



west virginia department of environmental protection

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

Jim Justice , Governor
Austin Caperton , Cabinet Secretary
www.dep.wv.gov

Monday, March 20, 2017
WELL WORK PERMIT
Horizontal 6A / New Drill

EQT PRODUCTION COMPANY (A)
120 PROFESSIONAL PLACE
BUILDING II
BRIDGEPORT, WV 26330

Re: Permit approval for 514102
47-017-06789-00-00

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

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

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief



Operator's Well Number: 514102
Farm Name: HART, RONALD & JEFFERY
U.S. WELL NUMBER: 47-017-06789-00-00
Horizontal 6A / New Drill
Date Issued: 3/20/2017

Promoting a healthy environment.

03/24/2017

PERMIT CONDITIONS **4701706700**

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

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

PERMIT CONDITIONS

4701703700

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

WW-6B
(04/15)

API NO. 47-017 - 06789
OPERATOR WELL NO. 514102
Well Pad Name: OXF160

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

1) Well Operator: EQT Production Company 306686 Doddridge Southwest Oxford
Operator ID County District Quadrangle

2) Operator's Well Number: 514102 Well Pad Name: OXF160

3) Farm Name/Surface Owner: Ronald Hart & Jeffery Hart Public Road Access: WV-18

4) Elevation, current ground: 1220 Elevation, proposed post-construction: 1220

5) Well Type (a) Gas Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow Deep _____

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s): Marcellus, 6638', 58', 2951 PSI 4700 200700

8) Proposed Total Vertical Depth: 6638'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 11134

11) Proposed Horizontal Leg Length: 3299

12) Approximate Fresh Water Strata Depths: 31, 215, 262, 358, 578'

13) Method to Determine Fresh Water Depths: By offset wells

14) Approximate Saltwater Depths: None noted

15) Approximate Coal Seam Depths: None noted

16) Approximate Depth to Possible Void (coal mine, karst, other): None

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

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

Depth: _____

Seam: _____

Owner: _____

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2/24/2017

DWF
2/13/17

18) CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20	New	A-500	78.6	81	81	122 ft ³ / CTS
Fresh Water	13 3/8	New	J-55	54.5	678	678	617 ft ³ / CTS
Coal							
Intermediate	9 5/8	New	A-500	40	3072	3072	1211 ft ³ / CTS
Production	5 1/2	New	P-110	20	11134	11134	500' above top producing zone
Tubing	2 3/8		J-55	4.7		May not be run, if run set 40' above top perf or 80° inclination	
Liners							

47017017020

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20	26	.375	1378	35	Class A	1.18
Fresh Water	13 3/8	17 1/2	.38	2700	2160	See Variance 2014-17	1.19
Coal							
Intermediate	9 5/8	12 3/8	.395	3950	3160	See Variance 2014-17	1.19
Production	5 1/2	8 1/2	.361	12640	10112	Class A/H	1.123/2.098
Tubing	2 3/8	NA	.19	7700			
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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

Drill and complete a new horizontal well in the Marcellus Formation. Drill the vertical to an approximate depth of 3427'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

470170102

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

Hydraulic fracturing is completed in accordance with state regulations using water recycled from previously fractured wells and obtained from freshwater sources. This water is mixed with sand and a small percentage (less than 0.3%) of chemicals (including 15% Hydrochloric acid, friction reducer, biocide, and scale inhibitor), referred to in the industry as a "slickwater" completion. Maximum anticipated internal casing pressure is expected to be approximately 10000 psi, maximum anticipated treating rates are expected to average approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 250,000 gallons of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 250,000 pounds of sand per stage.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc.. (acres): 16.9

22) Area to be disturbed for well pad only, less access road (acres): 7.5

23) Describe centralizer placement for each casing string:

- Surface: Bow spring centralizers – One centralizer at the shoe and one spaced every 500'.
- Intermediate: Bow spring centralizers– One centralizer at the shoe and one spaced every 500'.
- Production: One solid body centralizer spaced every joint from production casing shoe to KOP

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

Conductor: Class A no additives
 Surface (Type 1 Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries
 Intermediate (Type 1 Cement): 0-3% Calcium Chloride. Used to speed the setting of cement slurries.
 Production:
 Lead (Class A Cement): 0.2% CD-20 (dispersant makes cement easier to mix). .15% SuperFL-300 (fluid loss/lengthens thickening time) .15% SEC-10 (fluid loss) 50:50 POZ (extender)
 Tail (Class H Cement): 0.2% Super CR-1 (Retarder) Lengthens thickening time. .3% Super FL-200 (fluid loss) .2% SEC-10 (Fluid loss) .2% SuperFL-350 (fluid loss) Reduces amount of water lost to formation. 60 % Calcium Carbonate. Acid solubility.

25) Proposed borehole conditioning procedures:

Surface: Circulate hole clean while rotating & reciprocating the drill string until cuttings diminish at surface.
 Intermediate: Circulate hole clean while rotating & reciprocating the drill string until cuttings diminish at surface.
 Production: Pump marker sweep with nut plug to determine actual hole washout. Calculate a gauge holes bottoms up volume. Perform a cleanup cycle by pumping 3-5 bottoms up or until the shakers are clean. Check volume of cuttings coming across the shakers every 15 minutes.

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*Note: Attach additional sheets as needed.

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 [Signature]

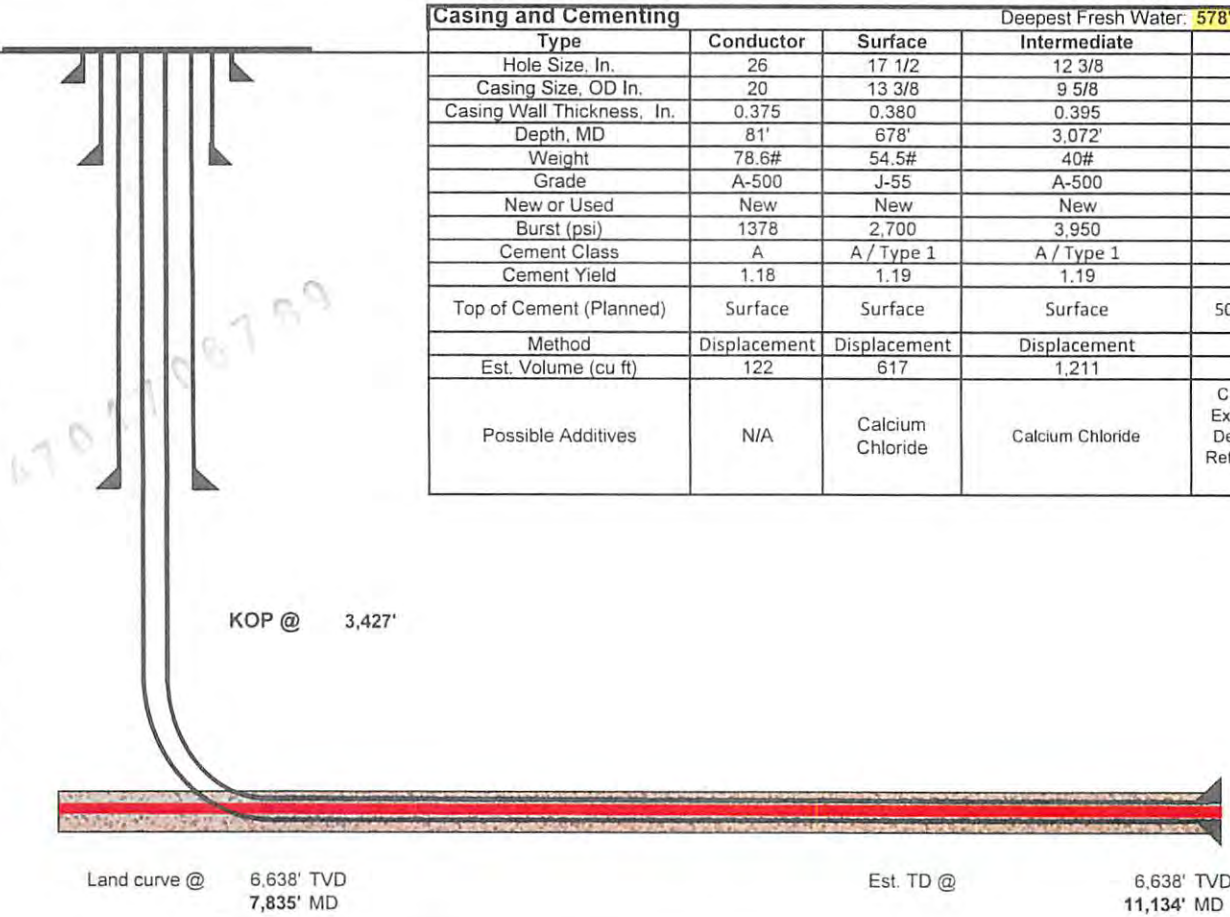
017-06789

Well **514102**
 EQT Production
 Oxford Quad
 Doddridge County, WV

Azimuth 157
 Vertical Section 6083

Note: Diagram is not to scale

Formations	Top TVD	Base TVD
Conductor	81	
Base Fresh Water	578	
Surface Casing	678	
Base Red Rock	1278	
Maxton	1760 - 1799	
Big Lime	1949 - 2053	
Big Injun	2067 - 2081	
Weir	2172 - 2358	
Gantz	2464 - 2478	
Fifty foot	2639 - 2672	
Gordon	2735 - 2744	
Bayard	3002 - 3022	
Intermediate Casing	3072	
Warren	3268 - 3302	
Speechley	3318 - 3335	
Balltown A	3848 - 4774	
Riley	4774 - 4800	
Benson	4865 - 4875	
Alexander	5111 - 5211	
Sonyea	6275 - 6406	
Middlesex	6406 - 6460	
Genesee	6460 - 6527	
Genesee	6527 - 6571	
Tully	6571 - 6591	
Hamilton	6591 - 6603	
Marcellus	6603 - 6661	
Production Casing	11134 MD	
Onondaga	6661	



Casing and Cementing				Deepest Fresh Water: 578'	Production
Type	Conductor	Surface	Intermediate		
Hole Size, In.	26	17 1/2	12 3/8		8 1/2
Casing Size, OD In.	20	13 3/8	9 5/8		5 1/2
Casing Wall Thickness, In.	0.375	0.380	0.395		0.361
Depth, MD	81'	678'	3,072'		11,134'
Weight	78.6#	54.5#	40#		20#
Grade	A-500	J-55	A-500		P-110
New or Used	New	New	New		New
Burst (psi)	1378	2,700	3,950		12,640
Cement Class	A	A / Type 1	A / Type 1		A / H
Cement Yield	1.18	1.19	1.19		1.123 / 2.098
Top of Cement (Planned)	Surface	Surface	Surface		500' above top Producing Zone
Method	Displacement	Displacement	Displacement		Displacement
Est. Volume (cu ft)	122	617	1,211		1,546
Possible Additives	N/A	Calcium Chloride	Calcium Chloride		Calcium Carbonate, Fluid Loss, Extender, Dispersant, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent

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Proposed Well Work:
 Drill and complete a new horizontal well in the Marcellus formation.
 Drill the vertical to an approximate depth of 3427'.
 Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

3,299' Lateral

DAF
 2/13/17

4701706789

EQT Production
Hydraulic Fracturing Monitoring Plan
Pad ID: OXF160
Doddridge County, WV

9/12/16

Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near EQT hydraulic fracturing in Doddridge County, WV prior to hydraulic fracturing at the following EQT wells on the OXF160 pad: 513172, 514102

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 6,600' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability Alexander formation (approximately 5,100' TVD).

The plan is being implemented as an additional safety measure to be utilized in conjunction with existing best management practices and emergency action plans for the site. These additional measures include pre-notification of conventional well operators of the timing and location of the hydraulic fracturing, establishment of measures conventional well operators should implement, and assurance that the OOG is notified of the timeline, as well as any issues that may arise during fracturing.

1. Communications with Conventional Well Operators

EQT, using available data (WV Geological Survey, WVDEP website, and IHS data service), has identified all known conventional wells and well operators within 500 feet of this pad and the lateral sections. A map showing these wells along with a list of the wells and operators is included in **Attachment A**.

Upon approval of this plan, EQT will notify these operators, via letter, of the hydraulic fracturing schedule for these wells. A copy of this letter is included in **Attachment B**.

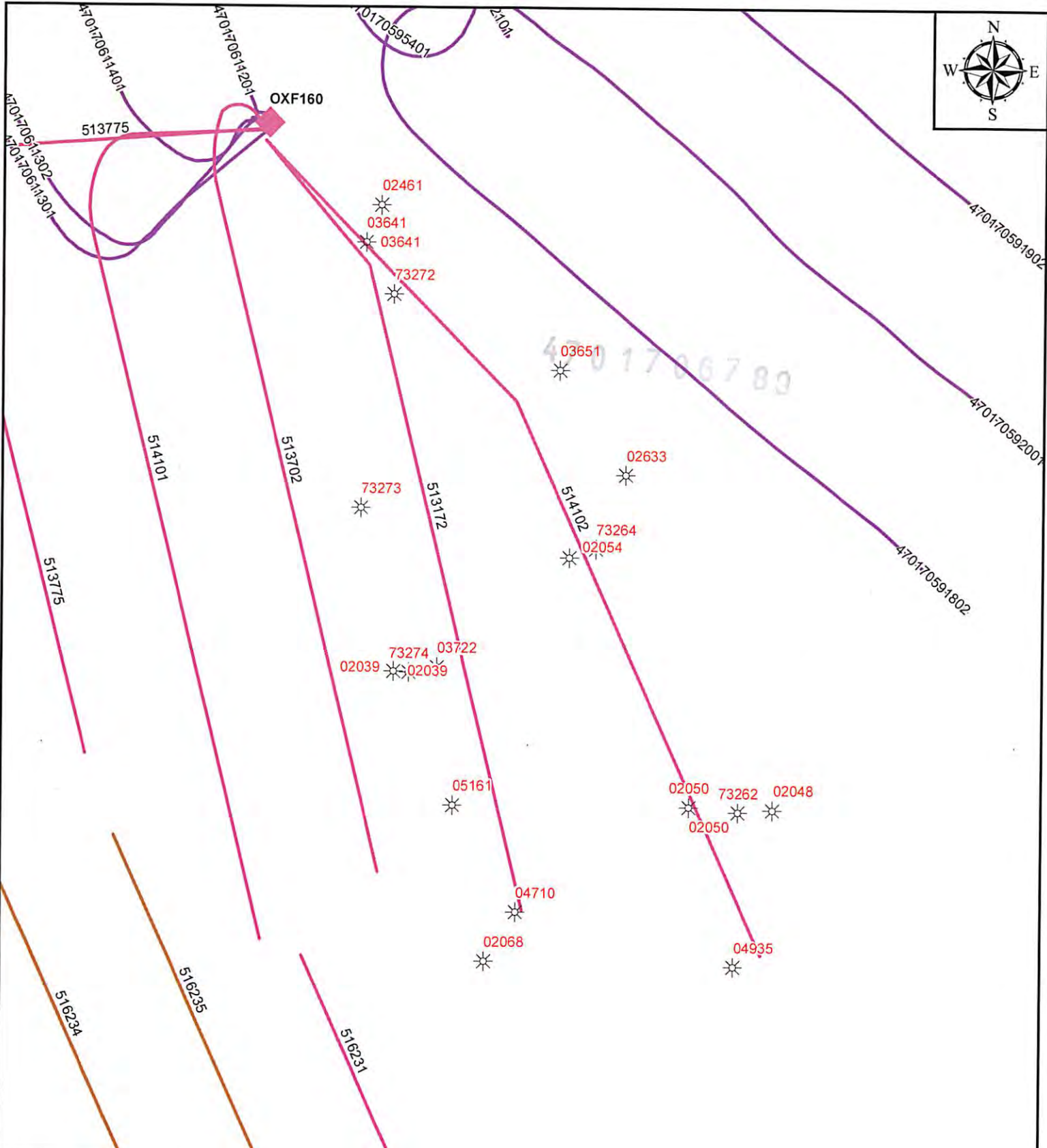
The letter provides recommendations to these conventional operators to 1) increase their monitoring of their wells during that time period, 2) ensure that their well head equipment is sound, and 3) provide immediate notification to EQT and the OOG in the event of any changes in their well conditions.

Specifically, the letter recommends that conventional well operators conduct the following activities during and after fracturing operations:

1. Inspect their surface equipment prior to fracturing to establish integrity and establish pre-frac well conditions
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas or pressure
3. Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified

2. Reporting

EQT will provide information relating to the hydraulic fracturing schedule, communication with conventional operators, and ongoing monitoring of the work upon request of OOG or immediately in the event of any noted abnormalities.



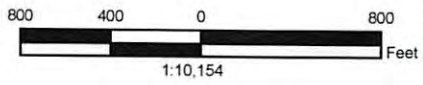
EQT
 EQT Corporation
 625 Liberty Avenue
 Pittsburgh, PA 15222

OXF160 513172, 514102

Vertical Offsets and Foreign Laterals within 500'

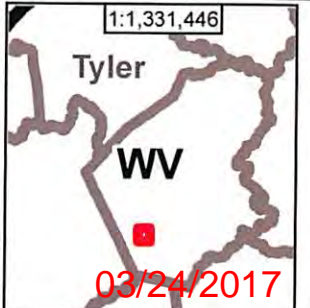
- Legend**
- OXF160_Offsets_GGX_9_9_2016
 - OXF160_Offsets_GIS_9_9_2016

- Target Formation**
- Utica
 - Genesee
 - Marcellus
 - Middlesex
 - Genesee Spud
 - Marcellus Spud
 - Middlesex Spud
 - Utica Spud



Disclaimer:

This map is confidential and is to be used only for the express informational purposes for which it was created. Unauthorized use, copying, or dissemination is strictly prohibited. EQT does not warrant the accuracy of the location of any items shown on this map, including, but not limited to, any structures, well or pipeline facilities, property boundaries, topography, roadways, or waterways. The items shown on the map may not have been placed on the map using survey lines or GPS coordinates. The specific location of any of the map items should be determined by a field survey performed by a licensed surveyor upon consultation with EQT.



WellID	WellStatus	Comp Date	FmatTD	Permit	Operator	Longitude	Latitude	TargetFm	DatumEleva	TotalDepth
47017020480000	GAS	5/18/1918		02048	EPC	-80.7876	39.1695		0	-1944
47017024610000	GAS	9/6/1979	DEVONIAN /SD/	02461	MURVIN & MEIER OIL COMPANY	-80.7966	39.1802	BEREA	1230	2636
47017026330000	GAS	6/25/1980	DEVONIAN /SD/	02633	LUCAS WELL SERVICE INCORPORATED	-80.7910	39.1754	GORDON /SD/	1320	2795
47017036410000	GAS	6/18/1988	DEVONIAN /SD/	03641	TERM ENERGY	-80.7970	39.1795	ALEXANDER	1220	5279
47017036410001	GAS-WO	10/3/2002	BRADFORD	03641	TERM ENERGY	-80.7970	39.1795	BRADFORD	1220	5279
47017036510000	GAS	7/28/1988	DEVONIAN /SD/	03651	TERM ENERGY	-80.7925	39.1772	ALEXANDER	1195	5247
47017037220000	GAS	6/24/1989	DEVONIAN /SD/	03722	TERM ENERGY	-80.7953	39.1720	ALEXANDER	1031	5094
47017051610000	GAS	6/28/2006	GORDON /SD/	05161	KEY OIL COMPANY	-80.7949	39.1696	GORDON	1100	2631
47017049350000	GAS	3/5/2005	GORDON	04935	KEY OIL COMPANY	-80.7885	39.1667	GORDON	1203	2770
47017047100000	GAS	1/27/2003	DEVONIAN UPPER /SERIES/	04710	KEY OIL COMPANY	-80.7935	39.1677	ALEXANDER	1206	5343
47017732640000	UNKWN			73264	UNKNOWN	-80.7917	39.1741		0	0
47017732720000	UNKWN			73272	UNKNOWN	-80.7963	39.1786		0	0
47017732730000	UNKWN			73273	UNKNOWN	-80.7971	39.1748		0	0
47017732740000	UNKWN			73274	EQUITABLE RESOURCES EXPLORATION INC	-80.7960	39.1719		0	0
47017732620000	UNKWN			73262	UNKNOWN	-80.7884	39.1694		0	0
47017020540000	ABD-GW	6/1/1996	WEIR /SD/	02054	UNKNOWN	-80.7923	39.1739	WEIR /SD/	1247	2795
47017020390000	ABD-GW	4/29/1917	BIG INJUN	02039	EQUITABLE GAS COMPANY	-80.7963	39.1719	BIG INJUN	1037	1795
47017020390001	ABD-GW	10/17/1926	GORDON	02039	EQUITABLE PRODUCTION COMPANY	-80.7963	39.1719	GORDON	1037	2453
47017020500000	ABD-GW	6/18/1918	BIG INJUN	02050	EQUITABLE GAS COMPANY	-80.7895	39.1695	BIG INJUN	1066	1823
47017020500001	ABD-GW	10/24/1926	BIG INJUN	02050	EQT PRODUCTION COMPANY	-80.7895	39.1695	BIG INJUN	1066	1944
47017020680000	GAS	3/2/1920	BIG INJUN	02068	EQT PRODUCTION COMPANY	-80.7942	39.1668	BIG INJUN	1035	1833

47017051610000

Attachment A(2)

UWI	Name	Depth Top	Base Depth
47017024610000	BIG INJUN /SD/	1940	2008
47017024610000	WEIR /SD/	2160	2280
47017024610000	BEREA	2356	2368
47017024610000	GORDON /SD/	2582	2600
47017026330000	BIG INJUN /SD/	2020	2190
47017026330000	WEIR /SD/	2290	2410
47017026330000	BEREA	2490	2504
47017026330000	FIFTY FOOT SD	2720	2730
47017036410000	BIG LIME	1857	1932
47017036410000	BIG INJUN /SD/	1932	2007
47017036410000	WEIR /SD/	2154	2273
47017036410000	GORDON /SD/	2585	2590
47017036410000	WARREN /SD/	3228	3364
47017036410000	BALLTOWN /SD/	3969	4056
47017036410000	RILEY /SD/	4400	4444
47017036410000	BENSON /SD/	4745	4836
47017036410000	LEOPOLD	4952	4986
47017036410000	ALEXANDER	5077	
47017036510000	BIG LIME	1845	1917
47017036510000	BIG INJUN /SD/	1917	1997
47017036510000	BEREA	2344	
47017036510000	GORDON /SD/	2574	2578
47017036510000	WARREN /SD/	3214	3349
47017036510000	BALLTOWN /SD/	3956	4045
47017036510000	RILEY /SD/	4388	4436
47017036510000	BENSON /SD/	4731	
47017036510000	ALEXANDER	5066	5169
47017037220000	BIG LIME	1702	1768
47017037220000	BIG INJUN /SD/	1768	1858
47017037220000	WEIR /SD/	2001	2118
47017037220000	BEREA	2201	2205
47017037220000	GORDON /SD/	2429	2432
47017037220000	WARREN /SD/	3075	3207
47017037220000	RILEY /SD/	4245	4297
47017037220000	BENSON /SD/	4677	
47017037220000	ALEXANDER	4927	5024
47017047100000	LITTLE LIME	1825	1883
47017047100000	BIG LIME	1883	1926

Perforated Formations

UWI	Depth Top	Depth Base
47017020390000	1453	1453
47017020390000	1782	1793
47017020390001	2423	2426
47017020390001	2423	2426
47017020500000	1610	1610
47017020500000	1753	1754
47017020500000	1808	1821
47017020500001	1845	1850
47017020540000		
47017020680000	1395	1397
47017020680000	1500	1502
47017020680000	1740	1758

* Data above is data that was in the perforated section of IHS but did not have coresponding data in the current Formation sheet.

4701706789

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47017047100000	KEENER /SD/	1926	1965
47017047100000	BIG INJUN	1965	2151
47017047100000	WEIR /SD/	2151	2354
47017047100000	BEREA	2354	2534
47017047100000	GORDON	2534	3228
47017047100000	WARREN /SD/	3228	3273
47017047100000	SPEECHLEY	3273	3950
47017047100000	BALLTOWN /SD/	3950	4378
47017047100000	RILEY /SD/	4378	4691
47017047100000	RILEY 3	4691	4831
47017047100000	BENSON /SD/	4831	4952
47017047100000	ELK /SD/	4952	5074
47017047100000	ALEXANDER	5074	
47017049350000	LITTLE LIME	1800	1905
47017049350000	BIG LIME	1905	1950
47017049350000	KEENER /SD/	1950	1986
47017049350000	BIG INJUN	1986	2165
47017049350000	WEIR /SD/	2165	2369
47017049350000	BEREA	2369	2568
47017049350000	GORDON	2568	
47017051610000	LITTLE LIME	1726	
47017051610000	BIG LIME	1768	
47017051610000	KEENER /SD/	1818	
47017051610000	BIG INJUN /SD/	1858	
47017051610000	WEIR /SD/	2048	
47017051610000	BEREA	2249	
47017051610000	GORDON /SD/	2427	

4701706789



625 Liberty Ave, Suite 1700
Pittsburgh PA 15222
www.eqt.com

TEL: (412) 395-3305
FAX: (412) 395-2156

John Centofanti
Corporate Director,
Environmental Affairs

(date)

[Conventional Well Operator]
[address]
[state]

RE: Doddridge County Hydraulic Fracturing Notice

Dear Sir/Madam,

EQT has developed a Marcellus pad (Oxford 160 pad) located in Doddridge County, WV. As an owner or operator of conventional natural gas wells in this area, we are requesting your assistance in this matter.

Due to the apparent presence of unique geological conditions, the potential for communication between deep geologic zones exists in this area. This potential communication, via natural gas, water, or both, may occur between hydraulically fractured wells in the Marcellus formation (approximately 6,600' TVD) and existing conventional natural gas wells in the partially-depleted, relatively high permeability, Alexander formation (approximately 5,100' TVD).

EQT anticipates conducting hydraulic fracturing at the Oxford 160 pad during the [first,second, third,fourth] quarter of [year]. We have identified conventional natural gas wells operated by your company within 500' (lateral distance) of our new/planned laterals. Plats for each well on this pad are attached.

We recommend that conventional well operators conduct the following activities before, during, and after fracturing operations:

1. Inspect surface equipment, prior to fracturing, to establish integrity and establish well conditions.
2. Observe wells closely during and after fracturing and monitor for abnormal increases in water, gas, or pressure.
3. Inspect or install master valves rated to 3,000 psi or other necessary equipment for wellhead integrity.
4. Notify the OOG and EQT if any changes in water, gas production, pressure, or other anomalies are identified.

Please feel free to contact me at 412-395-3305 with any questions or comments. You may also contact the West Virginia Office of Oil and Gas at 304-926-0440.

Sincerely,
EQT Production

John Centofanti
Corporate Director, Environmental Affairs

cc: James Martin, WV Office of Oil and Gas

03/24/2017

Attachment B



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
dep.wv.gov

March 18, 2014

Nabors Completion & Production Services Company
1380 Route 286 Hwy E #121
Indiana PA 15701

Re: Cement Variance Request

Dear Sir or Madam,

This agency is approving a variance request for the cement blend listed below to be used on surface and coal protection strings for the drilling of oil and gas wells in the state of West Virginia. The variance cannot be used without requesting its use on a permit application and approval by this agency:

- Type 1 (2% Calcium Chloride-Accelerator, 0.25% Super Flake-Lost Circulation, 5.2% Water, 94% Type "1" Cement)

If you have any questions regarding this matter feel free to contact me at 304-926-0499, ext. 1653.

Sincerely,

A handwritten signature in blue ink that reads "James Peterson" followed by a stylized monogram "JCS".

James Peterson
Environmental Resources Specialist / Permitting

Promoting a healthy environment.

RECEIVED
Office of Oil and Gas

SEP 30 2016

WV Department of
Environmental Protection 03/24/2017



west virginia department of environmental protection

Office of Oil and Gas
601 5th Street, SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

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

**BEFORE THE OFFICE OF OIL AND GAS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE OF WEST VIRGINIA**

IN THE MATTER OF A VARIANCE FROM) ORDER NO. 2014 - 17
REGULATION 35 CSR § 4-11.4/11.5/14.1)
AND 35 CSR § 8-9.2.h. 4/5/6/8 OF THE)
THE OPERATIONAL)
REGULATIONS OF CEMENTING OIL)
AND GAS WELLS)

REPORT OF THE OFFICE

Nabors Completion & Production Services Co. requests approval of a different cement blend for use in cementing surface and coal protection casing of oil and gas wells.

FINDINGS OF FACT

- 1.) Nabors Completion & Production Services Co. proposes the following cement blend:
 - 2% Calcium Chloride (Accelerator)
 - 0.25 % Super Flake (Lost Circulation)
 - 94% Type "1" Cement
 - 5.20 % Water
- 2.) Laboratory testing results indicate that the blend listed in Fact No.1 will achieve a 500 psi compressive strength within 6 hours and a 2,435 psi compressive strength within 24 hours.

Promoting a healthy environment.

03/24/2017

CONCLUSIONS OF LAW

Pursuant to Articles 6 and 6A, Chapter 22 of the Code of West Virginia, the Office of Oil and Gas has jurisdiction over the subject matter embraced in said notice, and the persons interested therein, and jurisdiction to promulgate the hereinafter prescribed Order.

Pursuant to 35 CSR § 4-11.5 and 35 CSR § 8-9.2.h.8 the Chief of the Office of Oil and Gas may approve different cement blends upon the well operator providing satisfactory proof that different cement types are adequate.

ORDER

It is ordered that Nabors Completion & Production Services Co. may use the cement blend listed in Findings of Fact No.1 for the cementing of surface and coal protection casing of oil and gas wells in the State as may be requested by oil and gas operators. The waiting time on the cement blend shall be 8 hours. The cement blend shall be mixed in strict accordance with the specifications for each blend and weight measurements made on-site to assure the cement slurries meet the minimum weight specifications. A sample shall be collected and, if after 8 hours the cement is not set up, additional time will be required. Nabors Completion & Production Services Co. shall keep a record of cement blend jobs in which the cement blend approved under this order is to be used and made available to the Office of Oil and Gas upon request.

Dated this, the 18th day of March, 2014.

IN THE NAME OF THE STATE OF WEST VIRGINIA

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



James Martin, Chief
Office of Oil and Gas

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Office of Oil and Gas

SEP 30 2016

WV Department of
Environmental Protection

03/24/2017

WW-9
(2/15)

API Number 47 - 017 - _____
Operator's Well No. 514102 _____

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name EQT Production Company OP Code 306686

Watershed (HUC 10) Upper Run of Middle Fork of South Fork Hughes River Quadrangle Oxford

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

Will a pit be used? Yes No

If so, please describe anticipated pit waste: _____

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number 0014, 8462, 4037)
- Reuse (at API Number Various)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Will closed loop system be used? If so, describe: Yes, The closed loop system will remove drill cuttings from the drilling fluid. The drill cuttings are then prepared for transportation to an off-site disposal facility.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. See Attached

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

Additives to be used in drilling medium? See Attached

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

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

-Landfill or offsite name/permit number? See Attached List

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature _____

Company Official (Typed Name) Victoria J. Roark

Company Official Title Permitting Supervisor

Subscribed and sworn before me this 28 day of September, 20 16

Rebecca L. Wangstreet Notary Public

My commission expires 4-7-2020



EQT Production Company

Proposed Revegetation Treatment: Acres Disturbed 16.9 Prevegetation pH 6.3

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type Granular 10-20-20

Fertilizer amount 1/3 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
KY-31	40	Orchard Grass	15
Alsike Clover	5	Alsike Clover	5
Annual Rye	15		

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:

[Handwritten signature]

Comments:

Presseed and Mulch any disturbed areas per WUDEP regs. Maintain & upgrade ETS as necessary. No sig on location until presseeding & mulching are finished

Title: Oil & Gas Inspector

Date: 10/13/16

Field Reviewed? () Yes () No

Received
Office of Oil & Gas
OCT 27 2016

WW-9 Attachment

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.

- **Air is used to drill the top-hole sections of the wellbore (surface, intermediate, and pilot). Water based mud may be necessary depending on hole conditions to stabilize and drill the intermediate section. The pilot hole, curve, and lateral sections will be drilled with either air, water based mud, or oil based mud.**

Additives to be used in drilling medium?

- **Air - biodegradable oil lubricant, detergent, defoaming, water. Water based mud – Barite, viscosifer, alkalinity control, lime, filtration control, deflocculates, biodegradable oil lubricant, defoaming, walnut shell, salt, x-cide, carbonates. Oil based mud – synthetic base oil, emulsifier, salt, lime, viscosifer, alkalinity control, filtration control, deflocculates, biodegradable oil lubricant, defoaming, carbonates.**



4701706789

September 27, 2016

Mr. Gene Smith
West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304

Re: Casing plan on Wells (OXF160)

Dear Mr. Smith,

EQT is requesting the 13-3/8" surface casing be set at 678' KB, 100' below the deepest fresh water. We will set the 9-5/8" intermediate string at 3072' KB, 50' below the base of the Bayard formation.

If you have any questions, please do not hesitate to contact me at (304) 848-0076.

Sincerely,

Vicki Roark
Permitting Supervisor

Enc.

RECEIVED
Office of Oil and Gas

SEP 30 2016

WV Department of
Environmental Protection

EQT Production Water plan
Offsite disposals for Marcellus wells

CWS TRUCKING INC.

P.O. Box 391
 Williamstown, WV 26187
 740-516-3586
 Noble County/Noble Township
 Permit # 3390

BROAD STREET ENERGY LLC

37 West Broad Street
 Suite 1100
 Columbus, Ohio 43215
 740-516-5381
 Washington County/Belpre Twp.
 Permit # 8462

LAD LIQUID ASSETS DISPOSAL INC.

226 Rankin Road
 Washington, PA 15301
 724-350-2760
 724-222-6080
 724-229-7034 fax
 Ohio County/Wheeling
 Permit # USEPA WV 0014

TRIAD ENERGY

P.O. Box 430
 Reno, OH 45773
 740-516-6021 Well
 740-374-2940 Reno Office Jennifer
 Nobel County/Jackson Township
 Permit # 4037

TRI COUNTY WASTE WATER MANAGEMENT, INC.

1487 Toms Run Road
 Holbrook, PA 15341
 724-627-7178 Plant
 724-499-5647 Office
 Greene County/Waynesburg
 Permit # TC-1009

KING EXCAVATING CO.

Advanced Waste Services
 101 River Park Drive
 New Castle, Pa. 16101
 Facility Permit# PAR000029132

Waste Management - Meadowfill Landfill

Rt. 2, Box 68 Dawson Drive
 Bridgeport, WV 26330
 304-326-6027
 Permit #SWF-1032-98
 Approval #100785WV

Waste Management - Northwestern Landfill

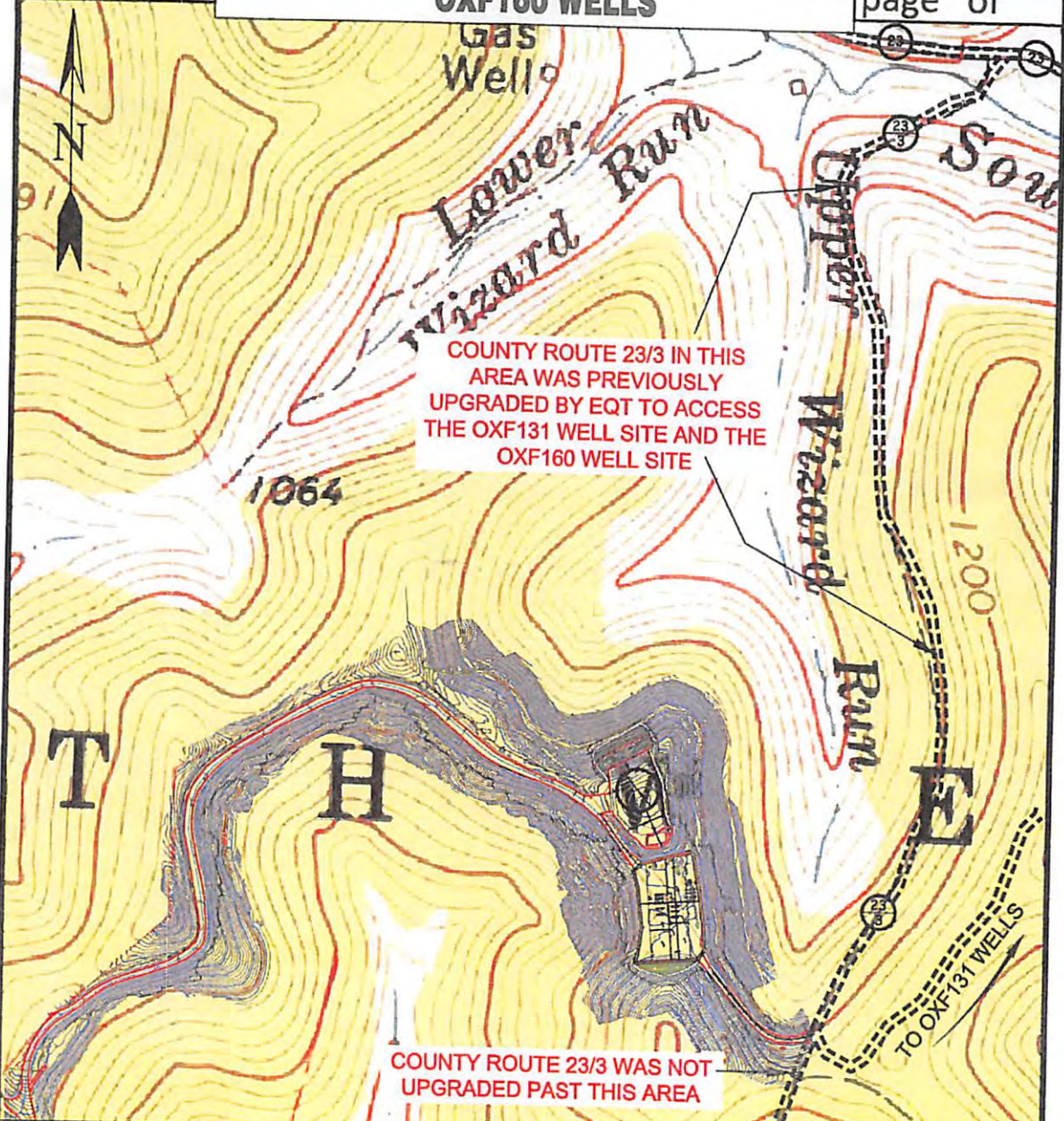
512 E. Dry Road
 Parkersburg, WV 26104
 304-428-0602
 Permit #SWF-1025 WV-0109400
 Approval #100833WV

RECEIVED
 Office of Oil and Gas

SEP 30 2016

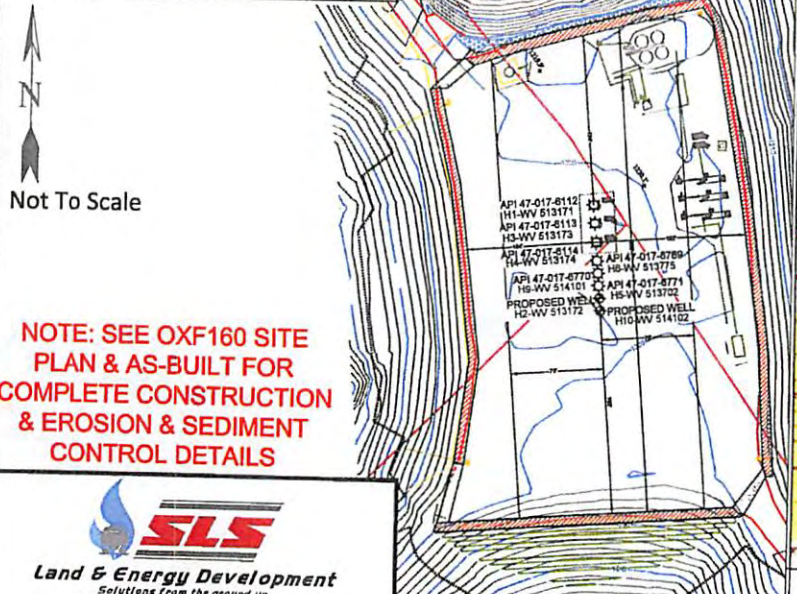
WV Department of
 Environmental Protection 03/24/2017

017-06789



DAC
2/2/17

Detail Sketch for Proposed OXF160 Wells



NOTE: SEE OXF-160 SITE PLAN & AS-BUILT FOR COMPLETE CONSTRUCTION & EROSION & SEDIMENT CONTROL DETAILS.

SLS
Land & Energy Development
Solutions From the ground up.
P.O. Box 150 & 12 Vardon Drive • Glenville, WV 26031 • (204) 462-5634
www.slsenergy.com

DRAWN BY K.D.W.	FILE NO. 7310	DATE 09-16-16	CADD FILE: OXF160REPLAN.dwg
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TOPO SECTIONS OF OXFORD 7.5' TOPO QUADRANGLE



03/24/2017



Where energy meets innovation.™

Site Specific Safety Plan

EQT OXF160 Pad


Oxford Quadrant

Doddridge County, WV

For Wells:

Date Prepared:

March 22, 2016



EQT Production
Permitting Supervisor
Title



WV Oil and Gas Inspector

Title

Date

Date

9-28-16

10/13/16
Date
Received
Office of Oil & Gas
OCT 27 2016

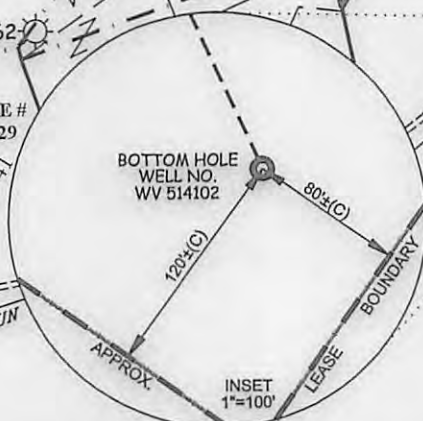
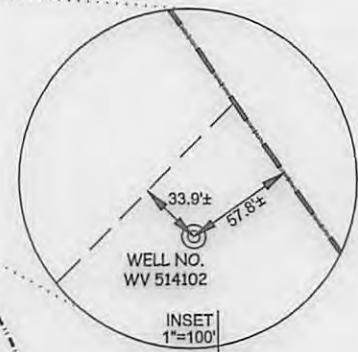
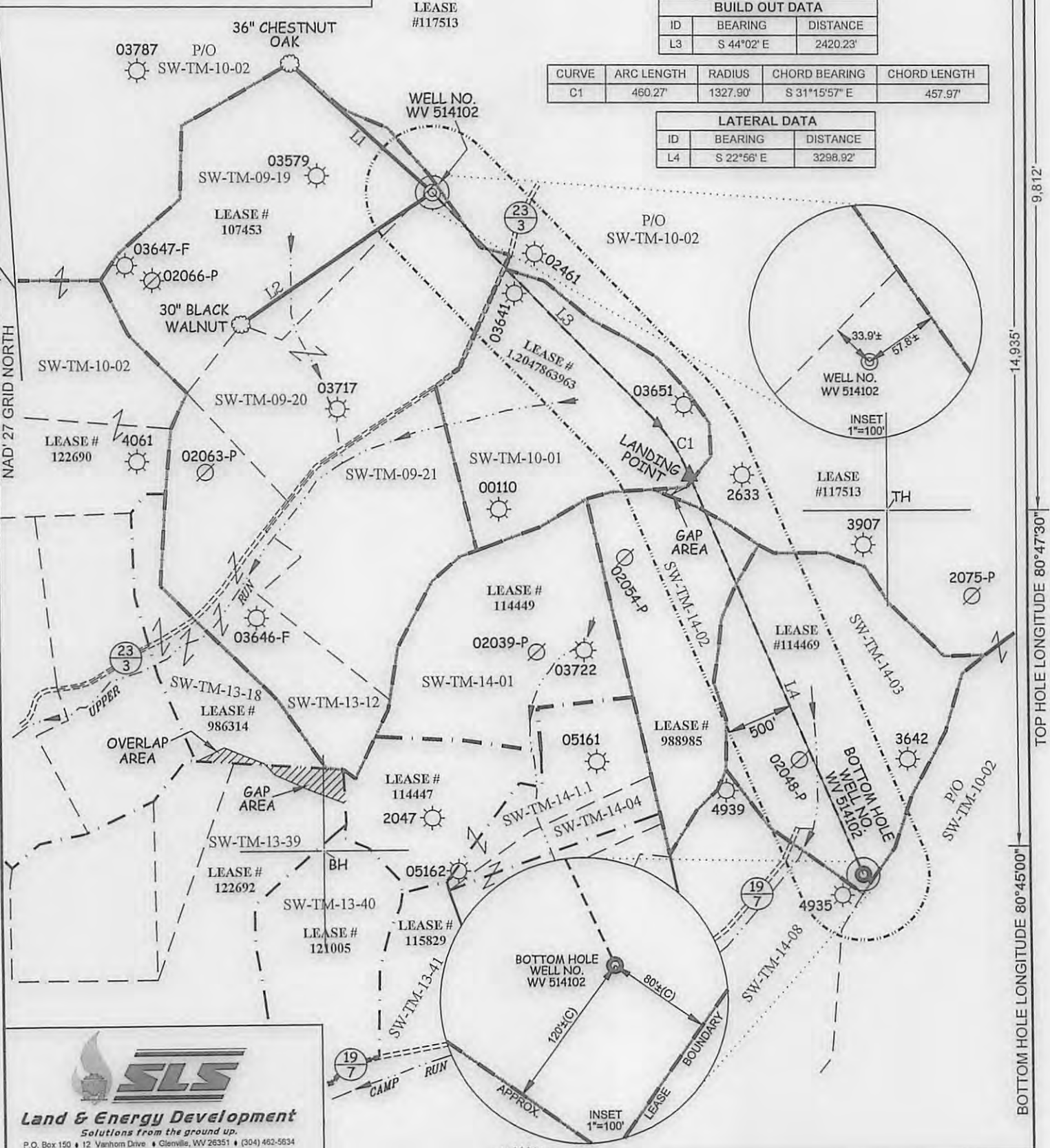
OXF160
WV 514102
EQT PRODUCTION COMPANY

WELL TIES		
ID	BEARING	DISTANCE
L1	N 47°43' W	1445.26'
L2	S 55°49' W	1752.65'

BUILD OUT DATA		
ID	BEARING	DISTANCE
L3	S 44°02' E	2420.23'

CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	460.27'	1327.90'	S 31°15'57" E	457.97'

LATERAL DATA		
ID	BEARING	DISTANCE
L4	S 22°56' E	3298.92'



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 www.slsurveys.com

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)	
NAD'27 S.P.C.(FT)	N. 250,840.85 E. 1,631,719.96
NAD'27 GEO.	LAT-(N) 39.181394 LONG-(W) 80.799191
NAD'83 UTM (M)	N. 4,336,935.14 E. 517,358.90
LANDING POINT	
NAD'27 S.P.C.(FT)	N. 248,709.46 E. 1,639,639.96
NAD'27 GEO.	LAT-(N) 39.175619 LONG-(W) 80.792310
NAD'83 UTM (M)	N. 4,336,295.59 E. 517,954.65
BOTTOM HOLE	
NAD'27 S.P.C.(FT)	N. 245,671.19 E. 1,634,925.19
NAD'27 GEO.	LAT-(N) 39.167329 LONG-(W) 80.787624
NAD'83 UTM (M)	N. 4,335,376.54 E. 518,361.64

VICTOR MOYERS
 LICENSED
 No. 849
 STATE OF
WEST VIRGINIA
 PROFESSIONAL SURVEYOR

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

LEGEND	
LEASE LINE	---
SURFACE LINE	- - - -
WELL LATERAL	— — — —
OFFSET LINE	— — — —
TIE LINE	— — — —
CREEK	~ ~ ~ ~
ROAD	— — — —
COUNTY ROUTE	— — — —
PROPOSED WELL	⊙
EXISTING WELL	⊙
PERMITTED WELL	⊙
SOUTH WEST DISTRICT TAX MAP—PARCEL	SW-00-00

SCALE 1" = 1000' FILE NO. 7310P514102R3
 DATE SEPTEMBER 16, 2016
 REVISED 09/29/16, 01/19/17 & 03/03/17
 OPERATORS WELL NO. WV 514102
 API WELL NO. 47 — 017 — 06789 HLA
 STATE COUNTY PERMIT

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

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT REX C. RAY
 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280
BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330

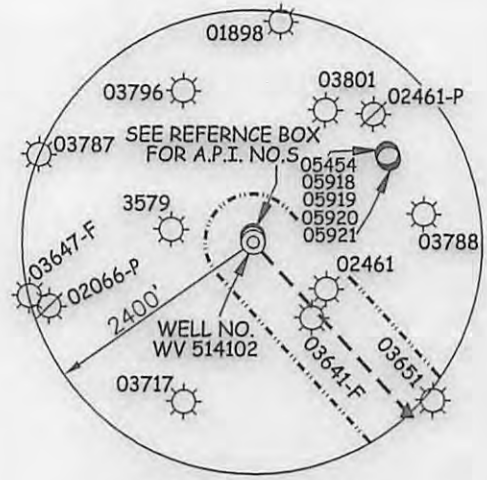
TOP HOLE LONGITUDE 80°47'30"
 BOTTOM HOLE LONGITUDE 80°45'00"
 COUNTY NAME
 PERMIT

03/24/2017

BOTTOM HOLE LATITUDE 39°12'30" 10,668'

OXF160
WV 514102
EQT PRODUCTION COMPANY

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
 NAD'27 S.P.C.(FT) N. 250,840.85 E. 1,631,719.96
 NAD'27 GEO. LAT-(N) 39.181394 LONG-(W) 80.799191
 NAD'83 UTM (M) N. 4,336,935.14 E. 517,358.90
LANDING POINT
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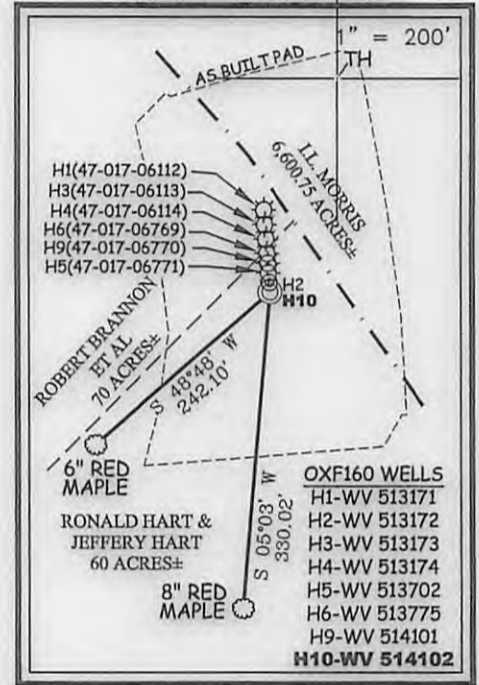
NOTES ON SURVEY

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
2. WELL SPOT CIRCLE & TOPO MARK SCALE IS 1"=2000'.

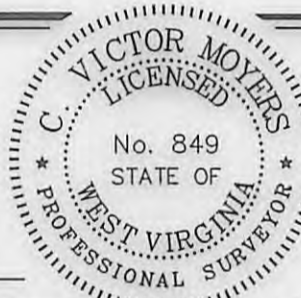
ROYALTY OWNERS		
WBM HEIRS PROPERTIES, LLC ET AL	1891.25 AC.±	LEASE NO. 117513
CAROLYN FARR TRUST	57.5 AC.±	LEASE NO. 1.2047863963
CARLTON MATHENY ET AL	44 AC.±	LEASE NO. 988985
TERM OIL AND GAS PRODUCTION AND DEVELOPMENT LLC	76 AC.±	LEASE NO. 114469

SW TM-09-19	ROBERT BRANNON ET AL	70 ACRES±
SW TM-09-20	RONALD HART & JEFFERY HART	60 ACRES±
SW TM-09-21	RONALD HART & JEFFERY HART	45 ACRES±
SW TM-10-01	MATTHEW COPELAND	57.5 ACRES±
SW TM-10-02	ILL. MORRIS	6,600.75 ACRES±
SW TM-13-12	RONALD HART & JEFFERY HART	46 ACRES±
SW TM-13-18	ROBERT BRANNON ET AL	25.1 ACRES±
SW TM-13-39	EDWARD & GINA BASSETT	41 ACRES±
SW TM-13-40	MARIAN ZORN	34.78 ACRES±
SW TM-13-41	WILLIAM ARMENTROUT ET AL	76 ACRES±
SW TM-14-01	MICHAEL & SUSAN ZORN	52.5 ACRES±
SW TM-14-1.1	MICHAEL & SUSAN ZORN	47.5 ACRES±
SW TM-14-02	WILLIAM ARMENTROUT ET AL	44.35 ACRES±
SW TM-14-03	JANICE McCORMACK	76 ACRES±
SW TM-14-04	WILLIAM ARMENTROUT ET AL	16.8 ACRES±
SW TM-14-08	CHARLES MUCHMORE ET AL (LIFE)	48.50 ACRES±

REFERENCES



BH



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

P.S. C. Victor Moyers
 849

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE SEPTEMBER 16, 20 16
 REVISED 09/29/16, 01/19/17 & 03/03/17
 OPERATORS WELL NO. WV 514102
 API WELL NO. 47-017-06789
 STATE WV COUNTY ODD PERMIT 03/24/2017

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 7310P514102R3
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE SEE NOTE 2

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

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION:
 PAD ELEVATION 1,220' WATERSHED UPPER RUN OF MIDDLE FORK OF SOUTH FORK HUGHES RIVER
 DISTRICT SOUTHWEST COUNTY DODDRIDGE QUADRANGLE OXFORD 7.5'
 SURFACE OWNER RONALD HART & JEFFERY HART ACREAGE 60±
 ROYALTY OWNER MONA R. CUMBERLEDGE ET AL ACREAGE 206±
 PROPOSED WORK:
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER
 PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS
 ESTIMATED DEPTH 6,638'

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT REX C. RAY
 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330

TOP HOLE LONGITUDE 80°47'30" BOTTOM HOLE LONGITUDE 80°45'00" COUNTY NAME PERMIT

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

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

See Attached

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: EQT Production Company
 By: Victoria Roark
 Its: Permitting Supervisor

WV Department of
 Environmental Protection
 Page 1 of 2

017-06789

WW-6A1 attachment

Operator's Well No. 514102

Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
107453	<u>Mona R. Cumberledge, et al (current royalty owner)</u>		**	
	S. E. Gaston, et al (original lessor)	A. D. Wells		LB 22/420
	A. D. Wells	Fisher Oil Company/O.D. Harrington		LB 24/16
	Fisher Oil Company/O.D. Harrington	The Philadelphia Company of WV		LB 24/64
	The Philadelphia Company of WV	Pittsburgh & West Virginia Gas Company		45/102
	The Philadelphia Company of WV	Pittsburgh & West Virginia Gas Company		LB 32/253
	Pittsburgh & West Virginia Gas Company	Equitable Gas Company		DB 121/257
	Equitable Gas Company	Equitrans, Inc		LB 154/475
	Equitrans, Inc	Equitrans, L.P.		329/645
	Equitrans, L.P.	Equitable Production-Eastern States, Inc		LB 192/19
	Equitable Production-Eastern States, Inc	EQT Production Company		DB 281/346
117513	<u>WBM Heirs Properties LLC, et al (current royalty owner)</u>			
	William Brent Maxwell, et al	Pittsburgh & West Virginia Gas Co.		LB37/48
	Pittsburgh & West Virginia Gas Co.	Equitable Gas Co.		DB121/257
	Equitable Gas Company	Equitrans, Inc.		DB154/475
	Equitrans, Inc	Equitrans, L.P.		329/645
	Equitrans, L.P.	Equitable Production-Eastern States, Inc		LB 192/19
	Equitable Production-Eastern States, Inc	EQT Production Company		DB 281/346
1.2047863963	<u>Carolyn Farr Trust (current royalty owner)</u>			
	Antero Resources Corporation	EQT Production Company		371/584
988985	<u>Carlton Matheny, et al (current royalty owner)</u>			
	Carlton M. Matheny, et ux (original lessor)	EQT Production Company		239/185
114469	<u>Term Oil and Gas Production and Development LLC (current royalty owner)</u>			
	Mary V. Gaston, et vir. (original lessor)	The Philadelphia Company of WV		LB33/26
	The Philadelphia Company of WV	Pittsburgh & West Virginia Gas Company		LB 32/253
	Pittsburgh & West Virginia Gas Company	Equitable Gas Company		DB 121/257
	Equitable Gas Company	Equitrans, Inc		LB 154/475
	Equitrans, Inc	Equitrans, L.P.		329/645
	Equitrans, L.P.	Equitable Production-Eastern States, Inc		LB 192/19
	Equitable Production-Eastern States, Inc	EQT Production Company		DB 281/346

** We will pay a minimum one-eighth of the total amount paid to or received by or allowed to the owner of the working interest at the wellhead for the oil or gas so extracted, produced, or marketed before deducting the amount to be paid to or set aside for the owner of the oil or gas in place, on all such oil or gas to be extracted, produced, or marketed from the well.

03/24/2017

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

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

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

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.**

RECEIVED
Office of Oil and Gas
SEP 30 2016
03/24/2017
WV Department of
Environmental Protection

Time Limits and Methods for Filing Comments.

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

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

Comment Requirements

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

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

Permit Denial or Condition

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

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

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

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

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Office of Oil and Gas
SEP 30 2016
03/24/2017
OFFICE OF
ENERGY PRODUCTION

WW-6A
(8-13)

API NO. 47- 017 -
OPERATOR WELL NO. 514102
Well Pad Name: OXF160

Notice is hereby given by:

Well Operator: EQT Production Company
Telephone: 304-848-0076
Email: vroark@eqt.com

Address: 115 Professional Place PO Box 280
Bridgeport WV 26330
Facsimile: 304-848-0041

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.

Wu jh



Subscribed and sworn before me this 28 day of September, 2016.

Rebecca L Wanstreet Notary Public

My Commission Expires 4-7-2020

4701708788

RECEIVED
Office of Oil and Gas
SEP 30 2016
03/24/2017
WV Department of
Environmental Protection



September 27, 2016

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

Re: OXF160 well pad, well number 514102
Southwest District, Doddridge County

4701706709

Dear Mr. Martin,

EQT Production Company is submitting an application for a new well work permit for the above well number. Upon information and belief, Operator's lease and/ or other real property rights permit it to conduct drilling operations for the subject well in the location shown on the plat, including under any public roads that the well lateral crosses.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Vicki Roark'.

Vicki Roark
Permitting Supervisor-WV

RECEIVED
Office of Oil and Gas
SEP 30 2016

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

Date of Notice Certification: 9/29/16

API No. 47- 017 -
Operator's Well No. 514102
Well Pad Name: OXF160

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>WV</u>	UTM NAD 83	Easting:	<u>517358.9</u>
County:	<u>Doddridge</u>		Northing:	<u>4336935.14</u>
District:	<u>Southwest</u>	Public Road Access:	<u>WV-18</u>	
Quadrangle:	<u>Oxford</u>	Generally used farm name:	<u>Ronald Hart and Jeffery Hart</u>	
Watershed:	<u>Upper Run of Middle Fork of South Fork Hughes River</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 type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input checked="" 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 type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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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.

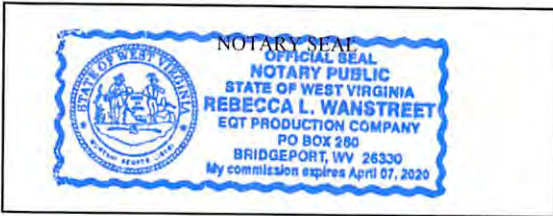
Office of Oil and Gas
SEP 30 2016
WV Department of Environmental Protection
03/24/2017

Certification of Notice is hereby given:

THEREFORE, I [Signature], 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: EQT Production Company
By: Victoria Roark
Its: Permitting Supervisor
Telephone: 304-848-0076

Address: 115 Professional Place PO Box 280
Bridgeport WV 26330
Facsimile: 304-848-0041
Email: vroark@eqt.com



Subscribed and sworn before me this 28 day of September 2016.

Rebecca L. Wanstreet Notary Public

My Commission Expires 4-7-2020

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.

470270078A
RECEIVED
Office of Oil and Gas
Office of Oil and Gas
SEP 30 2016
SEP 30 2016
WV Department of Environmental Protection
03/24/2017

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: 9/29/16 Date Permit Application Filed: 9/29/16

Notice of:

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

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

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

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

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

SURFACE OWNER(s)

Name: See Attached
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: See Attached
Address: _____

Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: See Attached
Address: _____

COAL OWNER OR LESSEE

Name: See Attached
Address: _____

COAL OPERATOR

Name: _____
Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: See Attached
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
Address: _____

*Please attach additional forms if necessary.

RECEIVED
Department of Oil and Gas
SEP 30 2016
03/24/2017
DEPARTMENT OF
Environmental Protection

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

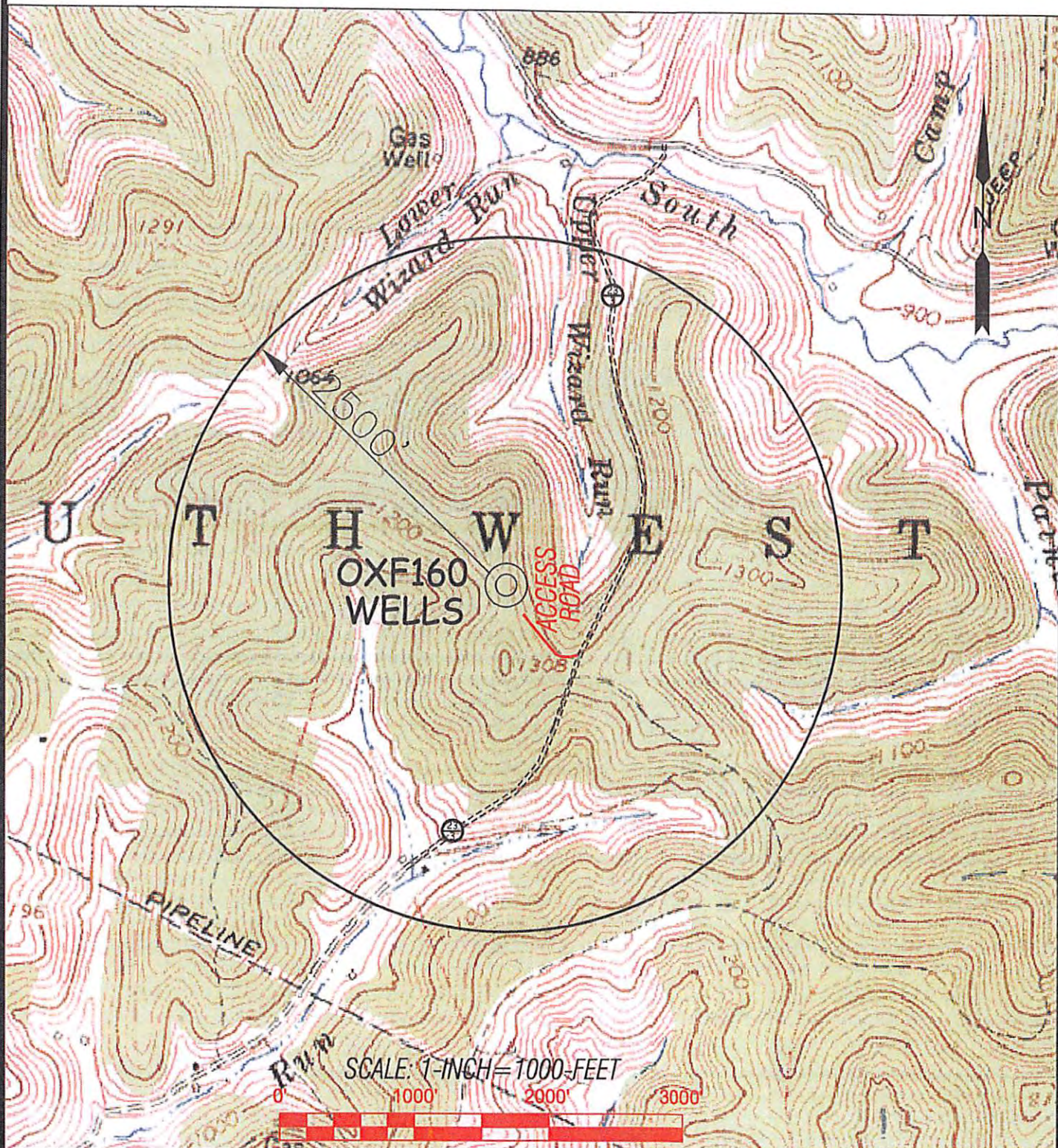
Well Location Restrictions

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

03/24/2017

Environmental Protection

S.E. GASTON LEASE OXF 160 WELL PAD



SLS
Land & Energy Development
Solutions from the ground up.
P.O. Box 150 • 12 Veterans Drive • Chaplin, WV 26031 • 304-462-1634
www.slsinc.com

DRAWN BY: K.D.W. | FILE NO.: 7310 | DATE: 04/07/16 | CADD FILE: 7310WSV513171.dwg

TOPO SECTION OF:
OXFORD, WV 7.5' QUAD.

COUNTY	DISTRICT	TAX MAP-PARCEL NO.
DODDRIDGE	SOUTHWEST	9 - 19

OPERATOR:
EQT PRODUCTION COMPANY
115 PROFESSIONAL PLACE
P.O. BOX 280
BRIDGEPORT, WV 26330

03/24/2017

Surface Owner(s)

Robert Brannon et al
881 Haystack Ln.
West Union WV 26456

Ronald Hart
335 South 22nd Street
Clarksburg WV 26301

Jeffery Hart
12913 Alton Square
#220
Herndon VA 20170

I.L. Morris
P.O. Box 397
Glennville WV 26351

4701700709

7016 1370 0001 6431 5227

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee	\$
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postage
\$
Total Po: \$

Sent To
Street and
City, State

Postmark Here
BRIDGEPORT
SEP 29 2016

Robert Brannon et al
881 Haystack Ln.
West Union WV 26456
OXF160 Permit App and Planned Operation

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7016 1370 0001 6431 5224

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
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For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee	\$
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

Postage
\$
Total Po: \$

Sent To
Street and
City, State

Postmark Here
BRIDGEPORT MPO
SEP 29 2016

Ronald Hart
335 South 22nd Street
Clarksburg WV 26301
OXF160 Permit App and Planned Operation

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7016 1370 0001 6431 5241

U.S. Postal Service™
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Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee	\$
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$
<input type="checkbox"/> Return Receipt (electronic)	\$
<input type="checkbox"/> Certified Mail Restricted Delivery	\$
<input type="checkbox"/> Adult Signature Required	\$
<input type="checkbox"/> Adult Signature Restricted Delivery	\$

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WV Department of Environment

Surface Owners (Road or other Disturbance)

Robert Brannon et al
881 Haystack Ln.
West Union WV 26456

Ronald Hart
335 South 22nd Street
Clarksburg WV 26301

Jeffery Hart
12913 Alton Square
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03/24/2017

Environmental Department

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A

The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions

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.

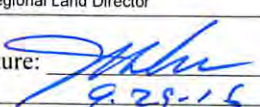
Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided*, That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, John Damato, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	<u>WV</u>	UTM NAD 83 Easting:	<u>517358.9</u>
County:	<u>Doddridge</u>	UTM NAD 83 Northing:	<u>4336935.14</u>
District:	<u>Southwest</u>	Public Road Access:	<u>WW-18</u>
Quadrangle:	<u>Oxford</u>	Generally used farm name:	<u>Ronald Hart and Jeffery Hart</u>
Watershed:	<u>Upper Run of Middle Fork of South Fork Hughes River</u>		

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

<p>*Please check the box that applies</p> <p><input type="checkbox"/> SURFACE OWNER</p> <p><input type="checkbox"/> SURFACE OWNER (Road and/or Other Disturbance)</p> <p><input type="checkbox"/> SURFACE OWNER (Impoundments/Pits)</p> <p><input checked="" type="checkbox"/> COAL OWNER OR LESSEE</p> <p><input type="checkbox"/> COAL OPERATOR</p> <p><input type="checkbox"/> WATER PURVEYOR</p> <p><input type="checkbox"/> OPERATOR OF ANY NATURAL GAS STORAGE FIELD</p>	<p>FOR EXECUTION BY A NATURAL PERSON</p> <p>Signature: _____</p> <p>Print Name: _____</p> <p>Date: _____</p>
	<p>FOR EXECUTION BY A CORPORATION, ETC.</p> <p>Company: <u>E.T. Blue Grass LLC</u></p> <p>By: <u>John Damato</u></p> <p>Its: <u>Regional Land Director</u></p> <p>Signature: <u></u></p> <p>Date: <u>9.29.15</u></p>

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.

SEP 30 2015
WV Department of Environmental Protection
03/24/2017

Coal Owners:

WBM Heirs Properties LLC
PO Box 659
Wichita Falls TX 76307

I.L. Morris
PO Box 397
Glenville WV 26351

H3 LLC
1483 Johns Creek Road
Milton WV 25541

E.T. Blue Grass LLC
625 Liberty Ave
Suite 1700
Pittsburgh PA 15222

Ed Broome, Inc.
4622 WV 5E
Glenville WV 26351

Deborah Ann Cox
22 Bates Rd. PMB133
Mashpee MA 02649

Eleanor F. Delawder
2153 Iveywood St.
The Villages FL 32163

Patrick Michael Wright
624 South 7th Street
Clarksburg WV 26301

S.J.J. Leggett
1010 N. North Street
Washington CH OH 43160

Elizabeth Ann Guido
1364 Locust Ave.
Fairmont WV 26554

Brenda Jo Fulton
409 Dodge Ave
Williamstown WV 26187

Carolyn Sue Gaston
1231 Bellaire St.
Fairmont WV 26554

Beverlee Ann Grose
194 Welton Way
Mooresville NC 28117

Jennifer L. Powers
71 Lincoln St.
Buckhannon WV 26201

Jeffrey Scott Anderson
1359 Old River Rd.
Williamstown WV 26187

Timothy C Phillips
PO Box 12
West Union WV 26456

Kimberly Kay Davis
700 Caroline Ave
Williamstown WV 26187

Patrick Dean Leggett
1625 Stonehenge Rd.
Charleston WV 25314

Melanie K. Dienhart
7275 Iverson Place
Paso Robles CA 93446

Eric Thomas Anderson
Rt. 2 Box 192-V
Jane Lew WV 26378

Patricia Susan Wright
842 Verdun St.
Clarksburg WV 26301

Margaret E. Gress
1108 Wylie Ridge Rd
New Cumberland WV 26047

Mona R Cumberledge
125 Ash Lane
Sistersville WV 26175

Libby K Straw
245 S Prospect St. Apt 205
Ravenna OH 44266

Bernard Keith Leggett
19 Beverly Circle
Fairmont WV 26554

Randall Leggett
419 20th Street
Niceville FL 32578

Janice K Snider
PO Box 551
Kingwood WV 26357

Coal Owners:

Freda B Jones ✓
611 31st Street
Vienna WV 26105

Kelleigh D Leggett ✓
310 Wynwood Dr.
Willow Street PA 17584

Zadock Leggett ✓
310 Wynwood Dr.
Willow Street PA 17584

Lorelei F Phillips ✓
PO Box 12
West Union WV 26456

470 1703233

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Surface Owner(s)

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335 South 22nd Street
Clarksburg WV 26301

Jeffery Hart
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City, State

Ronald Hart
335 South 22nd Street
Clarksburg WV 26301

OXF160 Permit App and Planned Operation

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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12913 Alton Square
#220
Herndon VA 20170

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P.O. Box 397
Glenville WV 26351

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03/24/2017

Surface Owners (Road or other Disturbance)

Robert Brannon et al
881 Haystack Ln.
West Union WV 26456

Ronald Hart
335 South 22nd Street
Clarksburg WV 26301

Jeffery Hart
12913 Alton Square
#220
Herndon VA 20170

I.L. Morris
P.O. Box 397
Glenville WV 26351

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881 Haystack Ln.
West Union WV 26456

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Herndon VA 20170

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Ronald Hart
335 South 22nd Street
Clarksburg WV 26301

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<input type="checkbox"/> Adult Signature Restricted Delivery	\$

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P.O. Box 397
Glenville WV 26351

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03/24/2017

Surface Owners of Tank Site
Robert Brannon et al
881 Haystack Ln.
West Union WV 26456

Ronald Hart
335 South 22nd Street
Clarksburg WV 26301

Jeffery Hart
12913 Alton Square
#220
Herndon VA 20170

I.L. Morris
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Glennville WV 26351

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Herndon VA 20170
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03/24/2017



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

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

Earl Ray Tomblin
Governor

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

Revised August 24, 2016

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

4709705780

Subject: DOH Permit for the OXF160 Well Site, Doddridge County

OXF 160H2 #513172
OXF 160H9 #514101

OXF 160H5 #513702
OXF 160H6 #513755

OXF 160H10 #514102

Dear Mr. Martin,

This well site will be accessed from Permit # 04-2012-0308 applied for by EQT Production Company for access to the State Road for a well pad located off of Doddridge County Route 23/3 SLS.

The operator has signed a STATEWIDE 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

Cc: Nick Bumgardner
EQT Production Company
CH, OM, D-4
File

RECEIVED
Office of Oil and Gas
SEP 30 2016

WV Department of Environmental Protection
03/24/2017

Anticipated Frac Additives

Chemical Names and CAS numbers

<u>Material</u>	<u>Ingredient</u>	<u>CAS Number</u>
Water		
Sand	Hydrotreated light petroleum distillate	14808-60-7
	Tributyl tetradecyl phosphonium chloride	64742-47-8
Friction Reducer	Ammonium chloride	81741-28-8
Biocide	Hydrochloric Acid	12125-02-9
Scale Inhibitor	Propargyl Alcohol	7647-01-0
15% Hydrochloric Acid	Methanol	107-19-7
Corrosion Inhibitor	Guar Gum	67-56-1
Corrosion Inhibitor	Sodium Persulfate	9000-30-0
Gelling Agent	Potassium Carbonate	7775-27-1
Oxidizing Breaker		584-08-7
Buffering Agent		

RECEIVED
Office of Oil and Gas
SEP 30 2016
Department of
Environmental Protection
03/24/2017

4701706789

**WVDEP OOG
ACCEPTED AS-BUILT**

WJ 4 / 28 / 2016

PROJECT INFORMATION

PROJECT NAME: OXF-160 SITE PLAN MODIFICATION
 TAX PARCELS: 19, 20 & 02
 SOUTHWEST DISTRICT
 MAP 9 & 10

SURFACE OWNER:
 ROBERT BRANNON, ET AL
 SOUTHWEST DISTRICT
 DODDRIDGE COUNTY, WV
 PROPERTY AREA: 70± ACRES

JEFFERY HART & RONALD L. HART
 SOUTHWEST DISTRICT
 DODDRIDGE COUNTY, WV
 PROPERTY AREA: 60± ACRES

DEE MOORE:
 SOUTHWEST DISTRICT
 DODDRIDGE COUNTY, WV
 PROPERTY AREA: 6600.75± ACRES

ROYALTY OWNERS:
 MONA R. CUMBERLEDGE, ET AL
 SOUTHWEST DISTRICT
 DODDRIDGE COUNTY, WV
 PROPERTY AREA: 206± ACRES

W.M. HEISS PROPERTIES, LLC
 SOUTHWEST DISTRICT
 DODDRIDGE COUNTY, WV
 PROPERTY AREA: 1891.25± ACRES

SITE LOCATION:
 THE OXF-160 SITE IS LOCATED ON A POINT SOUTHWEST OF CO. RT. 23/3, APPROXIMATELY 0.80 MILES SOUTHWEST OF CO. RT. 23/3 AND CO. RT. 19/11 INTERSECTION.

OXF-160 LOCATION COORDINATES

ENTRANCE:
 LATITUDE: 39180316 LONGITUDE: -80797003 (NAD 83)
 LATITUDE: 43368064 LONGITUDE: 5175332 (UTM NAD 83)

WELL PAD:
 LATITUDE: 39181577 LONGITUDE: -80799006 (NAD 83)
 LATITUDE: 43369459 LONGITUDE: 5173559 (UTM NAD 83)

40K TANK PAD:
 LATITUDE: 39182793 LONGITUDE: -80799490 (NAD 83)
 LATITUDE: 43370797 LONGITUDE: 5171178 (UTM NAD 83)

SITE DISTURBANCE COMPUTATIONS

ORIGINAL LOD ACREAGE: 16.9± ACRES

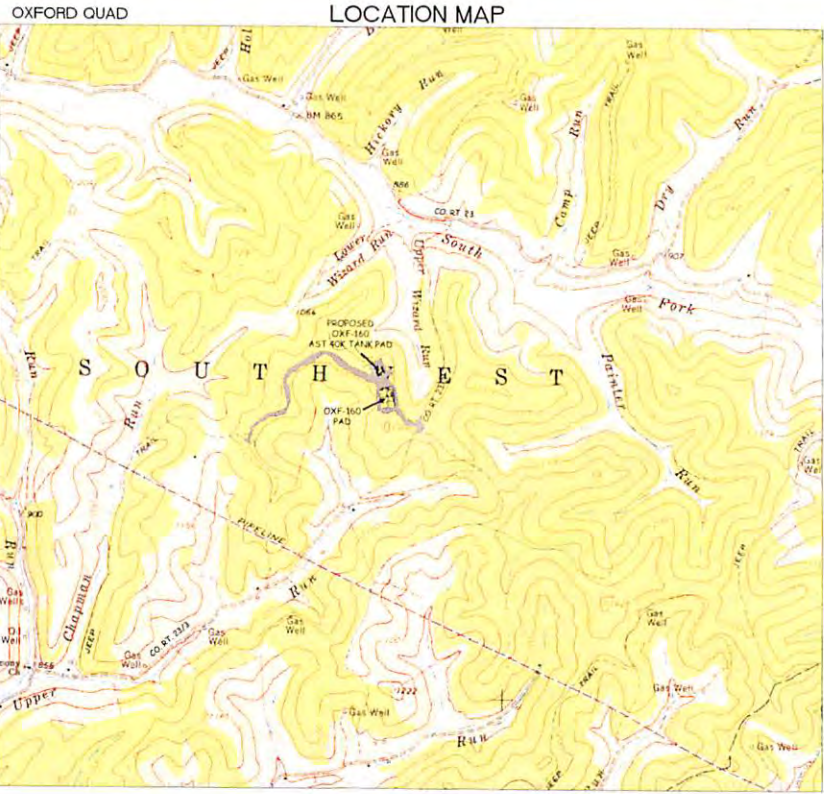
GENERAL DESCRIPTION

THE OXF-160 WELL PAD AND ASSOCIATED IMPONEMENT ARE CONSTRUCTED. THE ASSOCIATED FIT WILL BE CONSTRUCTED. ALL THREE STRUCTURES WILL AID IN THE DEVELOPMENT OF ADDITIONAL MARCELLUS SHALE GAS WELLS.

MISS Utility of West Virginia
 1-800-245-4848
 West Virginia State Law
 (Section XIV: Chapter 24-C)
 Requires that you call two
 business days before you dig in
 the state of West Virginia.
 IT'S THE LAW!!

**OXF-160 SITE PLAN MODIFICATION
 EQT PRODUCTION COMPANY**

EXISTING WELL #s API NO. 47-017-6112, 47-017-6113 & 47-017-6114
PROPOSED WELL #s H2 WV-513172, H5 WV-513702, H6 WV-513775, & H9 WV-514101
 SITUATE ON THE WATERS OF UPPER RUN OF MIDDLE FORK OF SOUTH FORK OF HUGHES RIVER WATERSHED IN SOUTHWEST DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA.



SHEET INDEX

- 1- COVER SHEET
- 2- CONSTRUCTION NOTES
- 3- INDEX SHEET
- 4- ACCESS ROAD AND PAD
- 5- ACCESS ROAD AND PIT
- 6- ACCESS ROAD
- 7- TANK PAD & WELL PAD
- 8- WELL PAD & ACCESS ROAD
- 9- ACCESS ROAD PROFILE
- 10- TANK PAD PROFILE
- 11- CONSTRUCTION DETAILS
- 12- CONSTRUCTION DETAILS
- 13- CONSTRUCTION DETAILS

LEGEND

- PROPOSED COMPOST FILTER SOCK
- EX ROAD EDGE OF GRAVEL/DIRT
- EX ROAD EDGE OF PAVEMENT
- EX ROAD CENTERLINE
- EX CYPRESTINE
- EX CULVERT
- EX SAFETY FENCE
- EX GATE
- EX OVERHEAD UTILITY
- EX OVERHEAD UTILITY R/W
- EX POWER POLE
- EX TELEPHONE LINE
- EX GASLINE
- EX GASLINE R/W
- PROPOSED RIP RAP
- EX RIP RAP
- EX BRUSH PILE
- EX DELINEATED STREAM
- EX STRUCTURE
- EX PIPELINE MARKER
- EX FOOTPRINT
- EDGE OF GRAVEL PAD
- EDGE OF BEEM
- EX SILVER SILT FENCE
- EX REINFORCED SILT FENCE
- EX SW
- GRAVEL
- ORIGINAL GROUND 2' CONTOURS
- AS BUILT 2' CONTOURS
- EXISTING WELL LOCATIONS
- PROPOSED WELL LOCATIONS
- SPOT ELEVATIONS
- MATHELINE

Handwritten notes:
 OCT 29 2016
 10/13/16

BY	DATE	REVISION	DESCRIPTION
W.A.W.	4/28/16	1	PROPERTY OWNER LABELS
W.A.W.	4/28/16	2	ROAD PROFILE AND DAMPS ADDED

EQT
Where energy meets innovation

SLS
Soil Development
Lead Service for the Energy Industry

THIS DOCUMENT WAS PREPARED BY SMITH LAND SURVEYING, INC. FOR EQT

OXF-160 SITE PLAN MODIFICATION

THIS DOCUMENT WAS PREPARED BY SMITH LAND SURVEYING, INC. FOR EQT PRODUCTION COMPANY

DATE: 03-30-2016
 SCALE: 1" = 1000'
 DESIGNED BY: W.A.W.
 FILE NO: 8210
 SHEET 1 OF 13

4701706789

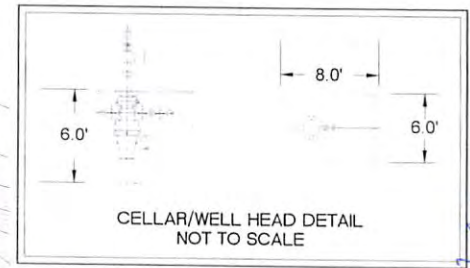


**WVDEP OOG
ACCEPTED AS-BUILT**

W.A. 4/28/2016

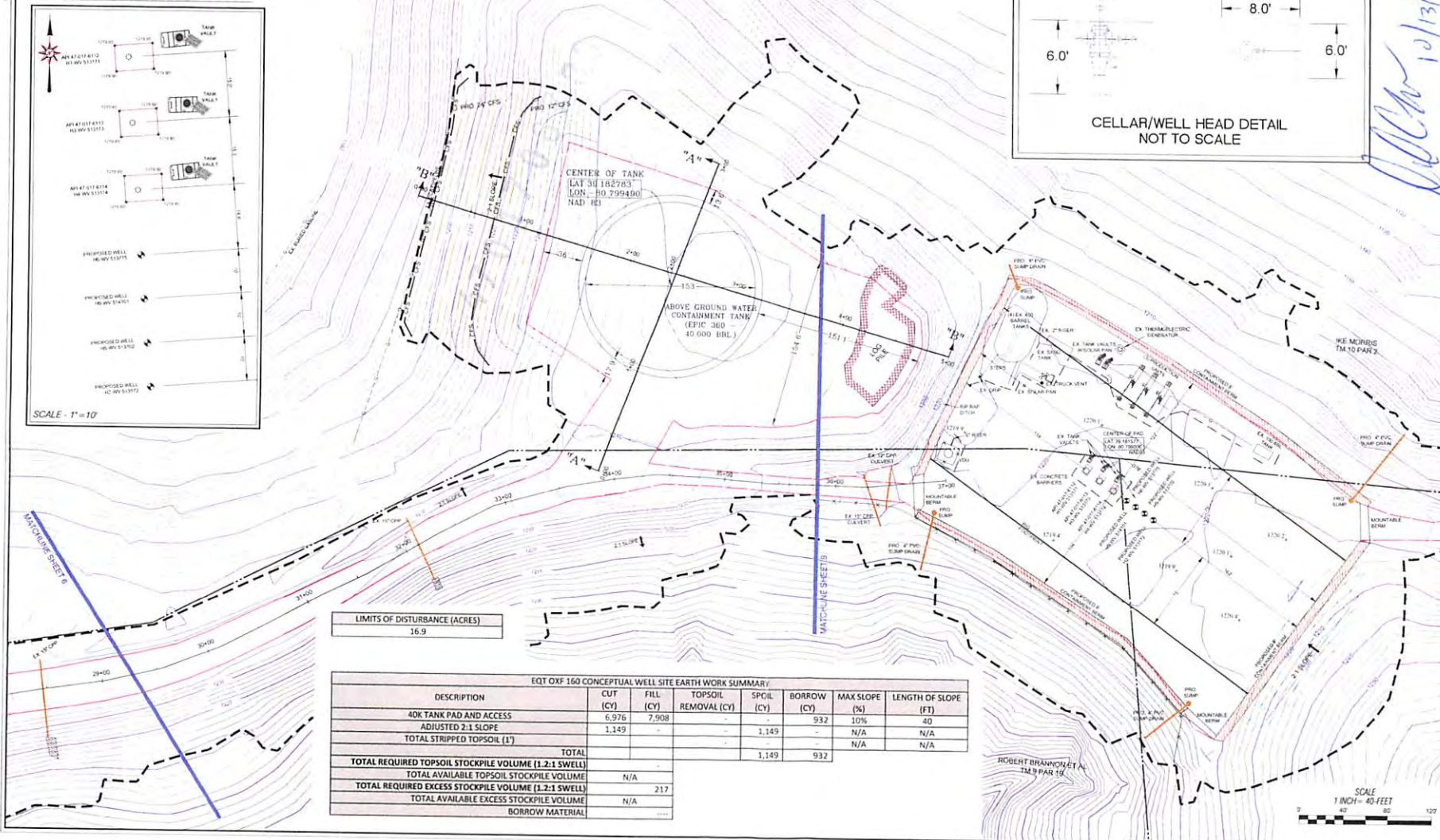
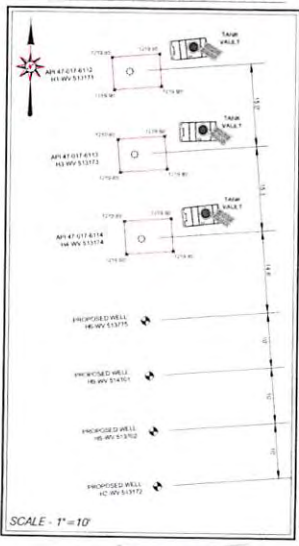
GRID NORTH AND SURVEYED ELEVATIONS SHOWN HEREON WERE ESTABLISHED BY DGPS SURVEY DATA

OXF-160 SITE PLAN MODIFICATION EQT PRODUCTION COMPANY



W.A. 10/13/16

WELL ELEVATION DETAIL



LIMITS OF DISTURBANCE (ACRES)
16.9

EQT OXF 160 CONCEPTUAL WELL SITE EARTH WORK SUMMARY						
DESCRIPTION	CUT (CY)	FILL (CY)	TOPSOIL REMOVAL (CY)	SPOIL (CY)	BORROW (CY)	LENGTH OF SLOPE (FT)
40K TANK PAD AND ACCESS	6,976	7,908	-	-	932	40
ADJUSTED 2:1 SLOPE	1,149	-	-	1,149	-	N/A
TOTAL STRIPPED TOPSOIL (1')	-	-	-	1,149	932	N/A
TOTAL REQUIRED TOPSOIL STOCKPILE VOLUME (1.2:1 SWELL)	-	-	-	-	-	-
TOTAL AVAILABLE TOPSOIL STOCKPILE VOLUME	-	-	-	-	-	-
TOTAL REQUIRED EXCESS STOCKPILE VOLUME (1.2:1 SWELL)	-	-	-	-	-	-
TOTAL AVAILABLE EXCESS STOCKPILE VOLUME	-	-	-	-	-	-
BORROW MATERIAL	-	-	-	-	-	-



DATE	03/30/2016
SCALE	1" = 40'
DESIGNED BY	W.A.
FILE NO	0210
SHEET	7 OF 13

SLS Land & Survey Development
 Land & Survey Development
 1000 1st Street, Suite 100
 Charleston, WV 25301
 Phone: 304.762.1234
 Fax: 304.762.1235
 Email: info@slsurvey.com

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 Where energy meets innovation

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