



west virginia department of environmental protection

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

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

October 24, 2013

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-8510055, issued to NOBLE ENERGY, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

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

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: PEN2CHS
Farm Name: KIESSLING, TERRY & HELEN
API Well Number: 47-8510055
Permit Type: Horizontal 6A Well
Date Issued: 10/24/2013

Promoting a healthy environment.

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACOE). Through this permit, you are hereby being advised to consult with USACOE 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 fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

Noble Energy Addendum

OCT 16 2013

Pennsboro site proposed well procedures

- Intermediate casing has been revised to extend below the Alexander and ETS
- Southern laterals will be fractured while surrounding Consol offset wells are being pressure monitored
- Northern laterals will be fractured while surrounding Consol offset wells are being pressure monitored
- Operators of all offset wells will be contacted for monitoring as per tables below:

WV Department of
Environmental Protection

Southern lateral offsets:

API	TD	Lease	Current Operator	TVD_SS
4708508880	5057	Walnut Investment Co 2	Key Oil Co.	3997
4708507336	5128	Mary Jo Stephens	Consol Gas Company	4059
4708507979	5130	J Ralph Hammond	Consol Gas Company	4060
4708508068	5158	Howard D Owings	Consol Gas Company	4069
4708507343	5352	WV Pulp&Papr	Consol Gas Company	4240
4708507977	5453	John A Smith 9	Pardee Exploration Co	4391
4708507534	5400	Harlan Hogue	Consol Gas Company	4470
4708503611	5985	James A Hogue	Consol Gas Company	4877
4708506894	5992	Richard L Goff	Seneca-Upshur Petroleum, LLC	5012
4708507211	5911	James H Kiger	Seneca-Upshur Petroleum, LLC	5086
4708509672	6300	Russell Fox Sr	Antero Resources Appalachian Corp.	5238
4708510042	6600	SCHMIDLE UNIT	Antero Resources Appalachian Corp.	5480
4708510043	6600	SCHMIDLE UNIT	Antero Resources Appalachian Corp.	5480

Northern lateral offsets:

API	TD	Lease	Current Operator	TVD_SS
4707331065	4200	WV FARMING COMM	Hanlon Oil & Gas Co.	3560
4707302089	5015	Laura Whaley 1	Consol Gas Company	4015
4708507972	5054	Robert P Jackson 3	Consol Gas Company	4026
4708507993	5005	HERSCHEL H PIFER 2	Consol Gas Company	4036
4708507992	5032	Herschel H Pifer 1	Consol Gas Company	4041
4707301356	4880	Mary Elizabeth Jones 1	Pardee Exploration Co.	4042
4707302092	5095	Coastal Lumber 1	Consol Gas Company	4076
4707302088	5124	Mary Elizabeth Jones 3	Pardee Exploration Co	4093
4708507995	5006	Richard/Kenda Jones 1	Consol Gas Company	4176
4708507976	5300	John A Smith 8	Pardee Exploration Co	4246
4707302081	5026	Mary E Jones 2	Paulico Resources, Inc.	4248
4707302080	5234	Edna V Smith 1	Glass Development Company	4259

4708507985	5176	Edna V Smith 6	Pardee Exploration Co	4301
4708507974	5399	John A Smith 2	Pardee Exploration Co	4378
4708507975	5296	John A Smith 3	Pardee Exploration Co	4421
4708505456	5500	Edna Smith 4	Triad Hunter LLC	4505

- Noble will contact these operators prior to fracturing and guarantee that we can monitor all of the Consol operated offset wells unless the WVDEP deems it unnecessary based on the results from the PENS-1 neighboring pad pressure monitoring results.

Description of Pressure Monitoring

Pressure transducers, on both the tubing and annulus, shall monitor the flowing tubing pressures unless it is deemed necessary to shut in the well for safety reasons. For the deepest wells in the Rhinestreet and Marcellus we will recommend shutting in the wells for pressure monitoring.

- We anticipate setting low and high pressure triggers in our automated pressure monitoring system. Anything more than 100 psi above expected pressures or at 0 psi would trigger an event.
- Our fracturing treatments will be designed to reach close to 90 bpm, use a slick water formulation. Typically our sand volumes will be between 300,000 and 500,000 pounds of sand per stage.
- The plan is to fracture all of the laterals prior to flowback procedures. However, in the event of a trigger, we will cease pumping that frac stage and continue with the following stage until that lateral is fully stimulated. If we see high pressure in any monitor well, we will immediately cease fracing operations and flow back the well to alleviate pressure seen in the offset well.

Noble will audit the surrounding wells to be pressure monitored and install temporary 3000 psi wellheads as necessary.

Contingency:

- 1) Offset wells watering out – We are recommending that an affected offset operator wait for Noble to complete operations on that particular lateral including flowback to alleviate potential pressure surges before any offset operator intervenes.

RECEIVED
Office of Oil and Gas

OCT 16 2013

WV Department of
Environmental Protection

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

539

1) Well Operator: Noble Energy, Inc. 494501907 085 Clay 1 Pennsboro
Operator ID County District Quadrangle

2) Operator's Well Number: PEN2CHS Well Pad Name: PEN2

3 Elevation, current ground: 1074.85 Elevation, proposed post-construction: 1075.4

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

5) Existing Pad? Yes or No: No

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
Target-Marcellus, Depth- 6262-~~6324~~ LKC; Thickness- 62"; Pressure- 4174 # psi

7) Proposed Total Vertical Depth: 6423'

8) Formation at Total Vertical Depth: Onondaga (99' into the Onondaga)

9) Proposed Total Measured Depth: 15029'

10) Approximate Fresh Water Strata Depths: 454'

11) Method to Determine Fresh Water Depth: Closest well & Seneca Technology data base

12) Approximate Saltwater Depths: 1244'

RECEIVED
Office of Oil and Gas

13) Approximate Coal Seam Depths: no coal

14) Approximate Depth to Possible Void (coal mine, karst, other): none

OCT 11 2013

15) Does proposed well location contain coal seams directly overlying or adjacent to an active mine? If so, indicate name and depth of mine: no

WV Department of
Environmental Protection

16) Describe proposed well work: Drill the vertical depth to aprox. 99' but not more than 100' into the Onondaga, plug back with a solid cement plug to the base of the Marcellus (KOP) at an estimated total vertical depth of approximately 6324feet. Drill Horizontal leg - stimulate and produce the Marcellus Formation. Should we encounter a unanticipated void we will install a minimum of 20' of casing below the void but not more than 50' set a basket and grout to surface.

17) Describe fracturing/stimulating methods in detail:
The stimulation will be multiple stages divided over the lateral length of the well. Stage spacing is dependent upon engineering design. Slickwater fracturing technique will be utilized on each stage using sand, water, and chemicals.

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 8.43

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

WW - 6B
(3/13)

20)

CASING AND TUBING PROGRAM

10/21/13
LKC

<u>TYPE</u>	<u>Size</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft.</u>	<u>FOOTAGE: For Drilling</u>	<u>INTERVALS: Left in Well</u>	<u>CEMENT: Fill -up (Cu. Ft.)</u>
Conductor	20"	N	LS	94	40'	40'	CTS
Fresh Water	13 3/8"	N	J-55	54.5	650'	650'	CTS
Coal							
Intermediate	9 5/8"	N	J-55	36.0	5410'	5410'	CTS
Production	5 1/2"	N	P-110	20.0	15029'	15029'	200' above 9.625 shoe
Tubing							
Liners							

<u>TYPE</u>	<u>Size</u>	<u>Wellbore Diameter</u>	<u>Wall Thickness</u>	<u>Burst Pressure</u>	<u>Cement Type</u>	<u>Cement Yield</u>
Conductor	20"	24"	.438	2730	Type 1	1.2
Fresh Water	13 3/8"	17 1/2"	.380	2730	Type 1	1.18
Coal						
Intermediate	9 5/8"	12 3/8"	.352	3520	Class A	1.19
Production	5 1/2"	8.75"	.361	12,640	Class A	1.27
Tubing					RECEIVED Office of Oil and Gas	
Liners					OCT 11 2013	

PACKERS

WV Department of
Environmental Protection

Kind:				
Sizes:				
Depths Set:				



PENS-2 WELLBORE DIAGRAM

Marcellus Shale Horizontal

Ritchie County, WV

Ground Elevation 1076'

		PENS-2C Pilot SHL (Lat/Long)	(308280.93N, 1572150.36E) (NAD27)
Ground Elevation	1076'	PENS-2C Pilot LP (Lat/Long)	(307793.3N, 1571819.23E) (NAD27)
Azm	139.06°	PENS-2C Pilot BHL (Lat/Long)	(301525.28N, 1577076.77E) (NAD27)

HOLE	CASING	GEOLOGY	TVD Top	TVD Bottom	MUD	CEMENT	CENTRALIZERS	CONDITIONING	COMMENTS
26"	20" 52#				AIR	Grouted to surface	N/A	Ensure the hole is clean at TD.	Stabilize surface fill/soil. Conductor casing = 0.25" wall thickness
		Conductor		40					
17.5"	13-3/8" 54.5# J-55 BTC				AIR	15.6 ppg Type 1 + 2% CaCl, 0.25# Lost Circ 40% Excess Yield = 1.18	Bow Spring every 3 joints to surface	Fill with KCl water once drilled to TD. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement.	Protect freshwater. Surface casing = 0.380" thick. Burst=2730 psi
		Surface Casing		579					
12.25"	9-5/8" 36# HCK-55 BTC				SOBM 8.0 - 8.5 ppg	50 bbls 10 ppg spacer, 12.0 ppg lead slurry, (800') of 15.6 ppg Class A tail slurry cemented to surface.	Bow Spring centralizers on every joint to KOP, one every third joint from KOP to 100' from surface	Once at TD, circulate at least 2x bottoms up. Once casing is at setting depth, circulate a minimum of one hole volume prior to pumping cement	Casing to be ran below the Alexander. Intermediate casing = 0.352" wall thickness Burst=3520 psi, Collapse 2980 psi
		Maxton	1929	1973					
		Big Lime	2005	2082					
		Big Injun	2082	2130					
		Weir	2449	2465					
		Fifth	2921	2927					
		Gordon	2950	2952					
		Warren	3532	3566					
		Speechley	3850	4404					
		Riley	4601	4615					
		Benson	4955	4961					
		Alexander	5204	5210					
	Intermediate Casing	5410							
8.75/8.5"	5-1/2" 20# HCP-110 TXP BTC	Rhinestreet	5740	5908	SOBM 12.5- 13.0 ppg	120 bbls spacer with density and rheology heirarchy, lead slurry to 2000' to recover SOBM, 14.8 ppg Class A tail slurry to inside intermediate casing	Rigid Bow Spring every third joint from KOP to TOC	Once at TD, circulate at max allowable pump rate for at least 6x bottoms up. Once on bottom with casing, circulate a minimum of one hole volume prior to pumping cement.	Production casing = 0.361" wall thickness Burst=12640 psi Note:Actual centralizer schedules may be changed due to hole conditions
		Marcellus	6262	6324			Rigid Bow Spring every joint to KOP		
		TD	15029						

WV Department of
 Office of Oil and Gas
 RECEIVED
 OCT 11 2013

8.75/8.5" Hole - Cemented Long String 5-1/2" 20# HCP-110 TXP BTC

85-10055

85 10055

21) Describe centralizer placement for each casing string. Conductor - No centralizers used. Fresh Water & Coal -
Bow spring centralizers on first 2 joints then every third joint to 100 feet from surface. Intermediate - Bow spring
centralizers every third joint to 100' from surface.
Production - Rigid bow spring every third joint from KOP to TOC, rigid bow spring every joint to KOP.

22) Describe all cement additives associated with each cement type. Conductor - 1.15% CaCl₂.
Fresh Water - 1.15% CaCl₂. Coal - 1.15% CaCl₂, 0.6% Gas migration control additive, 0.5% fluid loss additive,
0.4% Salt tolerant dispersant, and 0.3% defoamer. Intermediate - 10.0% BWOW NaCl, 0.2% BWOB Anti-foam, 0.3% BWOW Dispersant,
0.4% BWOB Cement retarder. Production: 2.6% Cement extender, 0.7% Fluid Loss additive, 0.5% high temperature retarder,
0.2% friction reducer.

23) Proposed borehole conditioning procedures. Conductor - The hole is drilled w/ air and casing is run in air. Apart from insuring
the hole is clean via air circulation at TD, there are no other conditioning procedures. Fresh Water -The hole is drilled w/air and casing
is run in air. Once casing is on bottom, the hole is filled w/ KCl water and a minimum of one hole volume is circulated prior to pumping
cement. Coal - The hole is drilled w/air and casing is run in air. Once casing is at setting depth, the hole is filled w/ KCl water and a minimum of one hole volume
is circulated prior to pumping cement. Intermediate - Once surface casing is set and cemented Intermediate hole is drilled either on air or SOBMs and filled w/ KCl water once
filled w/ KCl water once drilled to TD. The well is conditioned with KCl circulation prior to running casing. Once casing is at setting depth, the well is circulated
a minimum of one hole volume prior to pumping cement. Production - The hole is drilled with synthetic oil base mud and once at TD
the hole is circulated at a drilling pump rate for at least three hours. Once the torque and drag trends indicate the hole is clean the drilling BHA
is pulled and casing is run. Once on bottom w/ casing the hole is circulated a minimum of one hole volume prior to pumping cement.

Note: Attach additional sheets as needed.

Received

JUL 23 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

Good

85 10055

AWS Cement Additives- Noble Energy

	Product Name	Product Use	Chemical Name	CAS Number
Surface & Intermediate	Calcium Chloride Flake	Cement Accelerator	Calcium Chloride Potassium Chloride Water Sodium Chloride	10043-52-4 7447-40-7 7732-18-5 7647-14-5
	C-41L	De-foamer	Methyl Alcohol Tributyl Phosphate	67-56-1 126-73-8
	Pol-E-Flake	LCM	Polyester	Non-Hazardous

Spacer	Bentonite Gel	Viscosifier	Crystalline Silica, Quartz	14808-60-7
	Baro-Seal	LCM	Mixture	Non-Hazardous
	Pol-E-Flake	LCM	Polyester	Non-Hazardous

Received

2019

	<u>Product Name</u>	<u>Product Use</u>	<u>Chemical Name</u>	<u>CAS Number</u>
Intermediate	D046	Antifoam	Fuller's earth (attapulгите)	8031-18-3
			Polypropylene glycol	25322-69-4
	D130	Polyester Flake	polyethylene terephthalate	25038-59-9
	D013	Retarder	Sodium lignosulfonate	8061-51-6
			Calcium lignosulfonate	8061-52-7
	D202	Solid Dispersant	sulphonated synthetic polymer	proprietary
			formaldehyde (impurity)	50-00-0
	<u>SPACER</u>			
	D020	bentonite extender	bentonite	1302-78-9
	D130	polyester flake - lcm	polyethylene terephthalate	25038-59-9

Office of Environmental Protection WV Dept. of Environmental Protection	D020	Bentonide Extender	Bentonite	1302-78-9
	D065	Dispersant	Sodium Polynaphthalene sulfonate	9008-63-3
			Sodium Sulfate	7757-82-6
	D046	Antifoam	Fuller's earth (attapulгите)	8031-18-3
			Polypropylene glycol	25322-69-4
	D013	Retarder	Sodium lignosulfonate	8061-51-6
			Calcium lignosulfonate	8061-52-7
	D167	Fluid Loss	Aliphatic amide polymer	proprietary
	<u>SPACER</u>			
	D182	MUSPUSH* II Spacer	sulfonated organic polymer	proprietary
			glucoside polymer	proprietary
	D031	barite	barium sulfate	7727-43-7
	B220	surfactant	fatty acid amine	proprietary
ethoxylated alcohol			proprietary	
glycerol			56-81-5	
		2,2'-Iminodiethanol	111-42-2	

85 10055

HOLE	CASING	GEOLOGY	TVD Top	TVD Bottom	MUD	CEMENT	DIRECTIONAL	COMMENTS
20"	20" 81.3# LS				AIR	Grouted to surface	N/A	Stabilize surface fill/soil
		Conductor		40				
17.5"	13-3/8" 54.5# J-55 BTC				AIR	15.6 ppg cemented to surface		Protect freshwater
		Surface Casing		650				
12.25"	9-5/8" 36# HCK-55 BTC				SOBM 8.0 - 8.5 ppg Maintain lower MW to prevent seepage to depleted formations	50 bbls 9.0 ppg spacer, 12.0 ppg lead slurry, 62 bbl (800') of 15.6 ppg tail slurry cemented to surface (displace with water). Max pump rate of 5 bpm due to potential for losses in depleted formations (Benson expected to be worst case)	Vertical BHA: 1.5° bend, low speed motor, 1/4" UG near bit and string stabilizers. 7 blade PDC bit. 650 GPM, tight TFA. Optimize WOB, Minimize RPM (<120 rpm at bit) Nudge/Tangent BHA: Same as above, but increase bend angle (3 wells to ~12° INC, 4 wells to 40° INC, 2 wells stay vertical)	Offset data shows potential for Red Rock instability (driver for oil based mud system) Abrasive sands will wear out bits (Big Injun expected to be worst case). Back off parameters before transition into sands. Depleted formations from 2500 - 5300' TVD. Required to set intermediate casing below the Alexander
		Maxton Sand	1929	1973				
		Big Lime	2005	2082				
		Big Injun	2082	2130				
		Weir Sand	2449	2465				
		5th Sand	2921	2927				
		Gordon	2950	2952				
		Warren Sand	3532	3566				
		Speechley	3850	4404				
		Riley	4601	4615				
		Benson	4955	4961				
		Alexander	5204	5210				
		Intermediate Casing	+/-5410 TVD					
8.75/8.5"	5-1/2" 20# HCP-110 TXP BTC Toe sleeve for completions	Rhinestreet	5740	5908	SOBM 12.5- 13.0 ppg	120 bbls spacer with density and rheology heirarchy, lead slurry to 2000' to recover SOBM, 14.8 ppg tail slurry	Curve BHA: 2.38° bend, high speed motor, slick Lateral BHA: Powerdrive Vortex RSS (Tight TFA, 100 topdrive rpm, tracking PU/SO/TQ	F.I.T will be performed 0.5 ppg more than highest anticipated MW. Geosteering +/-10' above Onondaga, Onondaga 6369-6372' TVD
		Burkett	6240	6254				
		Tully Limestone	6254	6256				
		Hamilton	6256	6262				
		Marcellus	6262	6324				
		Cherry Valley	6292	6294				
		Lateral TD Range	12,500-15,810 MD					

8.75/8.5" Hole - Cemented Long String 5-1/2" 20# HCP-110 TXP BTC - Lateral Length- 1933'. TVD - 6314' MD- 9247'

Received

Date: 03/23/15

05 10055

Form WW-9

Operator's Well No. PEN2CHS

Noble Energy, Inc.

Proposed Revegetation Treatment: Acres Disturbed 11.2 Prevegetation pH 6.0

Lime 2 to 3 Tons/acre or to correct to pH _____

Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)

Mulch Hay or Straw at 2 Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	Ladino Clover	5

Attach:
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: Pushed and mulch all out area - maintain all O&G infrastructure

Received

JUL 23 2013

Title: Oil and Gas Inspector

Date: 7-16-13

Field Reviewed? () Yes () No

Office of Oil and Gas
WV Dept. of Environmental Protection

Site Water/Cuttings Disposal

85 10055

Cuttings

Haul off Company:

Eap Industries, Inc. DOT # 0876278
1575 Smith Twp State Rd. Atlasburg PA 15004
1-888-294-5227

Disposal Locations:

Apex Environmental, LLC Permit # 06-08438
11 County Road 78
Amsterdam, OH 43903
740-543-4389

Westmoreland Waste, LLC Permit # 100277
111 Conner Lane
Belle Vernon, PA 15012
724-929-7694

Sycamore Landfill (Allied Waste) R30-07900105-2010
4301 Sycamore Ridge Road
Hurricane, WV 25526
304-562-2611

Water

Haul off Company:

Dynamic Structures, Clear Creek DOT # 720485
3790 State Route 7
New Waterford, OH 44445
330-892-0164

Disposal Location:

Solidification
Waste Management, Arden Landfill Permit # 100172
200 Rangos Lane
Washington, PA 15301
724-225-1589

Received

Solidification/Incineration
Soil Remediation, Inc. Permit # 02-20753
6065 Arrel-Smith Road
Lowelville, OH 44436
330-536-6825

23 2005

Office of Oil and Gas
WV Dept. of Environmental Protection

app recd 7/23



Water Management Plan: Primary Water Sources



WMP- 01439

API/ID Number: 047-085-10055

Operator: Noble Energy, Inc

PEN2CHS

Important:

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

DEP is aware that some intake points will be used for mutiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interepreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov.

APPROVED OCT 09 2013

Source Summary

WMP-01439

API Number:

047-085-10055

Operator:

Noble Energy, Inc

PEN2CHS

Purchased Water

● Source **Ohio River @ Select Energy** Pleasants Owner: **Select Energy**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
7/16/2013	7/16/2014	11,000,000	500,000	39.346473	-81.338727

Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999998 Ohio River Station: Racine Dam

Max. Pump rate (gpm): **1,680** Min. Gauge Reading (cfs): **7,216.00** Min. Passby (cfs)

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: <http://www.erh.noaa.gov/ohrfc//flows.shtml>

● Source **West Virginia American Water - Weston Water Treatme** Lewis Owner: **West Virginia American Water**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
7/16/2013	7/16/2014	11,000,000	500,000	-	-

Regulated Stream? Stonewall Jackson Dam Ref. Gauge ID: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

Max. Pump rate (gpm): **0** Min. Gauge Reading (cfs): **170.57** Min. Passby (cfs)

DEP Comments:

● Source **Glenville Utility** Gilmer Owner: **Glenville Utility**

Start Date	End Date	Total Volume (gal)	Max. daily purchase (gal)	Intake Latitude:	Intake Longitude:
7/16/2013	7/16/2014	11,000,000	10,000	-	-

Regulated Stream? Burnsville Dam Ref. Gauge ID: 3155000 LITTLE KANAWHA RIVER AT PALESTINE, WV

Max. Pump rate (gpm): **0** Min. Gauge Reading (cfs): **303.75** Min. Passby (cfs)

DEP Comments:

Source Detail

WMP- 01439

API/ID Number: 047-085-10055

Operator: Noble Energy, Inc

PEN2CHS

Source ID: 26197 Source Name: Ohio River @ Select Energy
Select Energy

Source Latitude: 39.346473
Source Longitude: -81.338727

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 County: Pleasants

Anticipated withdrawal start date: 7/16/2013

Anticipated withdrawal end date: 7/16/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 11,000,000

Trout Stream?

Tier 3?

Max. Pump rate (gpm): 1,680

Regulated Stream? Ohio River Min. Flow

Max. Simultaneous Trucks:

Proximate PSD?

Max. Truck pump rate (gpm):

Gauged Stream?

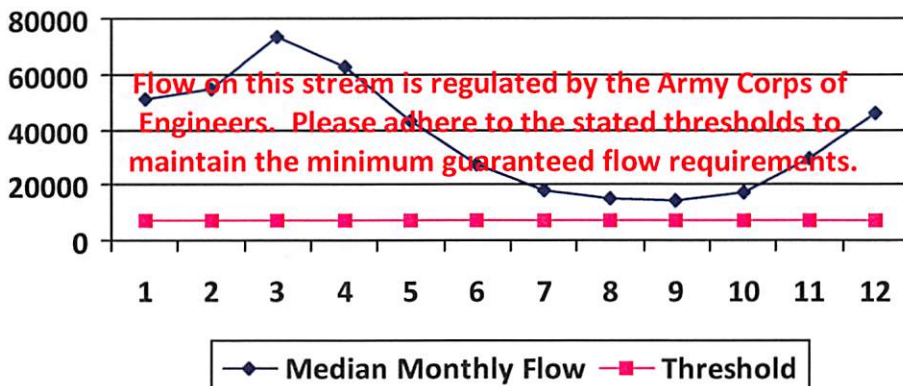
Reference Gaug: 9999998 Ohio River Station: Racine Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 7216

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	50,956.00	-	-
2	54,858.00	-	-
3	73,256.00	-	-
4	62,552.00	-	-
5	43,151.00	-	-
6	27,095.00	-	-
7	17,840.00	-	-
8	14,941.00	-	-
9	14,272.00	-	-
10	17,283.00	-	-
11	29,325.00	-	-
12	46,050.00	-	-

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): -

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 3.74

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -

Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01439

API/ID Number: 047-085-10055

Operator: Noble Energy, Inc

PEN2CHS

Source ID: 26198 Source Name: West Virginia American Water - Weston Water Treat
West Virginia American Water

Source Latitude: -
Source Longitude: -

HUC-8 Code: 5020002

Drainage Area (sq. mi.): 104.83 County: Lewis

Anticipated withdrawal start date: 7/16/2013

Anticipated withdrawal end date: 7/16/2014

Endangered Species? Mussel Stream?

Total Volume from Source (gal): 11,000,000

Trout Stream?

Tier 3?

Max. Pump rate (gpm): 0

Regulated Stream?

Stonewall Jackson Dam

Max. Simultaneous Trucks:

Proximate PSD?

Weston WTP

Max. Truck pump rate (gpm)

Gauged Stream?

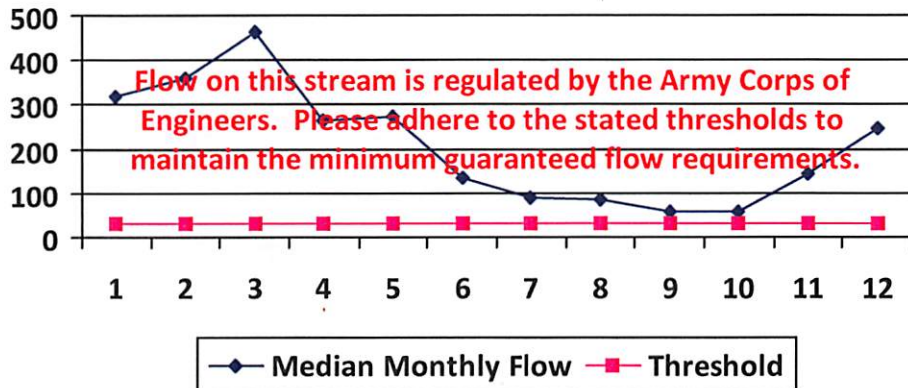
Reference Gaug: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

Drainage Area (sq. mi.): 759.00

Gauge Threshold (cfs): 234

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	321.23	-	-
2	361.67	-	-
3	465.85	-	-
4	266.43	-	-
5	273.47	-	-
6	137.03	-	-
7	88.78	-	-
8	84.77	-	-
9	58.98	-	-
10	57.83	-	-
11	145.12	-	-
12	247.76	-	-

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): -

Upstream Demand (cfs): 24.32

Downstream Demand (cfs): 0.00

Pump rate (cfs): 0.00

Headwater Safety (cfs): 8.08

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -

Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP- 01439 API/ID Number: 047-085-10055 Operator: Noble Energy, Inc
 PEN2CHS

Source ID: 26199 Source Name: Source Latitude: -
 Source Longitude: -

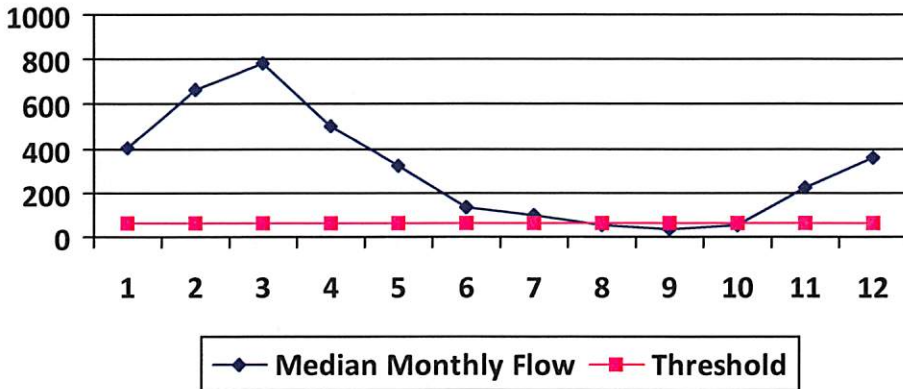
HUC-8 Code: Anticipated withdrawal start date:
 Drainage Area (sq. mi.): County: Anticipated withdrawal end date:

Endangered Species? Mussel Stream?
 Trout Stream? Tier 3?
 Regulated Stream? Total Volume from Source (gal):
 Proximate PSD? Max. Pump rate (gpm):
 Gauged Stream? Max. Simultaneous Trucks:
 Max. Truck pump rate (gpm):

Reference Gaug:
 Drainage Area (sq. mi.): Gauge Threshold (cfs):

Month	Median monthly flow (cfs)	Threshold (+ pump)	Estimated Available water (cfs)
1	407.80	77.33	331.59
2	669.98	77.33	593.76
3	785.33	77.33	709.12
4	505.51	77.33	429.29
5	324.07	77.33	247.85
6	132.12	77.33	55.90
7	99.89	77.33	23.68
8	56.28	77.33	-19.94
9	35.11	77.33	-41.11
10	52.89	77.33	-23.32
11	223.44	77.33	147.23
12	363.54	77.33	287.32

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs):
 Upstream Demand (cfs):
 Downstream Demand (cfs):
 Pump rate (cfs):
 Headwater Safety (cfs):
 Ungauged Stream Safety (cfs):
 Min. Gauge Reading (cfs):
 Passby at Location (cfs):

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.



Water Management Plan: Secondary Water Sources



WMP- 01439	API/ID Number	047-085-10055	Operator:	Noble Energy, Inc
PEN2CHS				

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Lake/Reservoir

Source ID:	26200	Source Name	Bonds Creek Site No. 1 (WV08503)		Source start date:	7/16/2013
					Source end date:	7/16/2014
Source Lat:	39.316142	Source Long:	-80.98423	County	Ritchie	
Max. Daily Purchase (gal)		Total Volume from Source (gal):	11,000,000			
DEP Comments:	Location also known as Tracy Lake or Bonds Creek Lake					

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

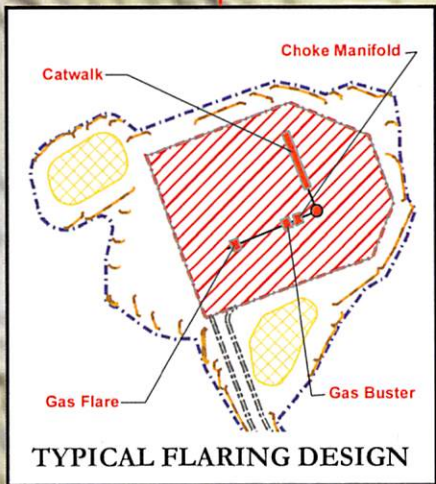
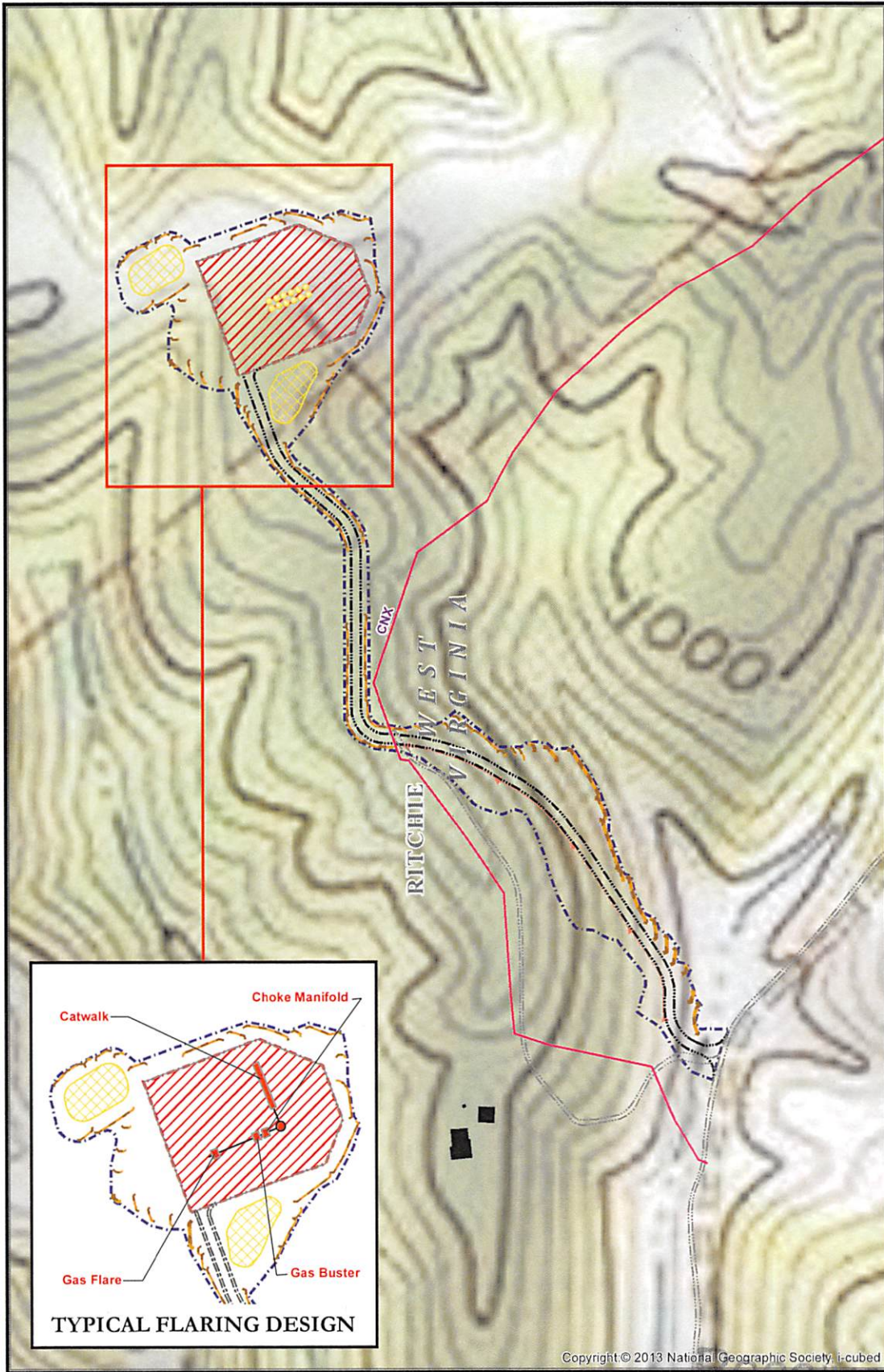
- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Multi-site impoundment

Source ID: 26201	Source Name	FLG Tank Pad	Source start date:	7/16/2013
			Source end date:	7/16/2014
Source Lat:	39.335467	Source Long:	-80.001958	County
				Ritchie
Max. Daily Purchase (gal)		Total Volume from Source (gal):		11,000,000
DEP Comments:				

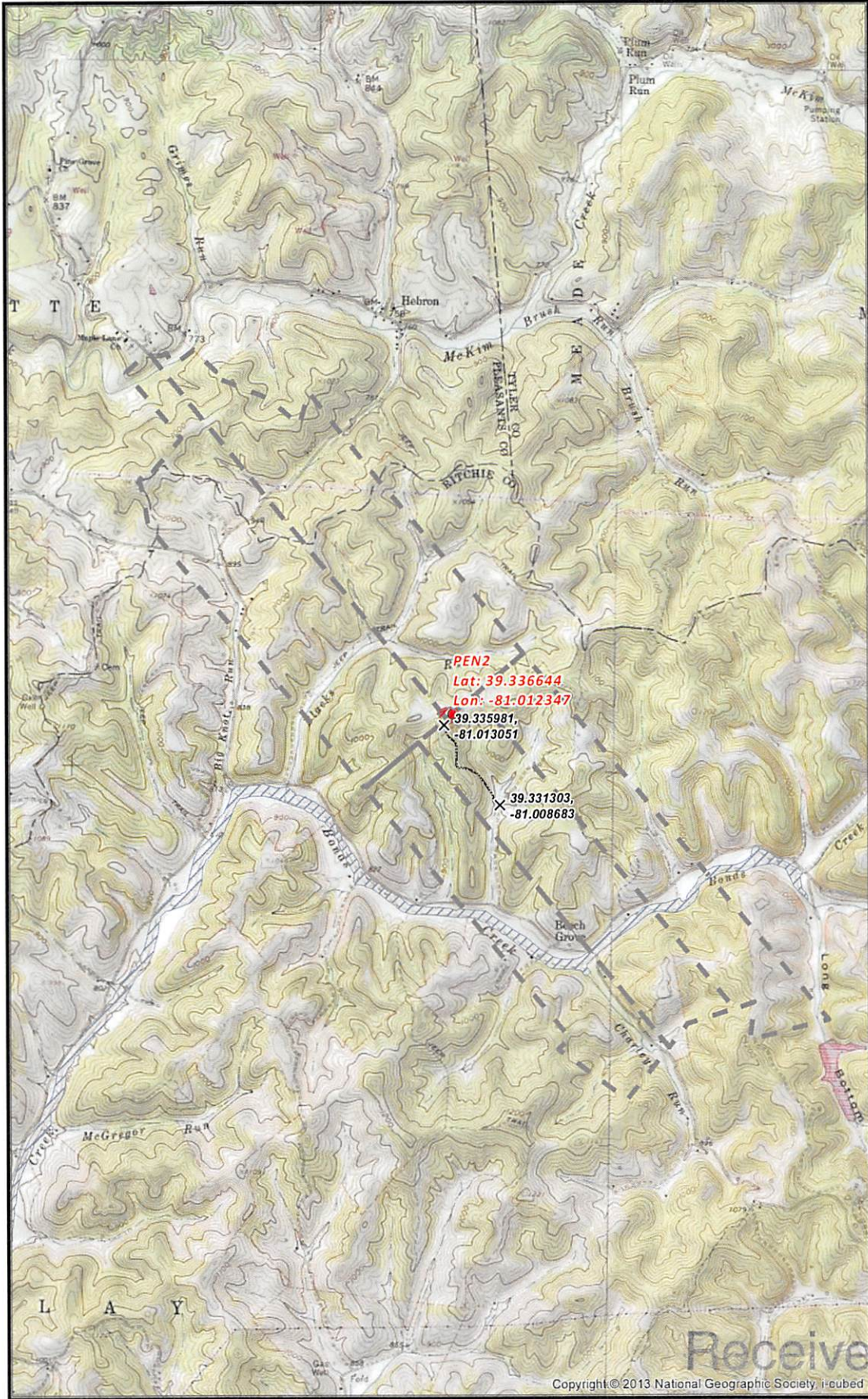
Recycled Frac Water

Source ID: 26202	Source Name	Various	Source start date:	7/16/2013
			Source end date:	7/16/2014
Source Lat:		Source Long:		County
Max. Daily Purchase (gal)		Total Volume from Source (gal):		11,000,000
DEP Comments: Sources include, but are not limited to, the PEN1 and PEN2 well pads.				



Copyright © 2013 National Geographic Society, i-cubed

<ul style="list-style-type: none"> ● Well Heads — Existing Gas Line — Proposed Road — EXISTING Building → Ditch Flow — Silt Fence Topsoil Stockpile Well Pad Boundary Limits of Disturbance 	<p>Prevailing Wind Direction: Ritchie County, WV - Northeast</p> <p>"The prevailing wind is from the Southwest (Heading Northeast.) Average windspeed is highest, 8 miles per hour, in March."</p> <p>** Information quoted from the "Soil Survey of Ritchie County, West Virginia" prepared by the Soil Conservation Service, the USDA, and West Virginia</p> <p>0 150 300 600 Feet</p> <p>Scale 1" = 300'</p>	<p>PEN2 SITE SAFETY PLAN</p> <p>- SITE DESIGN/ TYPICAL FLARING -</p> <p>Author: ChristopherGlover</p> <p>Date: 7/17/2013</p> <p>Projection: NAD_1927_StatePlane_West_Virginia_North_FIPS_4701 Units: Feet US</p>
--	--	---



PEN2 SITE SAFETY PLAN
- FLOODPLAIN ZONES -

0 1,250 2,500 5,000 Feet

Scale 1" = 2,500'

Projection: NAD_1927_StatePlane_West_Virginia_North_FIPS_4701
Units: Foot US

noble energy

Date: 7/16/2013
Author: Christopher Glover

Disclaimer: All data is licensed for use by Noble Energy Inc. use only.

Office of Oil and Gas

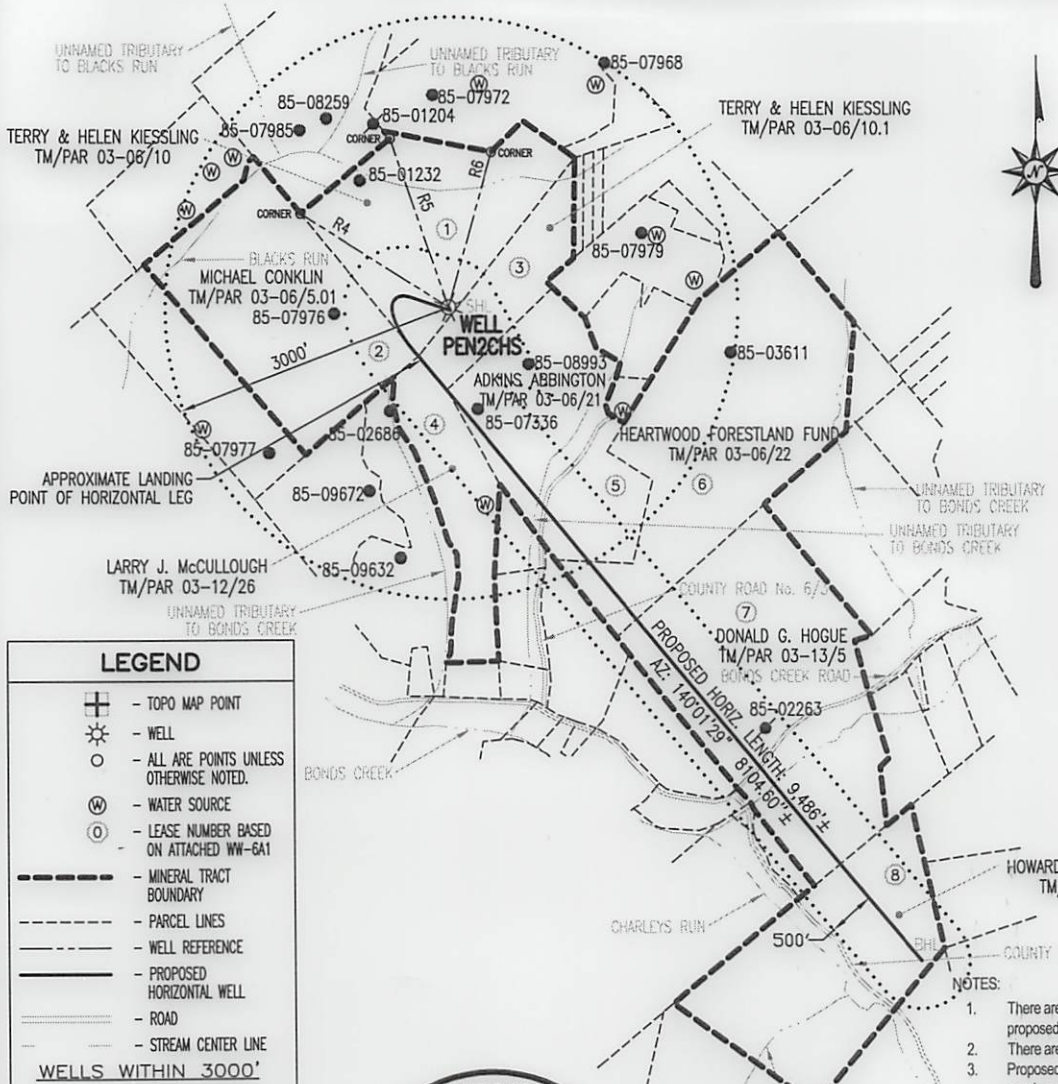
Well is located on topo map 13,979' feet south of Latitude: 39° 22' 30"

SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83
 N:4354130.80
 E:498919.06
 NAD27, WV NORTH
 N:308280.93
 E:1572150.36
 LAT/LON DATUM=NAD83
 LAT:39.336602
 LON:-81.012543

APPROX. LANDING POINT
UTM 17-NAD83
 N:4353963.36
 E:498836.40
 NAD27, WV NORTH
 N:307736.02
 E:1571869.92
 LAT/LON DATUM=NAD83
 LAT:39.335093
 LON:-81.013502

BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83
 N:4352097.77
 E:500454.25
 NAD27, WV NORTH
 N:301525.28
 E:1577076.77
 LAT/LON DATUM=NAD83
 LAT:39.318283
 LON:-80.994730

Well is located on topo map 3,556' feet west of Longitude: 81° 00' 00"

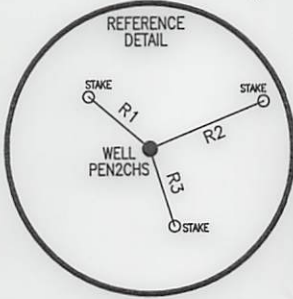


LEGEND

- ⊕ - TOPO MAP POINT
- ☼ - WELL
- - ALL ARE POINTS UNLESS OTHERWISE NOTED.
- ⊙ - WATER SOURCE
- ⓪ - LEASE NUMBER BASED ON ATTACHED WW-6A1
- - MINERAL TRACT BOUNDARY
- - PARCEL LINES
- - WELL REFERENCE
- - PROPOSED HORIZONTAL WELL
- - ROAD
- - STREAM CENTER LINE

WELLS WITHIN 3000'

- - EXISTING WELLS
- ⊙ - PLUGGED WELLS



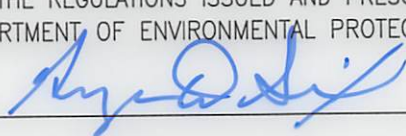
LINE	BEARING	DISTANCE
R1	N 50°00'26" W	166.55'
R2	N 68°00'46" E	257.02'
R3	S 17°20'04" E	167.67'
R4	N 58°21'14" W	1821.81'
R5	N 19°33'13" W	1831.35'
R6	N 15°41'17" E	1653.71'

- NOTES:**
- There are no water wells or developed springs within 250' of proposed well.
 - There are no existing buildings within 625' of proposed well.
 - Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
 - There are no native trout streams within 300' of proposed well.
 - Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
 - It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

Blue Mountain Inc.
 11023 MASON DIXON HIGHWAY
 BURTON, WV 26562
 PHONE: (304) 662-6486

FILE #: PEN2CHS
 DRAWING #: PEN2CHS
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: 

R.P.E.: _____ L.L.S.: P.S. No. 2000

GEORGE D. SIX
 LICENSED
 No. 2000
 STATE OF
 WEST VIRGINIA
 PROFESSIONAL SURVEYOR

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304



DATE: OCTOBER 15, 2013
 OPERATOR'S WELL #: PEN2CHS
 API WELL #: 47 85 10055H6A
 STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: NORTH FORK HUGHES RIVER ELEVATION: 1084'±
 COUNTY/DISTRICT: RITCHIE / CLAY QUADRANGLE: ELLENBORO, WV 7.5'
 SURFACE OWNER: TERRY & HELEN KIESSLING ACREAGE: 79.242±
 OIL & GAS ROYALTY OWNER: SEE ATTACHED WW-6A1 ACREAGE: 684.969±

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,314'± TMD: 15,029'±

WELL OPERATOR NOBLE ENERGY, INC. DESIGNATED AGENT STEVEN M. GREEN
 Address 333 TECHNOLOGY DRIVE, SUITE 116 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590
 City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

85 10055



Site Safety Plan
Noble Energy, Inc.
Pen2CHS Well Pad
Ritchie County, WV
July 2013: Version 1

For Submission to
West Virginia Department of Environmental Protection,
Office of Oil and Gas

Noble Energy, Inc
Appalachia Offices
333 Technology Drive, Suite 116
Canonsburg, PA 15317-9504

Received

23 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

A handwritten signature in black ink, appearing to read 'David...' followed by a flourish.
7-16-13

85 10055



Office of Oil & Gas
601 57th street, SE
Charleston, WV 25304-2345

July 17, 2013

Re: Drilling Under Roads

To Whom It May Concern:

Noble Energy, Inc. has the right to drill, stimulate and produce wells that are drilled under the County and State Roads as designated on the plats.

Should you have any questions or desire additional information, please do not hesitate to contact me at dswiger@nobleenergyinc.com or 724-820-3061.

Sincerely,

A handwritten signature in black ink, appearing to read 'Dee Swiger', written over the printed name.

Dee Swiger
Regulatory Analyst

DS/

Enclosures:

Received

JUL 23 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

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

85 10055

Date of Notice Certification: 07/17/2013

API No. 47- 085
Operator's Well No. PEN2CHS
Well Pad Name: PEN2

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>4354130.796</u>
County:	<u>Ritchie</u>		Northing:	<u>498919.064</u>
District:	<u>Clay</u>	Public Road Access:	<u>County Rd 6/3</u>	
Quadrangle:	<u>Pennsboro</u>	Generally used farm name:	<u>Kiessling</u>	
Watershed:	<u>North Fork of Hughs River / Bonds Creek</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: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input 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(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

Certification of Notice is hereby given:

85 10055

THEREFORE, I Dee Swiger, 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:	<u>Noble Energy, Inc.</u>	Address:	<u>333 Technology Drive, Suite 116</u>
By:	<u>Dee Swiger</u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Regulatory Analyst</u>	Facsimile:	<u>724-820-3098</u>
Telephone:	<u>724-820-3061</u>	Email:	<u>dswiger@nobleenergyinc.com</u>



Subscribed and sworn before me this 18th day of 2013 July.

Laura L. Adkins Notary Public

My Commission Expires November 23, 2015

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.

Received

JUL 23 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

85 10055

WW-6A
(5-12)

API NO. 47- 095 -
OPERATOR WELL NO. PEN2GHS
Well Pad Name: PEN2

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: 07/17/2013 **Date Permit Application Filed:** 07/17/2013

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.

Notice is hereby provided to:

SURFACE OWNER(s) ✓
 Name: Terry and Helen Kiessling
 Address: 8629 Red Maple Drive
Cincinnati, OH 35244-2714
 Name: _____
 Address: _____

COAL OWNER OR LESSEE
 Name: _____
 Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance) ✓
 Name: Frank Grass, et al
 Address: 5115 Lansing Drive
Charlotte, NC 28270
 Name: _____
 Address: _____

COAL OPERATOR
 Name: _____
 Address: _____

WATER PURVEYOR(s) ✓
 Name: Larry J. McCullough
 Address: Rt. 2 Box 87
Pennsboro, WV 26415

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

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

Received

07/23/2013

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: 07/17/2013 **Date Permit Application Filed:** 07/17/2013

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.

Notice is hereby provided to:

SURFACE OWNER(s)
 Name: Terry and Helen Kiessling
 Address: 8629 Red Maple Drive
Cincinnati, OH 35244-2714
 Name: _____
 Address: _____

COAL OWNER OR LESSEE
 Name: _____
 Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
 Name: Frank Grass, et al
 Address: 5115 Lansing Drive
Charlotte, NC 28270
 Name: _____
 Address: _____

COAL OPERATOR
 Name: _____
 Address: _____

WATER PURVEYOR(s)
 Name: Terry and Helen Kiessling
 Address: 8629 Red Maple Drive
Cincinnati, OH 35244-2714

Received
✓
JUL 23 2013

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

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

*Please attach additional forms if necessary

WW-6A
(5-12)

API NO. 47-055 - 10055
OPERATOR WELL NO. PEN2CHS
Well Pad Name: PEN2

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: 07/17/2013 **Date Permit Application Filed:** 07/17/2013

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.

Notice is hereby provided to:

SURFACE OWNER(s)
Name: Terry and Helen Kiessling
Address: 8629 Red Maple Drive
Cincinnati, OH 35244-2714
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: Frank Grass, et al
Address: 5115 Lansing Drive
Charlotte, NC 28270
Name: _____
Address: _____

COAL OPERATOR
Name: _____
Address: _____

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

WATER PURVEYOR(s)
Name: Edward C. and Cheryl J. Haas
Address: 117 Braxton Rd
Weirton, WV 26062

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____
Office of Oil and Gas
WV Dept. of Environmental Protection

Received

*Please attach additional forms if necessary

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: 07/17/2013 **Date Permit Application Filed:** 07/17/2013

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.

Notice is hereby provided to:

SURFACE OWNER(s)
Name: Terry and Helen Kiessling
Address: 8629 Red Maple Drive
Cincinnati, OH 35244-2714
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: Frank Grass, et al
Address: 5115 Lansing Drive
Charlotte, NC 28270
Name: _____
Address: _____

COAL OPERATOR
Name: _____
Address: _____

WATER PURVEYOR(s)
Name: Scott and Erica Hammond
Address: Rt. 2 Box 89-A
Pennsboro, WV 26415



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

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____
Office of Oil and Gas
WV Dept. of Environmental Protection

*Please attach additional forms if necessary

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 also 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.

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.

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.

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.

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 wellpad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such

WW-6A
(5-12)

85 10055
API NO. 47- 095 -
OPERATOR WELL NO. PEN2CHS
Well Pad Name: PEN2

factors, if necessary.

Written Comment:

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

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

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.**

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.

Received

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.

WW-6A
(5-12)

API NO. 47-095
OPERATOR WELL NO. PEN2CHS
Well Pad Name: PEN2

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.

Notice is hereby given by:
Well Operator: Noble Energy, Inc.
Telephone: 724-820-3061
Email: dswiger@nobleenergyinc.com

Address: 333 Technology Drive, Suite 116
Canonsburg, PA 15317
Facsimile: 724-820-3098

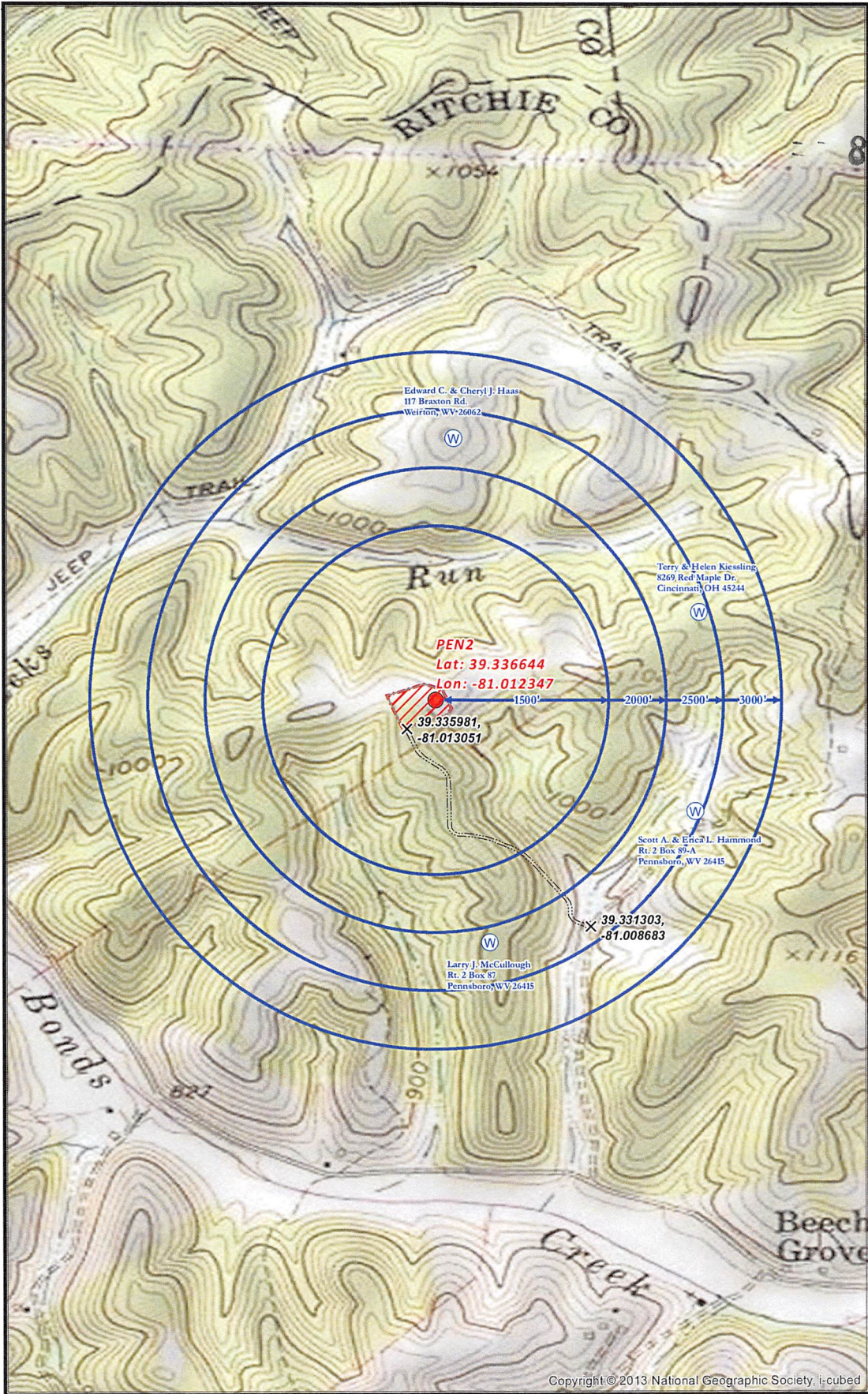
Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to 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.



Subscribed and sworn before me this 18th day of July, 2013.
Laura L. Adkins Notary Public
My Commission Expires November 23, 2015

Received
JUL 23 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

85 10055



Copyright © 2013 National Geographic Society, i-cubed

PENS2 SITE SAFETY PLAN
- WATER WELLS PROXIMITY -

Water Purveyor Buffer - - - - Proposed Road
X Road Intersection Well Pac Boundary

0 500 1,000 2,000
 Feet

Scale 1" = 1,000'

Projection: NAD_1927_StatePlane_Virginia_North_FIPS_4701
 Units: Foot US

Date: 7/16/2013

Author:
Christopher Glover

Disclaimer: All data is licensed for
 use by Noble Energy Inc. use only.

6
6

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

85 10055

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: 05/14/2013 **Date Permit Application Filed:** 07/17/2013

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: Terry and Helen Kiessling
Address: 8629 Red Maple Drive
Cincinnati, Ohio 35244-2714

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>4354130.796</u>
County: <u>Ritchie</u>		Northing: <u>498919.064</u>
District: <u>Clay</u>	Public Road Access: <u>County Rd 6/3</u>	
Quadrangle: <u>Pennsboro</u>	Generally used farm name: <u>Kiessling</u>	
Watershed: <u>Tributary to Bonds Creek</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: Noble Energy, Inc.
Address: 333 Technology Drive, Suite 116
Canonsburg, PA 15317
Telephone: 724-820-3061
Email: dswiger@nobleenergyinc.com
Facsimile: 724-820-3095

Authorized Representative: Dee Swiger
Address: 333 Technology Drive, Suite 116
Telephone: 724-820-3061
Email: dswiger@nobleenergyinc.com
Facsimile: 724-820-3095

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 of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

Received

Affidavit of Personal Service

85 10055

State Of Pennsylvania

County Of Washington

The undersigned, being first duly sworn, says that the undersigned served a true and complete copy of all sides of--

- (1) Notice on Form WW-2(A)___/ WW-3(A)___/ WW-4(A)___/ WW-5(A)___/ WW-6(A)X
- (2) Application on Form WW-2(B)___/ WW-3(B)___/ WW-4(B)___/ WW-5(B)___/ WW-6(B)___
- (3) Plat showing the well location on Form WW-6, and
- (4) Construction and Reclamation Plan on Form WW-9

--all with respect to operator's Well No. PEN2 AHS-MHS located in Clay District, Ritchie County, West Virginia, upon the person or organization named--

Terry and Helen Kiessling

--by delivering the same in Ritchie County, State of West Virginia on the 14 day of May, 2013 in the manner specified below.

[COMPLETE THE APPROPRIATE SECTION]

For an individual:

Handing it to him___/ her___/ or, because he___/ she___/ refused to take it when offered it, by leaving it in his___/ her___/ presence.

Handing it to a member of his or her family above the age of 16 years named _____ who resides at the usual place of abode of the person to be served, and asking the family member to give it to the person to be served as soon as possible.

For a partnership:

Handing it to _____, a partner of the partnership or, because the partner refused to take it when I handed it over, by leaving it in the presence of the partner.

For a limited partnership:

Handing it to the general partner, named _____, or, because the general partner refused to take it when I tried to hand it over, by leaving it in the presence of the general partner.

For a corporation:

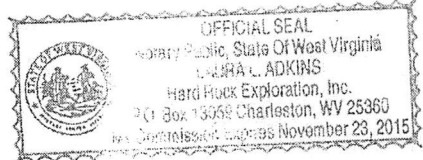
Handing it to the corporation's employee___/ officer___/ director___/ attorney in fact___/ named_____.

Norman Tallman
(Signature of person executing service)

Taken, subscribed and sworn before me this 24th day of July, 2013.
My commission expires November 23, 2015

Laura L. Adkins
Notary Public

(AFFIX SEAL IF NOTARIZED OUTSIDE THE STATE)



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: 07/17/2013 **Date Permit Application Filed:** 07/17/2013

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: Terry and Helen Kiessling ✓
Address: 8629 Red Maple Drive
Cincinnati, OH 35244-2714

Name: Frank Grass, et al ✓
Address: 5115 Lansing Drive
Charlotte, NC 28270

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>4354130.796</u>
County:	<u>Ritchie</u>		Northing:	<u>498919.064</u>
District:	<u>Clay</u>	Public Road Access:	<u>CountyRd 6/3</u>	
Quadrangle:	<u>Pennsboro</u>	Generally used farm name:	<u>Kiessling</u>	
Watershed:	<u>North Fork of Hughs River / Bonds Creek</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: Noble Energy, Inc.
Telephone: 724-820-3061
Email: dswiger@nobleenergyinc.com

Address: 333 Technology Drive, Suite 116
Canonsburg, PA 15317
Facsimile: 724-820-3098

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 of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

Received

JUL 23 2013

Office of Oil and Gas



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

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

Earl Ray Tomblin
Governor

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

August 5, 2013

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 Pennsboro-2 Well Site, Ritchie County

Dear Mr. Martin,

The West Virginia Division of Highways has issued Permit #03-2013-0290 for the subject site to Noble Energy, Inc. for access to the State Road for the well site located off of Ritchie County Route 6/3 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,

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

Cc: James L. McCune
Noble Energy, Inc.
CH, CHH, OM, D-3
File

85 10055

Chemical List Including CAS#'s

Type: Friction Reducer (DWP-612)

Chemical Component as listed on MSDS: Long Chain Polyacrylamide
CAS: N/A

Type: Biocide (DWP-944)

1st Chemical Component as listed on MSDS: 2,2-Dibromo-3-nitrilopropionamide
CAS: 10222-01-2
2nd Chemical Component as listed on MSDS: Polyethylene Glycol Mixture
CAS: 25322-68-3

Type: Scale Inhibitor (DAP-901)

1st Chemical Component as listed on MSDS: Methanol
CAS: 67-56-1
2nd Chemical Component as listed on MSDS: Phosphoric Acid Ammonium Salt
CAS: Trade Secret
3rd Chemical Component as listed on MSDS: Ammonium Chloride
CAS: 12125-02-9
4th Chemical Component as listed on MSDS: Organic Phosphonate
CAS: Trade Secret
5th Chemical Component as listed on MSDS: Amine Salt
CAS: Trade Secret
6th Chemical Component as listed on MSDS: Oxyalkylated Polyamine
CAS: Trade Secret

Type: Surfactant (DWP-938)

Chemical Component as listed on MSDS: Soap
CAS: N/A

Type: Hydrochloric Acid

Chemical Component as listed on MSDS: Hydrochloric Acid
CAS: 7647-01-0

Type: PA Breaker (DWP-690)

Chemical Component as listed on MSDS: Hydrogen Peroxide
CAS: Trade Secret

Type: Gel Slurry (DWP-111)

Chemical Component as listed on MSDS: Viscosifier
CAS: N/A

Type: Oxidizer Breaker (DWP-901)

Chemical Component as listed on MSDS: Ammonium Persulfate
CAS: 7727-54-0

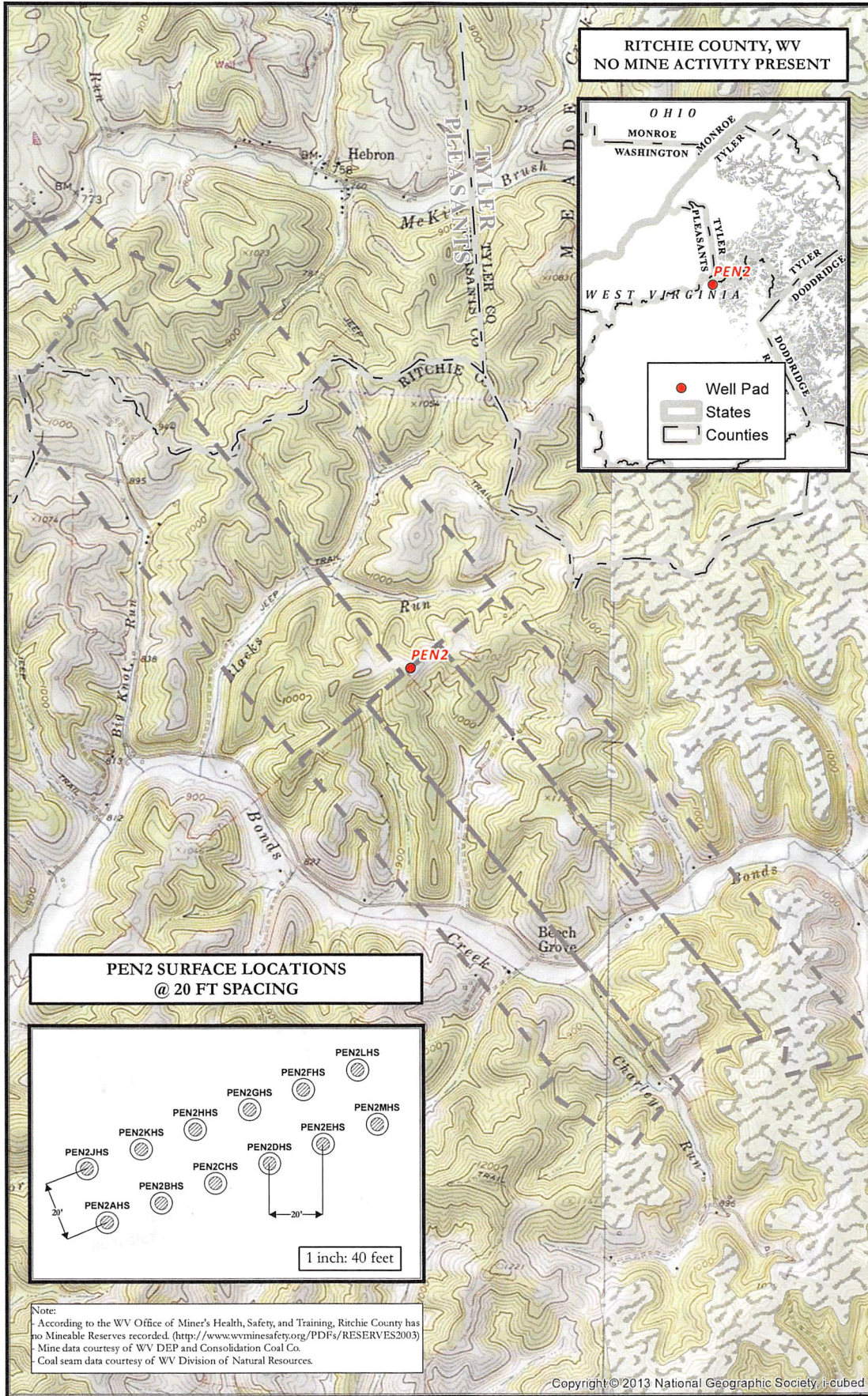
Type: Buffer (DWP-204)

Chemical Component as listed on MSDS: Formic Acid
CAS: 64-18-6

Received

23

Office of Oil and Gas
WV Dept. of Environmental Protection



PEN2 SITE SAFETY PLAN
 - WELLHEAD TOPHOLE LOCATION -

0 1,000 2,000 4,000 Feet

Scale 1" = 2,000'

Projection: NAD_1927_StatePlane_West_Virginia_North_FIPS_4701
 Units: Foot US

noble energy

Date: 7/16/2013
 Author: Christopher Glover

Disclaimer: All data is licensed for use by Noble Energy Inc. use only.

4
6

DRAWING CONSTRUCTION PLAN & EROSION

PENNSBORO

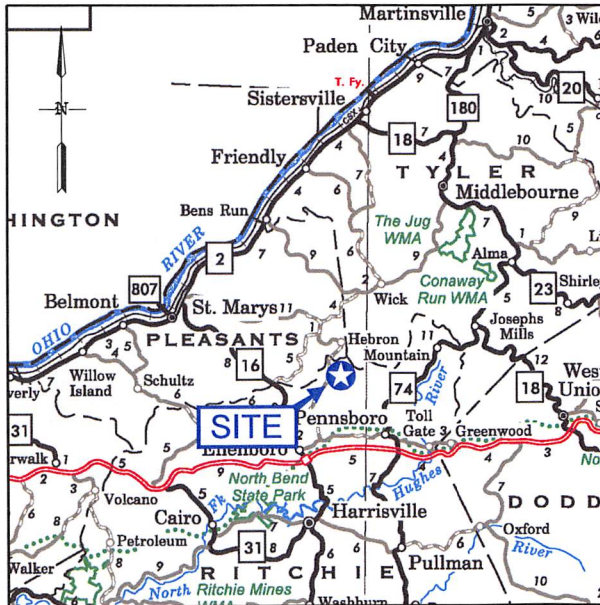
CLAY DISTRICT, RITCHIE C

JULY 2

API#8510055
API#8510066
API#8510067
API#8510068
API#8510069
API#8510070
API#8510071
API#8510072
API#8510073
API#8510074
API#8510075
API#8510076

LIST OF SH

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	TOTAL PROJECT
2A	DRAINAGE AND S
3	ACCESS ROAD G
3A	STREAM CROSSI
4	ACCESS ROAD G
5	WELL PAD GRAD
5A	WELL PAD RESTO
6	WELL PAD DETAI
7	E&S DETAILS (SH
8	E&S DETAILS (SH
9	E&S DETAILS (SH



VICINITY MAP
SCALE: 1" = 5 Miles

DISTURBANCE SUMMARY

LOD	11.2 ACRES
WELL PAD	2.7 ACRES
ACCESS ROAD	1.3 ACRES

DRIVING DIRECTIONS
FROM THE INTERSECTION OF I-79 AND US-50, TAKE US-50 W APPROXIMATELY 40 MILES AVE / OLD U.S. 50 E AND TRAVEL ABOUT 0.75 MILES. TURN RIGHT TO STA TRAVEL ABOUT 3.5 MILES. TURN RIGHT ONTO CO RD 63 / BRANCH BONDS CRE

WELL SITE SUMMARY

SITE LOCATION	DECIMAL DEGREES					
	LONGITUDE NAD27	LATITUDE NAD27	LONGITUDE NAD83	LATITUDE NAD83	EASTING UTM17N NAD27	NORTHING UTM17N NAD27
PAD CENTROID	-81.0127291	39.3365377	-81.0125611	39.3366160	498902.9796	4353915.0107
PAD ENTRANCE	-81.0130189	39.3360113	-81.0128509	39.3360896	498877.9915	4353856.5954
ROAD ENTRANCE	-81.0086999	39.3313106	-81.0085318	39.3313891	499250.1699	4353334.8916
WELL 1A	-81.0126040	39.3366140	-81.0124360	39.3366623	498913.7582	4353923.4758
WELL 1B	-81.0125787	39.3365628	-81.0124107	39.3366410	498915.9378	4353917.7851
WELL 2A	-81.0126700	39.3365944	-81.0125020	39.3366727	498908.0674	4353921.2964
WELL 2B	-81.0126447	39.3365431	-81.0124787	39.3366214	498910.2469	4353915.6056
WELL 3A	-81.0127361	39.3365747	-81.0125681	39.3366530	498902.3766	4353919.1170
WELL 3B	-81.0127108	39.3365235	-81.0125428	39.3366017	498904.5561	4353913.4262
WELL 4A	-81.0128021	39.3365551	-81.0126341	39.3366334	498896.6558	4353916.9375
WELL 4B	-81.0127768	39.3365038	-81.0126088	39.3365821	498898.8653	4353911.2468
WELL 5A	-81.0128681	39.3365354	-81.0127001	39.3366137	498890.9950	4353914.7581
WELL 5B	-81.0128428	39.3364842	-81.0126748	39.3365624	498893.1745	4353909.0673
WELL 6A	-81.0125390	39.3366337	-81.0123700	39.3367120	498919.4490	4353925.6555
WELL 6B	-81.0125127	39.3365824	-81.0123447	39.3366607	498921.6286	4353919.9645

PREPARED FOR:



NOBLE ENERGY, INC.
333 Technology Drive, Suite 116
Canonsburg, Pennsylvania 15317
Tel: (724) 820-3000

Electronic Version of Plans Can Be Viewed



CALL BEFORE YOU DIG! Dial 811 or 800.245.4848
www.WV811.com

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.

ENGINEERING PLANS FOR EROSION AND SEDIMENT CONTROL PLAN

2 WELL PAD

CLAY DISTRICT, RITCHIE COUNTY, WEST VIRGINIA

APPROVED
WVDEP OOG
SAY 10/8/2013

ARM Group Inc.
 Earth Resource Engineers
 and Consultants
www.armgroup.net



013

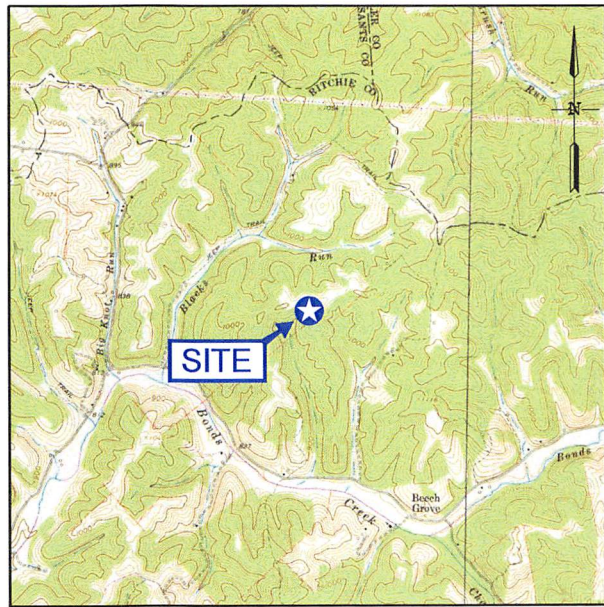
EETS

ON

- AREA PLAN
- LS PLAN
- ADING PLAN
- G PLAN
- ADING PLAN
- G PLAN
- ATION PLAN
- ET 1 OF 3)
- ET 2 OF 3)
- ET 3 OF 3)

ILES. TURN RIGHT ON WV-74 N / PULLMAN DR AND TRAVEL ABOUT 0.4 MILES. TURN LEFT ONTO WV-74 N / E
 ON WV-74 N AND TRAVEL APPROXIMATELY 3.5 MILES. TURN LEFT ONTO CO RD 6 / BONDS CREEK RD AND
 RD AND TRAVEL APPROXIMATELY 0.4 MILES. THE PROJECT SITE WILL BE ON THE LEFT.

NORTHING / EASTING					
EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING
UTM17N NAD83	UTM17N NAD83	WV NORTH NAD27	WV NORTH NAD27	WV NORTH NAD83	WV NORTH NAD83
498917.4877	4354132.3806	1572145.2712	308286.2173	1540704.3207	308319.8666
498892.4996	4354073.9646	1572060.0707	308095.8945	1540619.1212	308129.5417
499264.6751	4353552.2659	1573252.7989	306363.5094	1541811.8395	306397.1737
498928.2691	4354140.8459	1572181.1053	308313.4052	1540740.1545	308347.0552
498930.4457	4354135.1552	1572187.9456	308294.6113	1540746.9949	308328.2613
498922.5754	4354138.6664	1572162.3113	308306.5651	1540721.3607	308340.2148
498924.7549	4354132.9756	1572169.1517	308287.7712	1540728.2011	308321.4209
498916.8846	4354136.4866	1572143.5173	308299.7251	1540702.5668	308333.3744
498919.0642	4354130.7961	1572150.3577	308280.9312	1540709.4072	308314.5805
498911.1939	4354134.3073	1572124.7232	308292.8851	1540693.7730	308326.5340
498913.3734	4354128.6165	1572131.5637	308274.0911	1540690.6134	308307.7401
498905.5031	4354132.1278	1572105.9292	308286.0450	1540684.9791	308319.6936
498907.6826	4354126.4370	1572112.7697	308267.2511	1540671.8195	308300.8997
498933.9569	4354143.0255	1572199.8994	308320.2452	1540758.9494	308353.6956
498936.1364	4354137.3347	1572206.7398	308301.4513	1540765.7888	308335.1017



Base map from the following USGS 7.5 minute quadrangle: Etenboro.

LOCATION MAP
 SCALE: 1" = 2000'

PREPARED BY:



ARM Group Inc.
 Earth Resource Engineers
 and Consultants
www.armgroup.net

1000 Town Center Way, Suite 130 • Canonsburg, PA 15317
 Ph: (724) 743-5793 Fax: (724) 743-5792

HEADQUARTERS:

1129 West Governor Road • Hershey, PA 17033-0797
 Ph: (717) 533-8600 Fax: (717) 533-8605

ad at: QOIL GAS\SAY FILES\REVIEWS



No.	Revision	Date	By
1.	WV DEP RETIRE COMMENTS	09/20/13	STH

PROJECT	DATE	AS NOTED
DLL	07/15/2013	
CIS		
STH		
PROJECT NO.	C13102-2	

COVER SHEET
 CONSTRUCTION PLAN & EROSION AND SEDIMENT CONTROL PLAN
 CLAY DISTRICT
 RITCHIE COUNTY, WV

PENNSBORO 2 WELL PAD
 NOBLE ENERGY, INC.

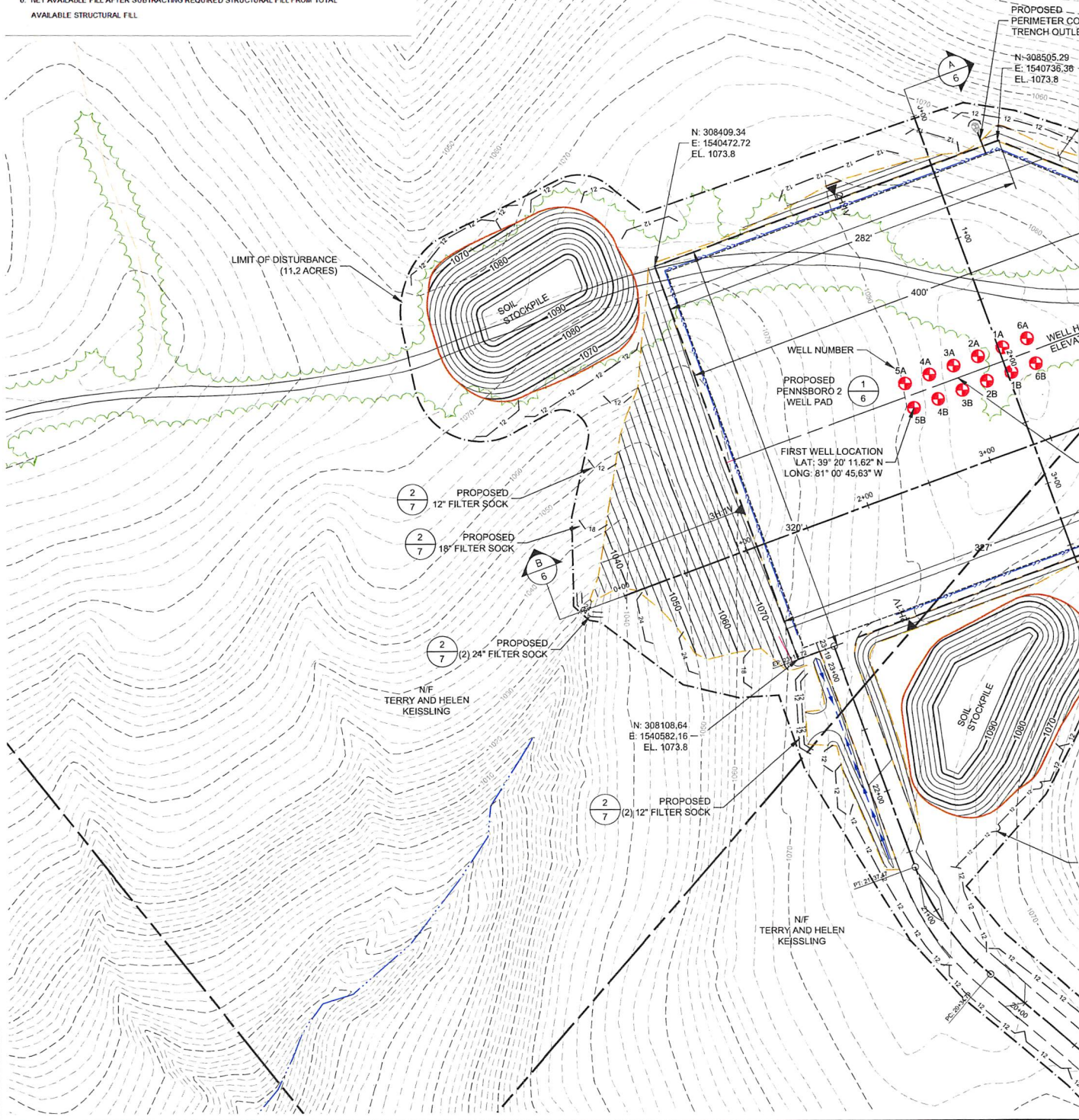
Sheet
1

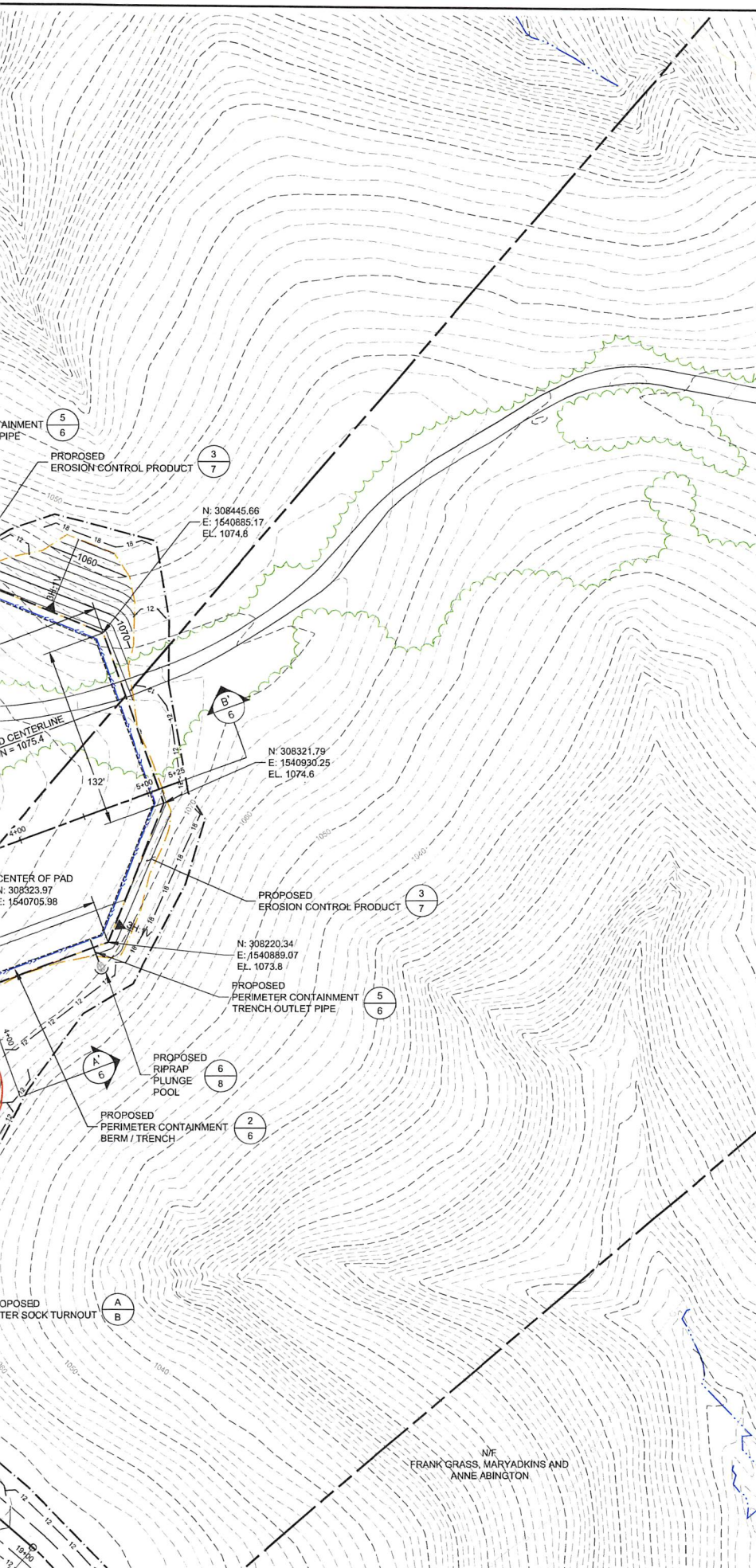
THIS DRAWING SET WAS ORIGINALLY PRODUCED IN COLOR. NON-COLOR REPRODUCTIONS
 DO NOT SUFFICIENTLY DIFFERENTIATE AMONG FEATURES DEPICTED IN THIS DRAWING SET.

This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not
 be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for
 the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

VOLUME REPORT ¹	
WELL PAD	
TOPSOIL - STOCKPILE (CY) ²	2,803
SUBSOIL CUT (CY) ³	16,953
ROCK CUT (CY)	539
TOTAL AVAILABLE STRUCTURAL FILL (CY) ⁴	15,258
REQUIRED STRUCTURAL FILL (CY) ⁵	12,485
NET AVAILABLE FILL (CY) ⁶	2,773
ACCESS ROADS & LOADING AREA	
TOPSOIL - STOCKPILE (CY) ²	3,109
SUBSOIL CUT (CY) ³	11,415
ROCK CUT (CY)	2,442
TOTAL AVAILABLE STRUCTURAL FILL (CY) ⁴	10,274
REQUIRED STRUCTURAL FILL (CY) ⁵	10,542
NET AVAILABLE FILL (CY) ⁶	(268)
TOTAL TOPSOIL - STOCKPILE (CY)	5,912
TOTAL ROCK REMOVAL (CY)	2,981
TOTAL EXCESS MATERIAL (CY)	2,505

- VOLUMES ARE BASED ON APPROXIMATE EXISTING GROUND SURFACE. EXISTING GROUND SURFACES ARE BASED ON LIDAR AND SHALL BE FIELD VERIFIED TO CONFIRM EXISTING CONDITIONS.
- TOP SOIL VOLUME IS BASED ON IN-PLACE CUBIC YARDS, NO SWELL FACTOR APPLIED.
- SUBSOIL VOLUME IS BASED ON IN-PLACE CUBIC YARDS, NO SWELL FACTOR APPLIED.
- TOTAL AVAILABLE STRUCTURAL FILL AFTER APPLYING A 10 PERCENT SHRINKAGE FACTOR TO SUBSOIL CUT TO ACCOUNT FOR COMPACTED DENSITY AND SUBTRACTING ROCK CUT VOLUME.
- REQUIRED STRUCTURAL FILL VOLUME BASED ON IN-PLACE (I.E. COMPACTED) CUBIC YARDS.
- NET AVAILABLE FILL AFTER SUBTRACTING REQUIRED STRUCTURAL FILL FROM TOTAL AVAILABLE STRUCTURAL FILL.





APPROVED
WVDEP OOG
 Date: 10/8/2013

NOTES:

1. THE BASE MAP HAS BEEN CREATED USING DATA OBTAINED FROM BLUE MOUNTAIN DATED MARCH 2013.
2. PROPERTY LINES AND OWNER INFORMATION OBTAINED FROM DATA SUPPLIED BY JOBES HENDERSON & ASSOCIATES DATED MARCH 2013.
3. ALL TEST HOLE LOCATIONS AND ELEVATIONS ARE BASED ON FIELD SURVEY.
4. THIS PLAN IS IN THE WEST VIRGINIA STATE PLANE NORTH, NORTH AMERICAN DATUM 1983 (NAD 83) COORDINATE SYSTEM.

LEGEND

	1550	EXISTING CONTOURS
		EXISTING PROPERTY LINE
		EXISTING FENCE
		EXISTING GAS LINE
		EXISTING TREELINE
	1490	PROPOSED CONTOURS
		PROPOSED ROAD
		PROPOSED EDGE OF WELL PAD SURFACE
		PROPOSED OUTSIDE EDGE OF PERIMETER CONTAINMENT BERM
		PROPOSED WELL PAD PERIMETER CONTAINMENT TRENCH
		PROPOSED GUARD RAIL
	12	PROPOSED 12" FILTER SOCK
	18	PROPOSED 18" FILTER SOCK
	24	PROPOSED 24" FILTER SOCK
	32	PROPOSED 32" FILTER SOCK
	18 12	PROPOSED STACKED 18" FILTER SOCK
	12	PROPOSED FILTER SOCK TURNOUT
		PROPOSED EROSION CONTROL PRODUCT
		PROPOSED CHANNEL
		PROPOSED LIMIT OF DISTURBANCE
		PROPOSED ROCK CONSTRUCTION ENTRANCE
		PROPOSED CULVERT
		PROPOSED ROCK CHECK DAM
	2H:1V	PROPOSED SLOPE
	1 5	DETAIL REFERENCE: DETAIL NUMBER DETAIL LOCATION

Scale	1" = 50'
Author	DLL
Date	07/15/2013
Project	CIS
Revision	STH
Sheet	C13102-2

WELL GRADING PLAN
CONSTRUCTION PLAN & EROSION AND SEDIMENT CONTROL PLAN
 CLAY DISTRICT
 RITCHIE COUNTY, WV

PENNSBORO 2 WELL PAD
 NOBLE ENERGY, INC.



This drawing, its contents, and each component of this drawing are the property of and proprietary to ARM Group Inc. and shall not be reproduced or used in any manner except for the purpose identified on the Title Block, and only by or on behalf of this client for the identified project unless otherwise authorized by the express, written consent of ARM Group Inc.

Sheet **5**



No.	Revision	Date	By