THE CUT & FILL SUMMARY CALCULATIONS PRESENTED ON THIS PLAN ARE FOR INFORMATIONAL PURPOSES ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXISTING GRADES AND VERIFY EARTHWORK VOLUMES, METHODS AND PROCEDURES. ANY ISSUES ARE TO BE BROUGHT TO THE ENGINEER'S AND OWNER'S ATTENTION PRIOR TO COMMENCEMENT OF WORK.

LIST OF DRAWINGS

- 1 OF 31 COVER SHEET & GENERAL NOTES
- 2 OF 31 OVERALL SITE PLAN
- 3 OF 31 DETAILED LAYOUT PLAN
- 4 OF 31 ENLARGED LAYOUT PLAN
- 5 OF 31 ENLARGED LAYOUT PLAN
- 6 OF 31 EROSION & SEDIMENT CONTROL PLAN
- 7 OF 31 EROSION & SEDIMENT CONTROL PLAN
- 8 OF 31 WV DEP EAS PLAN
- 9 OF 31 WV DEP EAS PLAN
- 10 OF 31 WV DEP EAS PLAN
- 11 OF 31 ACCESS DRIVE PROFILE
- 12 OF 31 ACCESS DRIVE PROFILE
- 13 OF 31 WELL PAD CROSS SECTIONS
- 14 OF 31 CROSS SECTIONS - PLAN VIEW
- 15 OF 31 CROSS SECTIONS - ACCESS DRIVE
- 16 OF 31 CROSS SECTIONS - ACCESS DRIVE
- 17 OF 31 CROSS SECTIONS - ACCESS DRIVE
- 18 OF 31 CROSS SECTIONS - ACCESS DRIVE
- 19 OF 31 CROSS SECTIONS - ACCESS DRIVE
- 20 OF 31 CROSS SECTIONS - ACCESS DRIVE
- 21 OF 31 CROSS SECTIONS - ACCESS DRIVE & PAD
- 22 OF 31 RECLAIMATION PLAN
- 23 OF 31 RECLAIMATION PLAN
- 24 OF 31 RECLAIMATION PLAN
- 25 OF 31 EROSION CONTROL PLAN
- 26 OF 31 EROSION CONTROL PLAN - USCS
- 27 OF 31 NOTES & DETAILS
- 28 OF 31 DETAILS
- 29 OF 31 DETAILS
- 30 OF 31 DETAILS
- 31 OF 31 GEOLOGICAL NOTES & DETAILS

WEST VIRGINIA 811
 CALL BEFORE YOU DIG!
 Dial 811 or 800.245.4848
 Miss Utility of West Virginia

AT LEAST 48 HOURS, BUT NOT MORE THAN 10 WORKING DAYS (EXCLUDING WEEKENDS AND HOLIDAYS), PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THESE ACTIVITIES SHALL CONTACT MISS UTILITY OF WEST VIRGINIA AT 811 OR 1-800-245-4848.

DATE: 10/28/2016 PROJECT #: 1830023001

ENGINEER'S ESTIMATE OF QUANTITIES

DESCRIPTION	ESTIMATED QUANTITY	UNITS
WELL SITE PAD DATA		
WELL PAD CUT (EXCLUDES TOPSOIL)	21,290	CY
TOE KEY EXCAVATION	6,225	CY
TOE KEY - STABLE FILL	6,225	CY
WELL PAD FILL (EXCLUDES TOPSOIL)	31,883	CY
WELL PAD TOPSOIL STRIPPINGS	22,724	CY
WELL PAD FINEST GRADING	610	CY
GEOTECHNICAL	22,724	RY
BASE ROCK R35 12" (ROCK PROVIDED BY QUARRY)	8,887	TON
PLACEMENT COST	3,882	TON
FINISH GRADE CRUSHER RUN 4" (ROCK PROVIDED BY QUARRY)	2,209	TON
PLACEMENT COST	2,209	TON
ACCESS ROAD DATA		
ACCESS ROAD CUT (EXCLUDES TOPSOIL)	42,835	CY
ACCESS ROAD FILL (EXCLUDES TOPSOIL)	78,792	CY
TOE KEY EXCAVATION	3,500	CY
TOE KEY - STABLE FILL	3,500	CY
ACCESS ROAD TOPSOIL STRIPPINGS	8,550	CY
ACCESS ROAD FINEST GRADING	3,305	CY
PLACEMENT OF TOPSOIL	2,738	CY
GEOTECHNICAL	6,147	RY
BASE ROCK R35 12" (ROCK PROVIDED BY QUARRY)	2,419	TON
PLACEMENT COST	3,145	TON
FINISH GRADE CRUSHER RUN 4" (ROCK PROVIDED BY QUARRY)	1,568	TON
PLACEMENT COST - ALTERNATE	3,145	TON
FINISH GRADE CRUSHER RUN 1.5" (ROCK PROVIDED BY QUARRY)	1,468	TON
PLACEMENT COST - ALTERNATE	2,419	TON
SUPERPAVE 1.5" WEARING COURSE - PAVED AREA ONLY	128	TON
SUPERPAVE 4" BASE COURSE - PAVED AREA ONLY	355	TON
SUPERPAVE 4" 8" BASE COURSE - PAVED AREA ONLY	241	TON
12" DIAMETER CROSS PIPE	120	LF
18" DIAMETER CROSS PIPE	25	LF
30" DIAMETER CROSS PIPE	0	LF
CULVERT OUTLET/ROCK APRON SLUMP	61	EA
CULVERT OUTLET/ROCK APRON SLUMP ROCK GEOTECHNICAL	28	EA
ROADSIDE CHANNEL	1,687	LF
ROADSIDE CHANNEL ROCK R35	0	TON
EROSION & SEDIMENT CONTROL ITEMS		
36" SUPER SILT FENCE	3,978	LF
FILTER SOCK (12")	1,214	LF
FILTER SOCK (18")	1,022	LF
FILTER SOCK (24")	617	LF
FILTER SOCK (36")	555	LF
CHANNEL MATTING (PAD 878)	708	SY
CHANNEL MATTING (PAD 878)	1,158	SY
CHANNEL MATTING (PAD 878)	317	SY
CHANNEL MATTING (PAD 878)	867	SY
ROCK FILTER DAM	5	EA
LEVEL SPREADER	2	EA
ADDITIONAL ITEMS		
TRAPPY CONTROL	1	LF
CONSTRUCTION ENTRANCE	1	LF
CONSTRUCTION FENCE	0	LF
MONITORING	1	LF
TRENCH SAFETY PLAN & PROTECTION	1	LF
SEEDING/MULCHING ITEMS		
SEEDING, LIME & FERTILIZER	78,893	SY
VEGETATION ONLY 2% SLOPE AND MATTING	32,017	SY
UNDERDRAIN ITEMS		
PERFORATED PLASTIC PIPE	1,430	LF
STANDARD CATCH BASIN	2	EA
CASTERED 6" (6" DRAIN) ALTERNATE USE ASHIRT #4 STONE	100	TONS
2 GALON BASH BRISER	2	EA
SOLID SCHEDULE 40 PLASTIC PIPE	139	LF
STEEL GATE	2	EA
4" STEEL GATE VALVE	2	EA
12" RUBBER ANTI-SLEEP COILMAN	4	EA
CLEARING AND GRUBBING ITEMS		
CLEARING AND GRUBBING	317	AC
TIMBER REMOVAL	118	AC

FOR REVIEW ASSOCIATES BY: RETEVE ASSOCIATES, INC. (Professional Seal)

MANAGER: PARKER G. REMBO, P.E.
 DESIGN BY: CHD BY: PCD
 DRAW BY: PCD
 SURV. CHECKED BY: J.M. WILSON

CLIENT: SWN PRODUCTION CO., LLC
 PO BOX 1300
 JANE LEW, WV 26378
 (833) 756-1610

SCALE: 1" = 500'

COVER SHEET & GENERAL NOTES FOR EDWARD DREMAK WELL PAD

DATE: 11/16/2016
 SHEET NO. 1 OF 31
 DWG. NO. 087569045

RICHLAND TAX DISTRICT

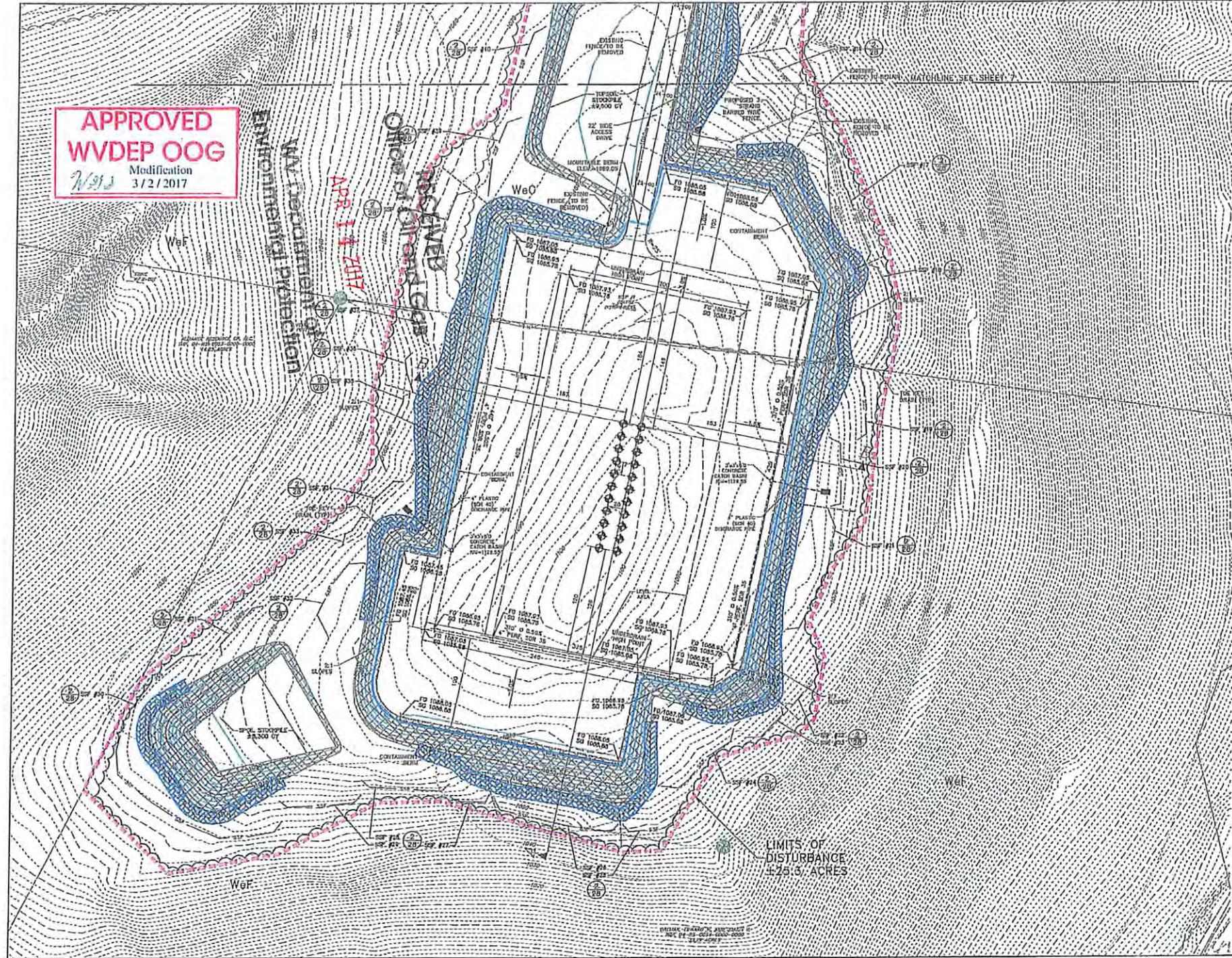
API 047-069-00226

APPROVED WVDEP OOG
 Modification
WES 3/2/2017

WV DEPARTMENT OF
 ENVIRONMENTAL PROTECTION

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LEGEND

EXISTING POWER LINE	---
EXISTING SANITARY LINE	---
PROPOSED 12" TO 36" DUCT	---
EXISTING FENCE	---
PROPOSED FENCE	---
EXISTING DRIVE	---
PROPOSED DRIVE	---
EXISTING CONDUIT	---
PROPOSED CONDUIT	---
EXISTING ROAD	---
PROPOSED ROAD	---
EXISTING UTILITY	---
PROPOSED UTILITY	---
EXISTING EROSION CONTROL	---
PROPOSED EROSION CONTROL	---
EXISTING DRAINAGE	---
PROPOSED DRAINAGE	---
EXISTING FENCE	---
PROPOSED FENCE	---
EXISTING DRIVE	---
PROPOSED DRIVE	---
EXISTING CONDUIT	---
PROPOSED CONDUIT	---
EXISTING ROAD	---
PROPOSED ROAD	---
EXISTING UTILITY	---
PROPOSED UTILITY	---
EXISTING EROSION CONTROL	---
PROPOSED EROSION CONTROL	---
EXISTING DRAINAGE	---
PROPOSED DRAINAGE	---

FOR REVIEW ASSOCIATES, INC.

DATE	11/16/2016
SHEET NO.	0 OF 31
DIST. NO.	087559045

CLIENT

SHIN PRODUCTION CO., LLC
 PO BOX 1300
 JANE LEW, WV 26376
 (302) 736-1610

SCALE: 1" = 50'

RETAIN
 RETAIN ASSOCIATES, INC.
 One Raleigh Farm, 6000 Columbus Pike, Suite 200
 Phone: (410) 444-1722 • Fax: (410) 444-1723
 Email: retain@retaininc.com
 Website: www.retaininc.com

EROSION & SEDIMENT CONTROL PLAN
 FOR
**EDWARD DREMAK
 WELL PAD**

RICHMOND TAX DISTRICT
 OHIO COUNTY, WV

DATE	11/16/2016
SHEET NO.	0 OF 31
DIST. NO.	087559045

- NOTES:**
- CONTRACTOR SHALL FIELD LOCATE ALL PROPERTY LINES AND SHALL NOT CROSS EXCEPT WHERE SHOWN.
 - REFER TO SHEET 28 AND 29 FOR EROSION CONTROL PLAN.
 - CONTRACTOR SHALL PROTECT ALL TIES TO REMAIN.
 - ROCK FILL LIFT SHALL BE 300 LBS OR MORE THAN 30" TOOK TO LARGER THAN 4" MAY BE IN THE SOIL FILL.
 - ALL WORK SHALL STAY OUT OF SET AND BOUND OF ALL EROSION UNLESS PREVIOUSLY AUTHORIZED.

NOT FOR CONSTRUCTION/NOT FOR BIDDING

API 047-069-00226

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 WV Department of
 Environmental Protection
 APR 14 2017

EROSION & SEDIMENT CONTROL PLAN FOR EDWARD DREMAK WELL PAD RICHLAND TAX DISTRICT, OHIO COUNTY, WEST VIRGINIA

GENERAL NOTES

1. The contractor shall be responsible for the design and construction of the erosion and sediment control measures.
2. The contractor shall be responsible for the maintenance and repair of the erosion and sediment control measures.
3. The contractor shall be responsible for the removal of the erosion and sediment control measures when they are no longer needed.
4. The contractor shall be responsible for the replacement of any erosion and sediment control measures that are damaged or destroyed.
5. The contractor shall be responsible for the installation of any erosion and sediment control measures that are required by the plan.
6. The contractor shall be responsible for the installation of any erosion and sediment control measures that are required by the plan.
7. The contractor shall be responsible for the installation of any erosion and sediment control measures that are required by the plan.
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19. The contractor shall be responsible for the installation of any erosion and sediment control measures that are required by the plan.
20. The contractor shall be responsible for the installation of any erosion and sediment control measures that are required by the plan.



STARTING PAD LEGEND

- 1. 10' BUFFER ZONE
- 2. 20' BUFFER ZONE
- 3. 30' BUFFER ZONE
- 4. 40' BUFFER ZONE
- 5. 50' BUFFER ZONE
- 6. 60' BUFFER ZONE
- 7. 70' BUFFER ZONE
- 8. 80' BUFFER ZONE
- 9. 90' BUFFER ZONE
- 10. 100' BUFFER ZONE

LIMITS OF DISTURBANCE

- 1. 10' BUFFER ZONE
- 2. 20' BUFFER ZONE
- 3. 30' BUFFER ZONE
- 4. 40' BUFFER ZONE
- 5. 50' BUFFER ZONE
- 6. 60' BUFFER ZONE
- 7. 70' BUFFER ZONE
- 8. 80' BUFFER ZONE
- 9. 90' BUFFER ZONE
- 10. 100' BUFFER ZONE

OPERATOR

SWN

WEST VIRGINIA

Handwritten: 880 3.14.17

SOILS CLASSIFICATION

SOIL TYPE	PERCENTAGE	AREA (SQ FT)	AREA (AC)
CLAY	100%	1000000	22.96

LIST OF DRAWINGS

- 1. EROSION & SEDIMENT CONTROL PLAN
- 2. LOCATION MAP
- 3. BUFFER ZONE LEGEND
- 4. LIMITS OF DISTURBANCE

NO.	DESCRIPTION	DATE	BY	CHKD BY
1	EROSION & SEDIMENT CONTROL PLAN	3/14/17	880	
2	LOCATION MAP	3/14/17	880	
3	BUFFER ZONE LEGEND	3/14/17	880	
4	LIMITS OF DISTURBANCE	3/14/17	880	

WEST VIRGINIA

EDWARD DREMAK WELL PAD

RICHLAND TAX DISTRICT

APR 14 2017