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west virginia department of environmental protection

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

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

Tuesday, June 13, 2017  
WELL WORK PERMIT  
Horizontal 6A / New Drill

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

Re: Permit approval for GLO 168 H16  
47-049-02440-00-00

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: GLO 168 H16  
Farm Name: EQUITRANS LP  
U.S. WELL NUMBER: 47-049-02440-00-00  
Horizontal 6A / New Drill  
Date Issued: 6/13/2017

Promoting a healthy environment.

06/16/2017

# PERMIT CONDITIONS 4704902460

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

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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 704902440

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.

4704902440

API NO. 47- 49  
OPERATOR WELL NO. GLO168H16  
Well Pad Name: GLO168

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

1) Well Operator: EQT Production Company 306686 Marion Manning Glover Gap  
Operator ID County District Quadrangle

2) Operator's Well Number: GLO168H16 Well Pad Name: GLO168

3) Farm Name/Surface Owner: Equitrans LP Public Road Access: C/O Rt 714

4) Elevation, current ground: 1357 Elevation, proposed post-construction: 1316

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

(b) If Gas Shallow  Deep   
Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Marcellus, 7722, 53', 2593 PSI

*SDW  
3/2/2017*

8) Proposed Total Vertical Depth: 7722

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 12565

11) Proposed Horizontal Leg Length: 4384

12) Approximate Fresh Water Strata Depths: 369

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

14) Approximate Saltwater Depths: 1850

15) Approximate Coal Seam Depths: 513, 667, 935, 1032

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: Harrison County Mine  
Depth: 1032'  
Seam: Pittsburgh  
Owner: Murray Energy Corporation

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	40	40	60 R <sup>3</sup> / CTS
Fresh Water	13 3/8	New	J-55	54.5	449	449	417 R <sup>3</sup> / CTS
Coal							
Intermediate	9 5/8	New	A-500	40	3090	3090	1225 R <sup>3</sup> / CTS
Production	5 1/2	New	P-110	20	19141	19141	507 above top producing zone
Tubing	2 3/8		J-55	4.7		May not be run, if run set 10' above top perf or 10' section	
Liners							

SDW  
6/19/2017

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	1102	Class A	1.18
Fresh Water	13 3/8	17 1/2	.38	2700	2160	See Variance	1.19
Coal							
Intermediate	9 5/8	12 3/8	.395	3950	3160	Class A	1.07
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:				

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 6150'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

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, gelling agent, gel breaker, 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 200,000 barrels of water per stage. Sand sizes vary from 100 mesh to 20/40 mesh. Average approximately 200,000 pounds of sand per stage.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 66.70

22) Area to be disturbed for well pad only, less access road (acres): 6.40

23) Describe centralizer placement for each casing string:

- Surface: Bow spring centralizers – One at the shoe and one spaced every 500’.
- Intermediate: Bow spring centralizers– One cent at the shoe and one spaced every 500’.
- Production: One solid body cent 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, .25% Flake Loss Circulation Material (LCM) is used to combat the loss of the cement slurry to a thief zone.  
 Intermediate (Type 1 Cement): 0-3% Calcium Chloride. Salt is used in shallow, low temperature formations to speed the setting of cement slurries. 0.25% flake. Loss Circulation Material (LCM) is used to combat the loss of whole drilling fluid or cement slurry (not filtrate) to a thief zone.  
 Production:  
 Lead (Type H 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 (Type 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.

Office of Oil and Gas

FEB 24 2017

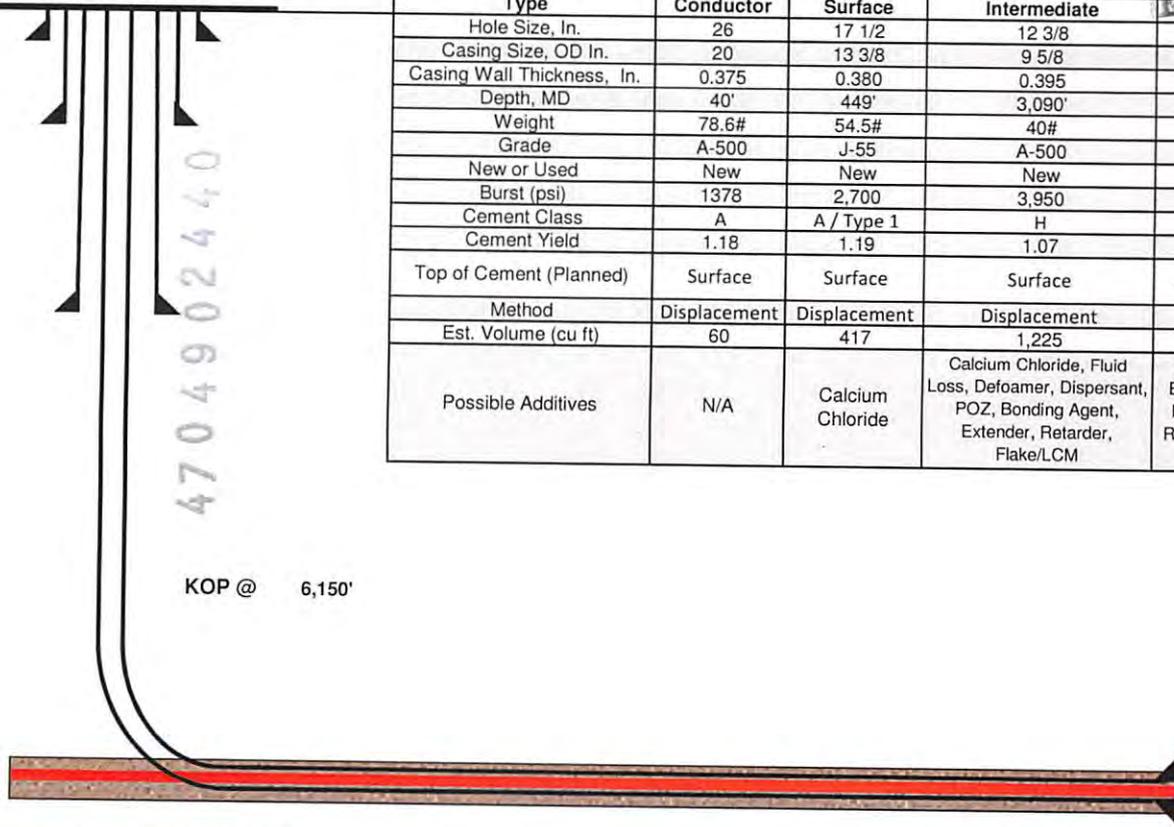
\*Note: Attach additional sheets as needed.

**Well GLO168H16**  
**EQT Production**  
**Glover Gap Quad**  
**Marion County, WV**

Azimuth 337  
 Vertical Section 4509

Note: Diagram is not to scale

Formations	Top TVD	Base TVD
Conductor	40	
Base Fresh Water	369	
Surface Casing	449	
Maxton	2248	2327
Big Lime	2382	2495
Big Injun	2542	2660
Weir	2784	2896
Gantz	2990	3040
Intermediate Casing	3090	
Fifty foot	3128	3157
Thirty foot	3212	3235
Gordon	3269	3310
Forth Sand	3337	3392
Bayard	3420	3462
Warren	3904	3994
Speechley	4086	4170
Balltown A	4459	4888
Riley	4950	5019
Benson	5542	5593
Alexander	5944	6014
Sonyea	7237	7392
Middlesex	7392	7448
Genesee	7448	7536
Geneseo	7536	7570
Tully	7570	7596
Hamilton	7596	7696
Marcellus	7696	7749
Production Casing	12565	MD
Onondaga	7749	



Casing and Cementing				Deepest Fresh Water: 369'
Type	Conductor	Surface	Intermediate	Production
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	40'	449'	3,090'	12,565'
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	H	A / H
Cement Yield	1.18	1.19	1.07	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)	60	417	1,225	1,377
Possible Additives	N/A	Calcium Chloride	Calcium Chloride, Fluid Loss, Defoamer, Dispersant, POZ, Bonding Agent, Extender, Retarder, Flake/LCM	Calcium Carbonate, Fluid Loss, Extender, Dispersant, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent

Land curve @ 7,722' TVD  
 8,181' MD

Est. TD @ 7,722' TVD  
 12,565' MD

4,384' Lateral

**Proposed Well Work:**

- Drill and complete a new horizontal well in the Marcellus formation.
- Drill the vertical to an approximate depth of 6150'.
- Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

RECEIVED  
 Office of Oil and Gas  
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 WV Department of  
 Environmental Protection

4704902440

**EQT Production**  
**Hydraulic Fracturing Monitoring Plan**  
**Pad ID: GLO168**  
**Marion County, WV**

12/21/16

4704902440

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## Purpose

The purpose of this pad-specific Hydraulic Fracturing Monitoring Plan is to identify and notify conventional well operators near EQT hydraulic fracturing in Marion County, WV prior to hydraulic fracturing at the following EQT wells on GLO168 pad: GLO168H1, GLO168H2, GLO168H3, GLO168H4, GLO168H5, GLO168H6, GLO168H7, GLO168H16, GLO168H17, GLO168H18, GLO168H19, GLO168H20, GLO168H21.

Due to the requirements under 35CSR8 5.11, the permittee is required to review the area surrounding the proposed well pad so as to identify and evaluate potential conduits for unintended fracture propagation. A report is required to be submitted along with a well work permit application.

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 coordination with well operators of the timing and location of the hydraulic fracturing, establishment of measures 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 Well Operators

EQT, using available data (WV Geological Survey, WVDEP website, and IHS data service), has identified all known wells and well operators within 500 feet of this pad and the lateral sections that are known or could reasonably be expected to be within range of the fracture propagation. A map showing these wells along with a list of the wells and operators is included in **Attachment A**.

EQT will notify these operators of the hydraulic fracturing schedule for these wells, and coordinate with them throughout the fracturing process.

EQT will recommend to these operators at a minimum to:

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 or other necessary equipment for wellhead integrity capable of a pressure recommended by EQT
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 other operators, and ongoing monitoring of the work upon request of OOG or immediately in the event of any noted abnormalities.

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06/16/2017

UWI	ABAND_DATE	COMP_DATE	CURR_OPER	ELEVATION	ELEV_RF_CD	FNL_STAT	LATITUDE	LONGITUDE	OPER_NAME	PROJ_FM_NM	SPUD_DATE	TD_FORM_NM	TOT_DEPTH	PERMIT
47049002240000	5/6/1942	8/31/1918	SOUTH PENN OIL	1013	GR	ABD-GW	39.5180	-80.4405	SOUTH PENN OIL		8/8/1918	BIG INJUN /SD/	2040	00234
47049002940000	3/13/1968	1/31/1968	EQUITABLE GAS COMPANY	1112	GR	D&A	39.5216	-80.4322	EQUITABLE GAS COMPANY		8/29/1967	FIFTH SAND	3159	00294
47049010080000	3/19/2009	12/22/1918	EQUITABLE GAS COMPANY	1161	GR	ABD-GW	39.5166	-80.4436	EQUITABLE GAS COMPANY		1/22/1918	HAMPSHIRE	3174	00298
47049010100000	10/3/1954	7/16/1918	EQUITABLE GAS COMPANY	1013	GR	ABD-GW	39.5206	-80.4393	EQUITABLE GAS COMPANY		6/25/1918	CHEMUNG	3254	00300
47049010110000	1/1/1950	4/17/1918	PITTSBURGH & W VA GAS	1260	GR	ABD-OW	39.5173	-80.4318	PITTSBURGH & W VA GAS		3/11/1918	THIRTY FOOT SD	3454	00301
47049010120000	10/9/1954	5/24/1918	EQUITABLE GAS COMPANY	1312	GR	ABD-GW	39.5173	-80.4292	EQUITABLE GAS COMPANY		3/30/1918	GORDON	3531	00301
47049011490000	5/20/1949	1/26/1918	RAAD SUPPLY COMPANY	1206	GR	ABD-GW	39.5070	-80.4356	RAAD SUPPLY COMPANY		12/27/1917	HAMPSHIRE	3679	003149
47049302390000	1/12/1939	10/8/1918	HOPE NATURAL GAS	1156	GR	ABD-GW	39.5208	-80.4412	HOPE NATURAL GAS		9/9/1918	HAMPSHIRE	3674	00339
47049303460000	6/10/1942	10/21/1918	SOUTH PENN OIL	1172	GR	ABD-OW	39.5128	-80.4281	SOUTH PENN OIL		8/17/1918	THIRTY FOOT SD	3717	00346
47049002610000	11/14/2008	6/1/1964	EQUITABLE GAS COMPANY	1063	GR	GSTG	39.5128	-80.4423	EQUITABLE GAS COMPANY		5/2/1964	HAMPSHIRE	3857	00361
47049002810000	1/1/1940		EQUITABLE GAS COMPANY	1038	GR	ABD-GW	39.5158	-80.4524	EQUITABLE GAS COMPANY		3/2/1967	GORDON	3955	00390
47049002900000		4/1/1967	EQUITABLE GAS COMPANY	1238	GR	GSTG	39.5153	-80.4397	EQUITABLE GAS COMPANY		8/2/1967	BIG INJUN /SD/	3955	00392
47049002920000		9/1/1967	UNKNOWN	1046	GR	OIL	39.5237	-80.4453	EQUITABLE GAS COMPANY				3955	00392
47049011020000	1/1/1930		UNKNOWN	0	GR	PSEUDO	39.5042	-80.4247	UNKNOWN				0	01102
47049011070000	5/6/1999		UNKNOWN	0	GR	PSEUDO	39.5018	-80.4257	UNKNOWN				0	01107
47049011240000	2/2/1999		UNKNOWN	0	GR	PSEUDO	39.4991	-80.4200	UNKNOWN				0	01124
47049011680000	1/1/1930		UNKNOWN	0	GR	PSEUDO	39.5065	-80.4253	UNKNOWN				0	01168
47049300120000			UNKNOWN	0	GR	PSEUDO	39.5013	-80.4257	UNKNOWN				0	01012
47049010210000	9/30/1997	10/17/1918	N G PENN CO	1020	GR	ABD-GW	39.5194	-80.4349	N G PENN CO		7/29/1918	DEVONIAN /SD/	2926	00201
47049011310000	7/30/1999		CONSOLIDATION COAL	0	GR	PSEUDO	39.5078	-80.4275	CONSOLIDATION COAL				0	01131
47049701130000			DELMAR OIL CORPORATION	0	GR	PSEUDO	39.5049	-80.4380	DELMAR OIL CORPORATION				0	070113
47049011230000	4/5/1999		CONSOLIDATION COAL	0	GR	PSEUDO	39.5010	-80.4195	CONSOLIDATION COAL				0	01123
47049702490000			HOPE NATURAL GAS	0	GR	PSEUDO	39.5266	-80.4423	HOPE NATURAL GAS				0	70249
47049306220000	1/1/1949	7/6/1917	RAAD SUPPLY COMPANY	1298	GR	ABD-GW	39.5151	-80.4251	RAAD SUPPLY COMPANY		6/6/1917	BIG INJUN /SD/	2378	30622
47049306320000	6/7/1949	6/11/1914	RAAD SUPPLY COMPANY	1216	GR	ABD-OW	39.5105	-80.4236	RAAD SUPPLY COMPANY		5/12/1914	THIRTY FOOT SD	2892	30632
47049306680000	8/28/1950	7/12/1918	PITTSBURGH & W VA GAS	1309	GR	ABD-OW	39.5161	-80.4326	PITTSBURGH & W VA GAS		5/23/1918	CHEMUNG	3440	30668
47049010090000	8/4/2009	2/8/1919	EQUITABLE GAS COMPANY	1203	GR	ABD-GW	39.5195	-80.4455	EQUITABLE GAS COMPANY		1/2/1918	GORDON	3220	01009
47049010200000		7/6/1917	SOUTH PENN OIL	1299	GR	GAS	39.5139	-80.4252	SOUTH PENN OIL		6/7/1917	BIG INJUN /SD/	2278	01020
47049002340000		4/28/1954	EQUITABLE GAS COMPANY	1266	GR	GSTG	39.5155	-80.4258	EQUITABLE GAS COMPANY		2/12/1954	HAMPSHIRE	2305	00234
47049002020000			EQUITABLE GAS COMPANY	0	GR	GSTG	39.5193	-80.4397	EQUITABLE GAS COMPANY				0	00202
47049002230000	8/25/1931		EQUITABLE GAS COMPANY	1158	GR	ABD-GW	39.5184	-80.4339	EQUITABLE GAS COMPANY				2994	00223
47049002350000	8/17/1931		EQUITABLE GAS COMPANY	1140	GR	ABD-GW	39.5141	-80.4524	EQUITABLE GAS COMPANY				3214	00235
47049002000000		8/1/1949	EQUITABLE GAS COMPANY	1156	GR	GSTG	39.5200	-80.4406	EQUITABLE GAS COMPANY		7/2/1949	BIG INJUN /SD/	0	00200
47049002010000			EQUITABLE GAS COMPANY	0	GR	GSTG	39.5212	-80.4380	EQUITABLE GAS COMPANY				0	00201
47049002070000		6/1/1950	EQUITABLE GAS COMPANY	1232	GR	GSTG	39.5173	-80.4378	EQUITABLE GAS COMPANY		5/2/1950	GORDON	0	00207
47049002080000	11/5/2009	8/1/1952	EQUITABLE GAS COMPANY	1239	GR	GSTG	39.5195	-80.4481	EQUITABLE GAS COMPANY		7/2/1952	GORDON	0	00208
47049002110000	1/26/2008	3/1/1950	EQUITABLE GAS COMPANY	1013	GR	GSTG	39.5150	-80.4448	EQUITABLE GAS COMPANY		1/30/1950	GORDON	0	00211
47049002120000		12/1/1950	EQUITABLE GAS COMPANY	1011	GR	GSTG	39.5205	-80.4388	EQUITABLE GAS COMPANY		11/1/1950	GORDON	0	00212
47049002170000		11/1/1950	EQUITABLE GAS COMPANY	1270	GR	GSTG	39.5151	-80.4270	EQUITABLE GAS COMPANY		10/2/1950	GORDON	0	00217
47049002200000		6/1/1951	EQUITABLE GAS COMPANY	1318	GR	GSTG	39.5141	-80.4313	EQUITABLE GAS COMPANY		5/2/1951	GORDON	0	00220
47049002210000		7/1/1951	EQUITABLE GAS COMPANY	1270	GR	GSTG	39.5158	-80.4367	EQUITABLE GAS COMPANY		6/1/1951	GORDON	0	00221
47049002250000		9/1/1953	EQUITABLE GAS COMPANY	1316	GR	GSTG	39.5141	-80.4349	EQUITABLE GAS COMPANY		8/2/1953	GORDON	0	00225
47049019390000			EQUITABLE GAS COMPANY	0	GR	GSTG	39.5161	-80.4500	EQUITABLE GAS COMPANY				0	01939
47049019400000			EQUITABLE GAS COMPANY	0	GR	GSTG	39.5181	-80.4403	EQUITABLE GAS COMPANY				0	01940
47049003000000	3/18/1969	2/1/1969	EQUITABLE GAS COMPANY	1248	GR	GSTG	39.5207	-80.4493	EQUITABLE GAS COMPANY		1/2/1969	FIFTH SAND	3604	00300
47049010170000			INVITATION ENERGY	1220	GR	OIL	39.5093	-80.4285	GREENRIDGE OIL				2092	01017
47049011250000	2/26/1999		CONSOLIDATION COAL	0	GR	UNKWVN	39.5003	-80.4217	CONSOLIDATION COAL				0	01125
47049011260000	8/17/1999		CONSOLIDATION COAL	0	GR	UNKWVN	39.5065	-80.4219	CONSOLIDATION COAL				0	01126
47049300340000	7/29/1931		SOUTH PENN OIL	1412	GR	ABD-GW	39.4946	-80.4219	SOUTH PENN OIL				3488	30034
47049300500000	12/16/1931		HOPE CONSTRUCTION & REFINING	1011	GR	ABDOGW	39.5215	-80.4388	HOPE CONSTRUCTION & REFINING				2759	30050
47049306420000	12/10/1949		RAAD SUPPLY COMPANY	1228	GR	ABD-OW	39.5119	-80.4258	RAAD SUPPLY COMPANY				2894	30642
47049708940000			UNKNOWN	0	GR	UNKWVN	39.4999	-80.4215	UNKNOWN				0	70894
47049722870000			UNKNOWN	0	GR	UNKWVN	39.5372	-80.4636	UNKNOWN				0	72287
47049722900000			UNKNOWN	0	GR	UNKWVN	39.5330	-80.4410	UNKNOWN				0	72290
47049722940000			UNKNOWN	0	GR	UNKWVN	39.5280	-80.4573	UNKNOWN				0	72294
47049722950000			HOPE NATURAL GAS	0	GR	UNKWVN	39.5287	-80.4598	HOPE NATURAL GAS				0	72295
47049723190000			UNKNOWN	0	GR	UNKWVN	39.5045	-80.4481	UNKNOWN				0	72319
47049723210000			UNKNOWN	0	GR	UNKWVN	39.5128	-80.4478	UNKNOWN				0	72321
47049723220000			UNKNOWN	0	GR	UNKWVN	39.5160	-80.4480	UNKNOWN				0	72322
47049723230000			UNKNOWN	0	GR	UNKWVN	39.5202	-80.4382	UNKNOWN				0	72323
47049723260000			UNKNOWN	0	GR	UNKWVN	39.5155	-80.4300	UNKNOWN				0	72326
47049723270000			UNKNOWN	0	GR	UNKWVN	39.5078	-80.4215	UNKNOWN				0	72327
47049019860000	12/19/2008		CONSOLIDATION COAL	0	GR	UNKWVN	39.5271	-80.4592	CONSOLIDATION COAL				0	01986

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47049020760000	4/15/2010	CONSOLIDATION COAL	0 GR	UNKWN	39.5261	-80.4425 CONSOLIDATION COAL	UNKNOWN	0 02076
47049020780000	7/23/2010	CONSOLIDATION COAL	0 GR	UNKWN	39.5288	-80.4597 CONSOLIDATION COAL	UNKNOWN	0 02078
47049004550000	8/5/2009	1/1/1981 UNKNOWN	1086 GR	ABD-GW	39.5349	-80.4400 EQUITABLE GAS COMPANY	GORDON STRAY /SD/ 12/18/1980 GORDON STRAY /SD/	3036 00455
4704972288		UNKNOWN		UNKWN	39.5356	-80.4602 UNKNOWN		72288

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UWI	Name	Depth Top	Base Depth
47049010210000	PITTSBURGH COAL	885	892
47049010210000	MURPHY /SD/	1007	1055
47049010210000	DUNKARD LITTLE /SD/	1220	1254
47049010210000	FREEPART	1382	1515
47049010210000	SALT SD /GROUP/	1672	1907
47049010210000	MAXTON/SD/	2059	2113
47049010210000	BIG LIME	2118	2172
47049010210000	KEENER /SD/	2179	2200
47049010210000	BIG INJUN /SD/	2210	2314
47049010210000	FIFTY FOOT SD	2804	2847
47049010210000	THIRTY FOOT SD	2884	2907
47049010200000	PITTSBURGH COAL	935	941
47049010200000	MURPHY /SD/	1066	1097
47049010200000	DUNKARD LITTLE /SD/	1286	1322
47049010200000	DUNKARD BIG/SD/	1359	1385
47049010200000	FREEPART	1489	1522
47049010200000	SALT SD 1	1727	1757
47049010200000	SALT SD 2	1792	1834
47049010200000	SALT SD 3	1918	2011
47049010200000	MAXTON/SD/	2144	2161
47049010200000	BIG LIME	2190	2235
47049010200000	KEENER /SD/	2248	2270
47049010200000	BIG INJUN /SD/	2274	
47049004550000	PITTSBURGH COAL	843	

\*Perforated formations

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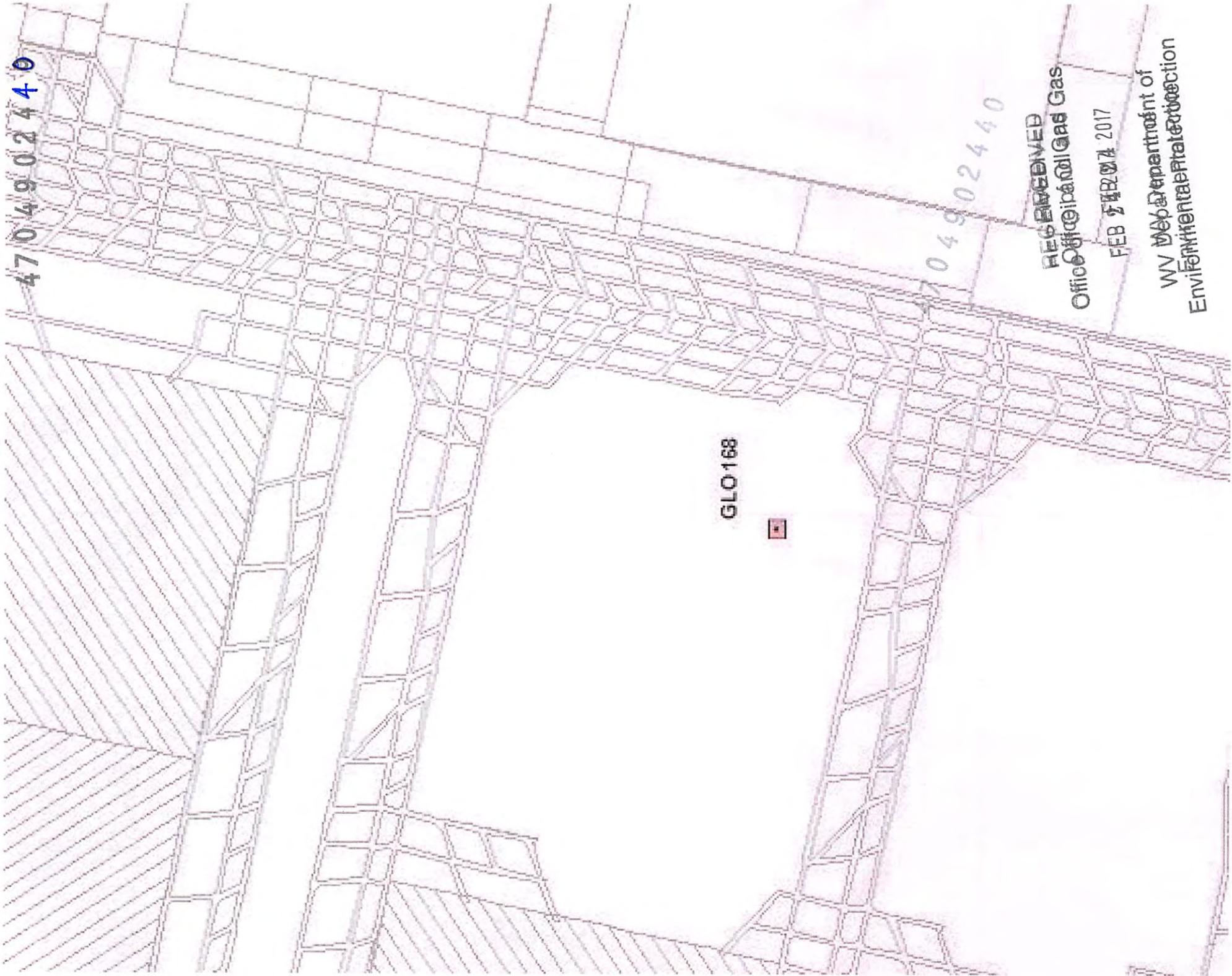
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GLO 168



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west virginia department of environmental protection

Office of Oil and Gas  
601 57<sup>th</sup> 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

4704902440

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,

James Peterson  
Environmental Resources Specialist / Permitting

Promoting a healthy environment.

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west virginia department of environmental protection

Office of Oil and Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
(304) 926-0450  
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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 )**

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**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.

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**06/16/2017**

**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.

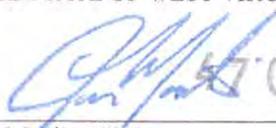
**ORDER**

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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06/16/2017



October 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 (GLO168)

Dear Mr. Smith,

EQT is requesting the 13-3/8" surface casing be set at 449' KB, 80' below the deepest fresh water. We will set the 9-5/8" intermediate string at 3090' KB, 50' below the base of the Gantz formation.

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

Sincerely,

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

Vicki Roark  
Permitting Supervisor

Enc.

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WW-9  
(4/16)

API Number 47 - 49 - \_\_\_\_\_  
Operator's Well No. GL0168H15

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) Laurel Run Quadrangle Glover Gap

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 \_\_\_\_\_)

SDW  
3/2/2017

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

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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 *Victoria J. Roark*  
Company Official (Typed Name) Victoria J. Roark  
Company Official Title Permitting Supervisor

Subscribed and sworn before me this 21 day of February 21, 2017

Rebecca L. Wainstreet Notary Public

My commission expires 4-7-2020



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.

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Form WW-9

Operator's Well No. GLO168H16

EQT Production Company

Proposed Revegetation Treatment: Acres Disturbed 66.70 Prevegetation pH 6.2

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
KY-31	40
Alsike Clover	5
Annual Rye	15

Seed Type	lbs/acre
Orchard Grass	15
Alsike Clover	5

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: S. D. Karath

Comments: Pre-seed/mulch all disturbed areas as soon as reasonably possible per regulation. Upgrade E&S if needed per WQ DEP E&S manual.

Title: COG Inspection

Date: 3/2/2017

Field Reviewed?  Yes  No

**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

**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

**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

**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

**BROAD STREET ENERGY LLC**

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

**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

**KING EXCAVATING CO.**

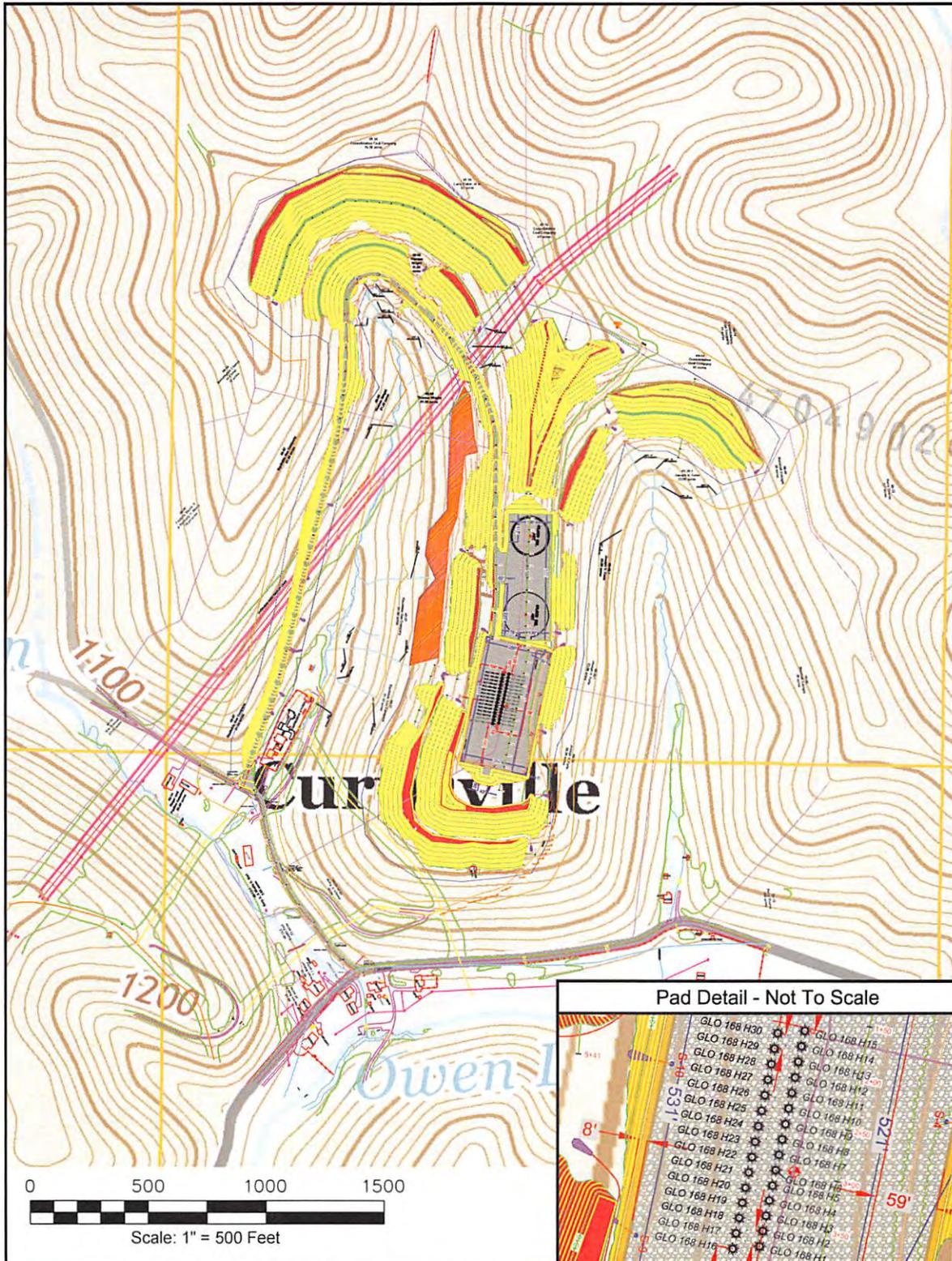
Advanced Waste Services  
101 River Park Drive  
New Castle, Pa. 16101  
Facility Permit# PAR000029132

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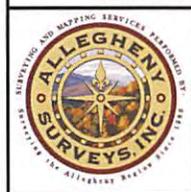
**06/16/2017**



Pine Grove 7.5' USGS QUADRANGLE		Proposed Disturbance Area	
Projected culvert inventory (for bid purposes only)		Well Site Location	See Site Plan
15" minimum diameter culverts	See Site Plan	Proposed Access Road	See Site Plan
24" minimum diameter culverts	See Site Plan	Approximate Total Disturbance	See Site Plan
DRAWN BY: Scott Brown	DATE: December 13, 2016	FILE NO: 11-16	DRAWING FILE NO: GLO 168 Rec Plan

Note: SEE SITE PLAN OF PNG 103 FOR COMPLETE GRADING & DRAINAGE CONSTRUCTION INCLUDING EROSION & SEDIMENT CONTROL DETAILS, ETC.

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SURVEYING AND MAPPING SERVICES PERFORMED BY:  
**ALLEGHENY SURVEYS, INC.**  
1-800-482-8606  
Birch River Office  
Phone: (304) 649-8606  
Fax: (304) 649-8608  
237 Birch River Road  
P.O. Box 438  
Birch River, WV 26610

06/16/2017



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# Site Specific Safety Plan

EQT GLO 168 Pad

Glover Quadrant

Marion County, WV

For Wells:

GLO168H1 \_GLO168H2 \_GLO168H3 \_GLO168H4 \_GLO168H5 GLO168H6\_ GLO168H7\_  
GLO168H16 GLO168H17 GLO168H18 GLO168H19 GLO168H20 GLO168H21 \_\_\_\_\_

Date Prepared: July 28, 2016

SDW 3/2/2017  
WV Oil and Gas Inspector

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

[Signature]  
EQT Production

Permitting Supervisor  
Title

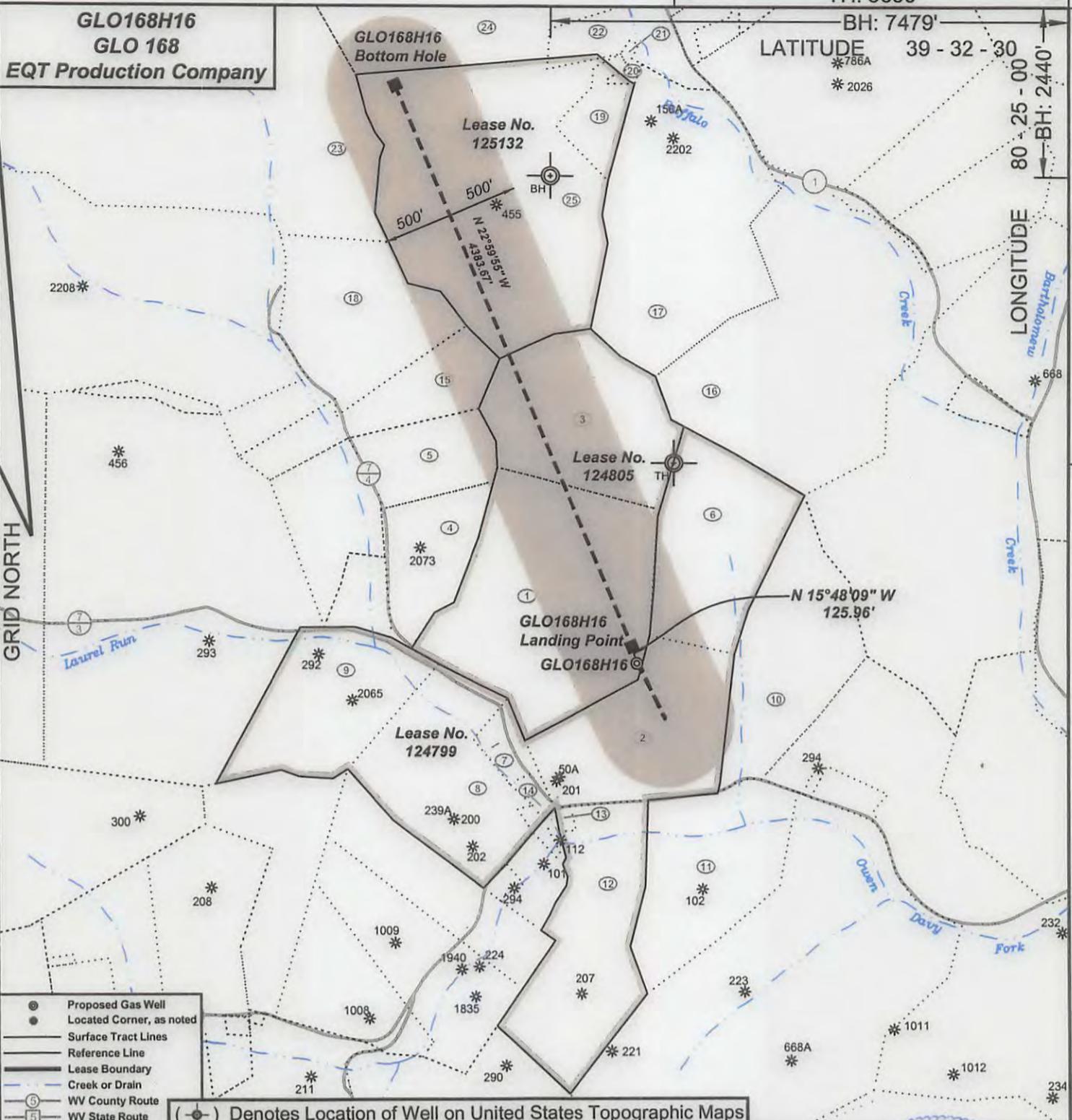
1-26-17  
Date

06/16/2017

**GLO168H16**  
**GLO 168**  
**EQT Production Company**

TH: 5690'  
 BH: 7479'  
 LATITUDE 39 - 32 - 30  
 \*786A  
 \*2026

LONGITUDE 80 - 25 - 00  
 BH: 2440'  
 TH: 6577'



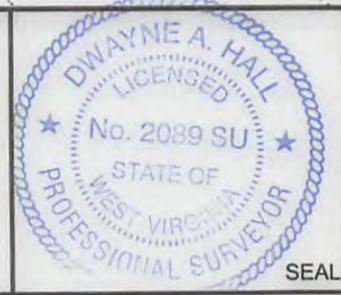
- ⊙ Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Reference Line
- Lease Boundary
- Creek or Drain
- ⑤ WV County Route
- ⑤ WV State Route

(⊙) Denotes Location of Well on United States Topographic Maps



*I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Department of Environmental Protection.*

*Dwayne A. Hall*  
 P.S. 2089SU



FILE NO: 11-16  
 DRAWING NO: GLO168H16  
 SCALE: 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY: 1:2500  
 PROVEN SOURCE OF ELEVATION: NGS CORS Station

**STATE OF WEST VIRGINIA**  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**OIL AND GAS DIVISION**

DATE: January 16 20 17  
 OPERATOR'S WELL NO.: GLO168H16  
 API WELL NO  
 47 - 49 - 02440H6A  
 STATE COUNTY PERMIT

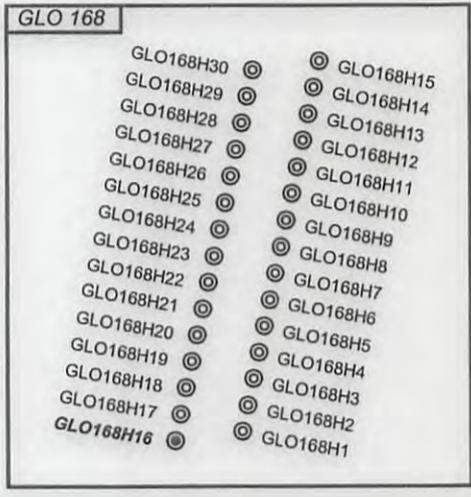
WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: <sup>Original 1357'</sup> Proposed 1316' WATERSHED: Laurel Run QUADRANGLE: Glover Gap  
 DISTRICT: Mannington COUNTY: Marion  
 SURFACE OWNER: Equitrans LP ACRES: 81  
 ROYALTY OWNER: EQT Mineral Purchasing Group, et al. LEASE NO: 124805 ACRES: 81  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 7,722'

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray  
 ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280  
 Bridgeport, WV 26330 Bridgeport, WV 26330

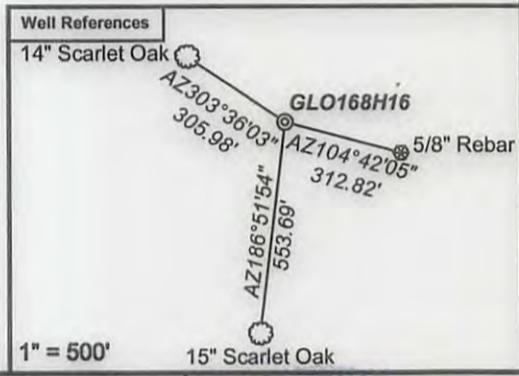
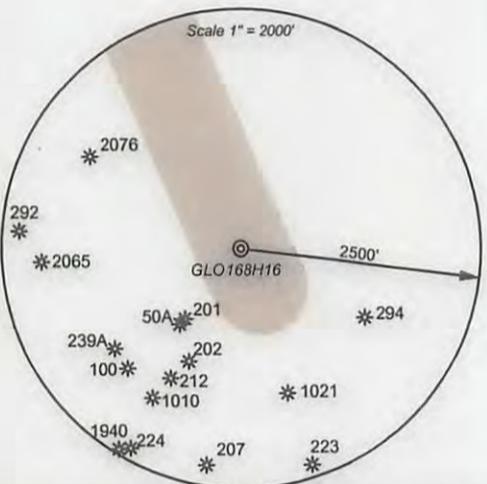
**GLO168H16**  
**GLO 168**  
**EQT Production Company**

**Notes:**  
GLO168H16 coordinates are  
NAD 27 N: 374,199.39 E: 1,735,731.19  
NAD 27 Lat: 39.523614 Long: -80.436837  
NAD 83 UTM N: 4,375,046.01 E: 548,420.18  
GLO168H16 Landing Point coordinates are  
NAD 27 N: 374,320.59 E: 1,735,696.89  
NAD 27 Lat: 39.523945 Long: -80.436963  
NAD 83 UTM N: 4,375,082.77 E: 548,409.12  
GLO168H16 Bottom Hole coordinates are  
NAD 27 N: 378,355.82 E: 1,733,984.15  
NAD 27 Lat: 39.534974 Long: -80.443185  
NAD 83 UTM N: 4,376,303.45 E: 547,866.85  
West Virginia Coordinate system of 1927 (North Zone)  
based upon Differential GPS Measurements.  
Plat orientation, corner and well ties are based upon  
the grid north meridian.  
Well location references are based upon the grid north  
meridian.  
UTM coordinates are NAD83, Zone 17, Meters.

Tract I.D.	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	49	37	Marion	Mannington	Equitrans LP	51.50
2	49	39	Marion	Mannington	John H. Musgrave, et al.	28.96
3	49	38	Marion	Mannington	Thomas B. Wright	30.00
4	49	36	Marion	Mannington	Frederic R. & Kimberly P. Steele	16.25
5	49	35	Marion	Mannington	Mannington Church of Christ Trustees	13.00
6	49	39.1	Marion	Mannington	John H. Musgrave, et al.	23.90
7	48	13.1	Marion	Mannington	Gary A. & Sheila D. Earl	2.02
8	48	14	Marion	Mannington	Roger & Pauline Eshelman	25.09
9	48	15.0	Marion	Mannington	Elmer O. Duncan, et al.	23.50
10	49	40	Marion	Mannington	Marshall & Dick Cartright	36.00
11	50	14	Marion	Mannington	Melvin L. Gooch	28.00
12	50	15	Marion	Mannington	Perry R. & Janice M. Thorne	5.61
13	50	16	Marion	Mannington	Richard H. & Lucy M. Lambert	0.46
14	48	13	Marion	Mannington	Harlen O. & Diana S. Batson	1.10
15	49	33	Marion	Mannington	Consolidation Coal Company	51.53
16	49	14	Marion	Mannington	Consolidation Coal Company	61.00
17	49	16	Marion	Mannington	Larry Baker, et al.	44.00
18	49	33.0	Marion	Mannington	Consolidation Coal Company	61.00
19	49	17	Marion	Mannington	Consolidation Coal Company	4.88
20	49	18	Marion	Mannington	Consolidation Coal Company	0.75
21	49	19	Marion	Mannington	Consolidation Coal Company	0.25
22	37	9	Marion	Mannington	Chad & Liberty Glover	27.22
23	48	19	Marion	Mannington	Roger & Betty Sponaugle	105.45
24	49	31	Marion	Mannington	Samuel M. & Rosemary A. Snodgrass	50.08
25	49	32	Marion	Mannington	Consolidation Coal Company	64.38



Lease No.	Acres	Owner
124799	135	Anita K. Stanley, et al.
125132	71	Consolidation Coal Company, et al.



- ⊙ Proposed Gas Well
- Located Corner, as noted
- Surface Tract Lines
- Reference Line
- Lease Boundary
- Creek or Drain
- ⑤ WV County Route
- ⑤ WV State Route

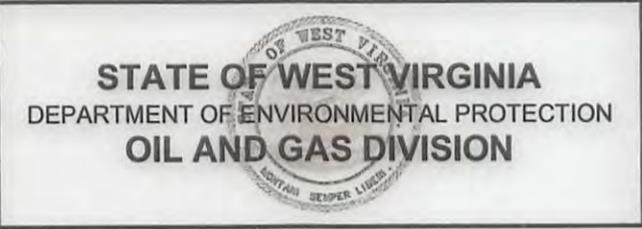


*I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Department of Environmental Protection.*

*Dwayne A. Hall*  
P.S. 2089SU



FILE NO: 11-16  
DRAWING NO: GLO168H16  
SCALE: 1" = 1000'  
MINIMUM DEGREE OF ACCURACY: 1:2500  
PROVEN SOURCE OF ELEVATION: NGS CORS Station



DATE: January 16, 2017  
OPERATOR'S WELL NO.: GLO168H16  
API WELL NO: 47 - 49 - 02440  
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: Proposed 1316' WATERSHED Starkey Run and Wiley Fork QUADRANGLE: Glover Gap  
DISTRICT: Mannington COUNTY: Marion

SURFACE OWNER: Equitrans LP ACREAGE: 51.50 06/16/2017  
ROYALTY OWNER: EQT Mineral Purchasing Group, et al. LEASE NO: 124805 ACREAGE: 81

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus ESTIMATED DEPTH: 7,722'

WELL OPERATOR: EQT Production Company DESIGNATED AGENT: Rex C. Ray  
ADDRESS: 115 Professional Place PO Box 280 ADDRESS: 115 Professional Place PO Box 280  
Bridgeport, WV 26330 Bridgeport, WV 26330



March 7, 2017

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

Re: Inspector sign offs, 47-04902445, 02444, 02443, 02442, 02441, 02440, 02439, 02438, 02437, 02436, 02435, 02434, 02433

Dear Mr. Smith,

Enclosed are the inspector sign offs on the above API #'s. Also attached is page 3 of the safety plan updating the inspector information.

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

Sincerely,

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

Vicki Roark  
Permitting Supervisor-WV

Enc.

**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				

4704902440

**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

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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 J Roark  
 Its: Permitting Supervisor

Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
	<b><u>EQT Mineral Purchasing Group, et al. (Current Royalty Owner)</u></b>		***	
<b><u>124805</u></b>	Howard Wright, et ux, et al. (Original Lessor)	Equitable Gas Company		DB 667/33
	Equitable Gas Company	Equitrans, Inc.		AB 12/279
	Equitrans, Inc.	Equitrans, LP		DB 46/660
	Equitrans, LP	EQT Production Company		DB 1114/130
	<b><u>Anita K. Stanley, et al. (Current Royalty Owner)</u></b>		***	
<b><u>124799</u></b>	Guy F. Musgrave, et al.	Pittsburgh & West Virginia Gas		DB 465/312
	Pittsburgh & West Virginia Gas	Equitable Gas Company		DB 511/539
	Equitable Gas Company	Equitrans, Inc.		AB 12/279
	Equitrans, Inc.	Equitrans, LP		DB 46/660
	Equitrans, LP	EQT Production Company		DB 1114/130
	<b><u>Consolidation Coal Company, et al. (Current Royalty Owner)</u></b>		***	
<b><u>125132</u></b>	Consolidation Coal Company, et al.	EQT Production Company		DB 228/586

\*\*\*We certify that 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.

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06/16/2017



January 13, 2017

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

Re: GLO168 well pad, wells: GLO168H1, GLO168H2, GLO168H3, GLO168H4,  
GLO168H5, GLO168H6, GLO168H7, GLO168H16, GLO168H17, GLO168H18,  
GLO168H19, GLO168H20, GLO168H21  
Mannington District, Marion County

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

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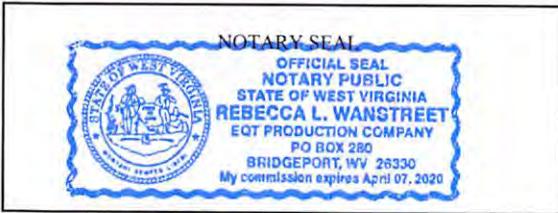
WV Department of  
Environmental Protection



**Certification of Notice is hereby given:**

THEREFORE, I *Victoria J Roark*, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator:	<u>EQT Production Company</u>	Address:	<u>115 Professional Place PO Box 280</u>
By:	<u>Victoria J Roark</u>		<u>Bridgeport WV 26330</u>
Its:	<u>Permitting Supervisor</u>	Facsimile:	<u>304-848-0041</u>
Telephone:	<u>304-848-0076</u>	Email:	<u>vroark@eqt.com</u>



Subscribed and sworn before me this 21 day of February 2017.  
Rebecca 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](mailto:depprivacyofficer@wv.gov).

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 WV Department of  
 Environmental Protection  
 06/16/2017

**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:** 2/21/17 **Date Permit Application Filed:** 2/21/17

**Notice of:**

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

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

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

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

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

SURFACE OWNER(s)

Name: 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: \_\_\_\_\_

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\*Please attach additional forms if necessary FEB 24 2017

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Environmental Protection

06/16/2017

**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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://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 401 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the specified 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 concerns

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Office of Oil and Gas  
WV Department of Environmental Protection  
WV Department of Environmental Protection  
06/16/2017

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 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

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**FEB 24 2017**

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.**

**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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Environmental Protection

06/16/2017

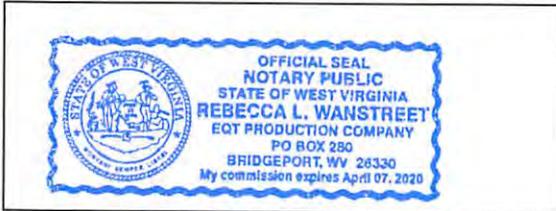
**Notice is hereby given by:**

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](mailto:depprivacyofficer@wv.gov).



*[Handwritten Signature]*

Subscribed and sworn before me this 21 day of February 2017.

Rebecca L Wanstreet Notary Public

My Commission Expires 4-7-2020

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Topo Quad: Glover Gap

Scale: 1" = 1000'

County: Marion

Date: September 28, 2016

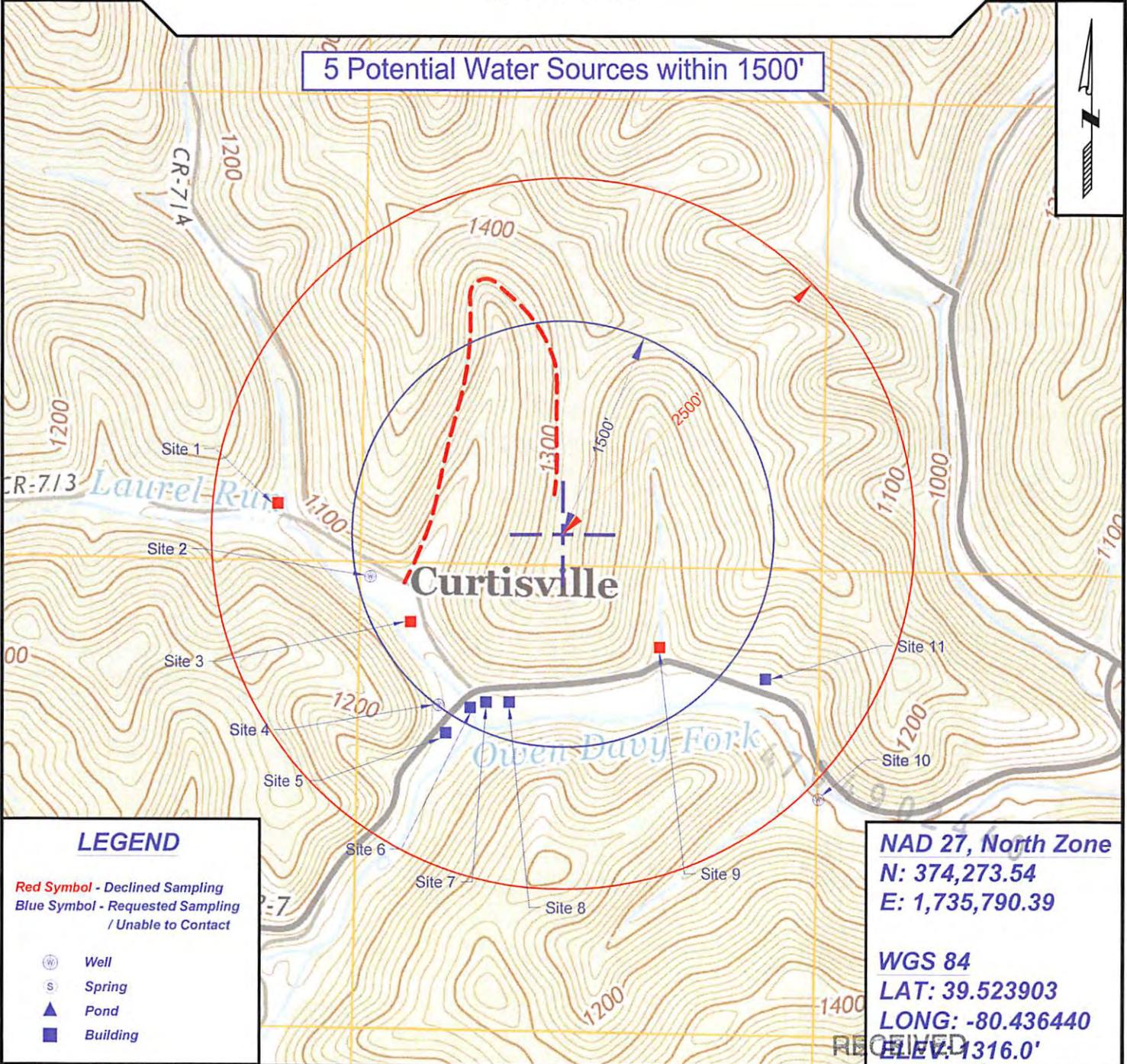
District: Mannington

Project No: 11-18-M-16

Water

# GLO 168

5 Potential Water Sources within 1500'



### LEGEND

Red Symbol - Declined Sampling  
 Blue Symbol - Requested Sampling / Unable to Contact

- Well
- Spring
- Pond
- Building

NAD 27, North Zone  
 N: 374,273.54  
 E: 1,735,790.39

WGS 84  
 LAT: 39.523903  
 LONG: -80.436440  
 ELEV: 1316.0'

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SURVEYING AND MAPPING SERVICES PERFORMED BY:

## ALLEGHENY SURVEYS, INC.

1-800-482-8606  
 237 Birch River Road  
 Birch River, WV 26610  
 PH: (304) 649-8606  
 FAX: (304) 649-8608

PREPARED FOR:

Office of Oil and Gas

## EQT Production Company

P.O. Box 280  
 Bridgeport, WV 26330  
 WV Department of  
 Environmental Protection

06/16/2017

Surface Owners:

Equitrans, LP  
625 Liberty Ave., Suite 1700  
Pittsburgh, PA 15222

Thomas B. Wright Heirs  
C/O Martha Arnold  
808 Gaston Ave.  
Fairmont, WV 26554

Joseph V. Forte  
John H. Musgrave &  
Matilda Henry  
C/O Joseph Forte  
11 Hutchinson Dr.  
Fairmont, WV 26554

7016 2070 0001 0947 9069

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<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 P \$	
Sent To	Thomas B. Wright Heirs
Street a	c/o Martha Arnold
City, St	818 Gaston Ave. Fairmont WV 26554
PS Form	GLO168 Permit App. and Planned Op.

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RW

4704902440

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<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 P \$	
Sent To	Joseph V Forte, John H Musgrave, Matilda Henry
Street a	c/o Joseph Forte
City, St	11 Hutchinson Dr. Fairmont WV 26554
PS Form	GLO168 Permit App and Planned Op.

Postmark Here FEB 24 2017

RW

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Office of Oil and Gas  
FEB 24 2017  
WV Department of  
Environmental Protection 06/16/2017

Surface Owners Access road & Other disturbance

Equitrans, LP  
625 Liberty Ave., Suite 1700  
Pittsburgh, PA 15222

Thomas B. Wright Heirs  
C/O Martha Arnold  
808 Gaston Ave.  
Fairmont, WV 26554

Joseph V. Forte  
John H. Musgrave &  
Matilda Henry  
C/O Joseph Forte  
11 Hutchinson Dr.  
Fairmont, WV 26554

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<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 P	\$

Sent To  
Street a  
City, St

Thomas B. Wright Heirs  
c/o Martha Arnold  
818 Gaston Ave.  
Fairmont WV 26554  
GLO168 Permit App. and Planned Op.

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<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 P	\$

Sent To  
Street a  
City, St

Joseph V Forte, John H Musgrave, Matilda Henry  
c/o Joseph Forte  
11 Hutchinson Dr.  
Fairmont WV 26554  
GLO168 Permit App and Planned Op.

Postmark Here

PS Form Instructions

Surface Owner, AST

Equitrans, LP  
625 Liberty Ave., Suite 1700  
Pittsburgh, PA 15222

Joseph V. Forte  
John H. Musgrave &  
Matilda Henry  
C/O Joseph Forte  
11 Hutchinson Dr.  
Fairmont, WV 26554

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<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 P \$

Sent To: Joseph V Forte, John H Musgrave, Matilda Henry  
c/o Joseph Forte  
11 Hutchinson Dr.  
Fairmont WV 26554  
GLO168 Permit App and Planned Op.

City, St: Fairmont, WV

PS For: Instructions

Postmark Here JUN 2 2017

4704902440

**Coal Owners:**

Consol Mining Company  
 Engineering Operations Support Dept Coal  
 CNX Center  
 1000 Consol Energy Drive  
 Canonsburg, PA 15317-6506

Consolidation Coal Company  
 C/O Murray Energy Corporation  
 Attn: Alex O'Neill  
 46226 National Road  
 St. Clairsville, OH 43950

Consolidation Coal Company  
 C/O Murray Energy Corporation  
 Attn: Troy Freels  
 1 Bridge Street  
 Monongah, WV 26554

Legacy Minerals, LLC  
 P.O. Box 23298  
 Pittsburgh, PA 15222-2006

**CBM ownership**

CNX Gas Company  
 Engineering Operations Support Dept Coal  
 CNX Center  
 1000 Consol Energy Drive  
 Canonsburg, PA 15317-6506

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 Return Receipt (hardcopy) \$  
 Return Receipt (electronic) \$  
 Certified Mail Restricted Delivery \$  
 Adult Signature Required \$  
 Adult Signature Restricted Delivery \$  
 Postage \$  
 Total Postage \$

Sent To **Consol Mining Company**  
**Engineering Operations Support Dept. Coal**  
**1000 Consol Energy Drive**  
**Canonsburg PA 15317**  
**GLO168 Permit App.**

Postmark Here **FEB 22 2017**

PS Form 3800, April 2013 PSN 7530-02-000-9038

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 Return Receipt (electronic) \$  
 Certified Mail Restricted Delivery \$  
 Adult Signature Required \$  
 Adult Signature Restricted Delivery \$  
 Postage \$  
 Total Postage and Fees \$

Sent To **Consolidation Coal Company (OH)**  
**c/o Murray American Energy Corporation**  
**46226 National Road**  
**St. Clairsville OH 43950**  
**GLO168 Permit App.**

Postmark Here **FEB 22 2017**

PS Form 3800, April 2013 PSN 7530-02-000-9045

7015 0640 0005 9572 4902

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 Return Receipt (hardcopy) \$  
 Return Receipt (electronic) \$  
 Certified Mail Restricted Delivery \$  
 Adult Signature Required \$  
 Adult Signature Restricted Delivery \$  
 Postage \$  
 Total Postage \$

Sent To **Consolidation Coal Company**  
**c/o Murray American Energy Corporation**  
**1 Bridge Street**  
**Monongah WV 26554**  
**GLO168 Permit App.**

Postmark Here **FEB 22 2017**

PS Form 3800, April 2013 PSN 7530-02-000-4902

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 Return Receipt (hardcopy) \$  
 Return Receipt (electronic) \$  
 Certified Mail Restricted Delivery \$  
 Adult Signature Required \$  
 Adult Signature Restricted Delivery \$  
 Postage \$  
 Total Postage \$

Sent To **Legacy Minerals, LLC**  
**PO Box 23298**  
**Pittsburgh PA 15222-2006**  
**GLO168 Permit App.**

Postmark Here **FEB 22 2017**

PS Form 3800, April 2013 PSN 7530-02-000-9021

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**FEB 24 2017**  
**WV Department of Environmental Protection**

06/16/2017

**Coal Owners:**

Consol Mining Company  
Engineering Operations Support Dept Coal  
CNX Center  
1000 Consol Energy Drive  
Canonsburg, PA 15317-6506

Consolidation Coal Company  
C/O Murray Energy Corporation  
Attn: Alex O'Neill  
46226 National Road  
St. Clairsville, OH 43950

Consolidation Coal Company  
C/O Murray Energy Corporation  
Attn: Troy Freels  
1 Bridge Street  
Monongah, WV 26554

Legacy Minerals, LLC  
P.O. Box 23298  
Pittsburgh, PA 15222-2006

**CBM ownership**

CNX Gas Company  
Engineering Operations Support Dept Coal  
CNX Center  
1000 Consol Energy Drive  
Canonsburg, PA 15317-6506

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<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 F	\$

Sent to: **CNX Gas Company LLC**  
Street: **Engineering Operations Support Dept. Coal**  
City: **1000 Consol Energy Drive**  
City: **Canonsburg PA 15317**  
PS Form 3800, April 2012

Postmark: **FEB 22 2017**  
Here

Instructions

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06/16/2017

**Water Well Owners:**

Roger Eshelman  
69 Lykac Road  
Mannington, WV 26582

Gary Earl  
23 Lylac Road  
Mannington, WV 26582

Harlen Batson  
484 Curtisville Road  
Mannington, WV 26582

Jason Batson  
471 Curtisville, Road  
Mannington, WV 26582

Rick Lambert  
459 Curtisville Road  
Mannington, WV 26582

Perry Thorne/Eric Efaw  
93 Curtisville Road  
Mannington, WV 26582

Judith Myers  
1032 Plum Run Road  
Mannington, WV 26582

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Certified Mail Restricted Delivery \$ \_\_\_\_\_

Adult Signature Required \$ \_\_\_\_\_

Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postage  
\$ \_\_\_\_\_

Total Postage and Fees  
\$ \_\_\_\_\_



Sent To  
Street a  
City, Sta  
PS Form

Roger Eshelman  
69 Lykac Road  
Mannington, WV 26582  
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EW  
Instructions

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Certified Mail Restricted Delivery \$ \_\_\_\_\_

Adult Signature Required \$ \_\_\_\_\_

Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postage  
\$ \_\_\_\_\_

Total Postage and Fees  
\$ \_\_\_\_\_



Sent To  
Street a  
City, Sta  
PS Form

Gary Earl  
23 Lylac Road  
Mannington, WV 26582  
GLO168 Permit App

EW  
Instructions

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Return Receipt (electronic) \$ \_\_\_\_\_

Certified Mail Restricted Delivery \$ \_\_\_\_\_

Adult Signature Required \$ \_\_\_\_\_

Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postage  
\$ \_\_\_\_\_

Total P  
\$ \_\_\_\_\_



Sent To  
Street i  
City, St

Harlen Batson  
484 Curtisville Road  
Mannington, WV 26582  
GLO168 Permit App

EW  
Instructions

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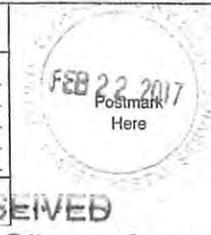
Certified Mail Restricted Delivery \$ \_\_\_\_\_

Adult Signature Required \$ \_\_\_\_\_

Adult Signature Restricted Delivery \$ \_\_\_\_\_

Postage  
\$ \_\_\_\_\_

Total Pos  
\$ \_\_\_\_\_



Sent To  
Street an  
City, Stat

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Office of Oil and Gas  
Jason Batson  
471 Curtisville, Road  
Mannington, WV 26582  
GLO168 Permit App  
WV Department of  
Environmental Protection

EW  
Instructions

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①

06/16/2017

**Water Well Owners:**

Roger Eshelman  
69 Lykac Road  
Mannington, WV 26582

Gary Earl  
23 Lylac Road  
Mannington, WV 26582

Harlen Batson  
484 Curtisville Road  
Mannington, WV 26582

Jason Batson  
471 Curtisville, Road  
Mannington, WV 26582

Rick Lambert  
459 Curtisville Road  
Mannington, WV 26582

Perry Thorne/Eric Efav  
93 Curtisville Road  
Mannington, WV 26582

Judith Myers  
1032 Plum Run Road  
Mannington, WV 26582

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

Postage  
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Total P  
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Sent To  
Street:  
City, St:  
PS Form \_\_\_\_\_

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Rick Lambert  
459 Curtisville Road  
Mannington, WV 26582  
GLO168 Permit App

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Sent To  
Street:  
City, St:  
PS Form \_\_\_\_\_

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Perry Thorne/Eric Efav  
93 Curtisville Road  
Mannington, WV 26582  
GLO168 Permit App

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<input type="checkbox"/> Return Receipt (electronic)	\$ _____
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<input type="checkbox"/> Adult Signature Restricted Delivery	\$ _____

Postage  
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Total Postage and Fees  
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Sent To  
Street an:  
City, State  
PS Form \_\_\_\_\_

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RECEIVED  
Office of Oil and Gas  
Judith Myers  
1032 Plum Run Road  
Mannington, WV 26582  
GLO168 Permit App

WV Department of Environmental Protection

Rw

06/16/2017

**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF ENTRY FOR PLAT SURVEY**

**Notice Time Requirement:** Notice shall be provided at least **SEVEN (7)** days but no more than **FORTY-FIVE (45)** days prior to entry.

**Date of Notice:** 12/4/2015

**Date of Planned Entry:** 12/11/2015

**Delivery method pursuant to West Virginia Code § 22-6A-10(a):**

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

Pursuant to West Virginia Code § 22-6A-10(a), prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

**Notice is hereby provided to:**

SURFACE OWNER

COAL OWNER OR LESSEE

Name: Joseph Forte  
(John H. Musgrave & Joseph V. Forte)

Name: \_\_\_\_\_

Address: 11 Hutchinson Drive, Fairmont, WV 26554

Address: \_\_\_\_\_

Name: \_\_\_\_\_

MINERAL OWNER(S)

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address: \_\_\_\_\_

\*Please attach additional forms if necessary

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: WV

Approx. Latitude & Longitude: 39.52384/-80.43652

County: Marion

Public Road Access: CR 7/3 & 7 (Lylac & Curtisville Rds.)

District: Mannington, Tax Map 49, Parcel 39

Watershed: Laurel Run

Quadrangle: Glover Gap

Generally Used Farm Name: Musgrave

Copies of the state Erosion and Sediment Control Manual and the statues and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: EQT Production Company

Address: 115 Professional Plaza, Bridgeport, WV 26330

Telephone: 304-848-0074

EQT Representative: James Harbours

Facsimile: 304-848-0040

Email: EQTLandEntryNotice@eqt.com

Signature: [Signature]

RECEIVED

Office of Oil and Gas

FEB 24 2017

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such a name, address and telephone number, as part of regulatory requirements. 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 your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@WV.gov](mailto:depprivacyofficer@WV.gov).

WV Department of Environmental Protection  
06/16/2017

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF ENTRY FOR PLAT SURVEY**

**Notice Time Requirement:** Notice shall be provided at least **SEVEN (7)** days but no more than **FORTY-FIVE (45)** days prior to entry.

**Date of Notice:** 12/4/2015

**Date of Planned Entry:** 12/11/2015

**Delivery method pursuant to West Virginia Code § 22-6A-10(a):**

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

Pursuant to West Virginia Code § 22-6A-10(a), prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

**Notice is hereby provided to:**

SURFACE OWNER

Joseph Forte  
(John H. Musgrave, Joseph V. Forte & Matilda  
Name: Henry

Address: 11 Hutchinson Drive, Fairmont, WV 26554

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

COAL OWNER OR LESSEE

Name: \_\_\_\_\_

Address: \_\_\_\_\_

MINERAL OWNER(S)

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\*Please attach additional forms if necessary

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: WV  
County: Marion  
District: Mannington, Tax Map 49, Parcel 39.1  
Quadrangle: Glover Gap

Approx. Latitude & Longitude: 39.52384/-80.43652  
Public Road Access: CR 7/3 & 7 (Lylac & Curtisville Rds.)  
Watershed: Laurel Run  
Generally Used Farm Name: Musgrave

Copies of the state Erosion and Sediment Control Manual and the statues and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: EQT Production Company  
Telephone: 304-848-0074  
Facsimile: 304-848-0040  
Email: EQTLandEntryNotice@eqt.com

Address: 115 Professional Place, Bridgeport, WV 26330  
EQT Representative: Jamie P. Barbour  
Signature: [Signature] **FEB 24 2017**

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such a name, address and telephone number, as part of 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 obligations, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our privacy policies or personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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WV Department of  
Environmental Protection  
06/16/2017

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF ENTRY FOR PLAT SURVEY**

**Notice Time Requirement:** Notice shall be provided at least **SEVEN (7)** days but no more than **FORTY-FIVE (45)** days prior to entry.

**Date of Notice:** 12/4/2015

**Date of Planned Entry:** 12/11/2015

**Delivery method pursuant to West Virginia Code § 22-6A-10(a):**

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

Pursuant to West Virginia Code § 22-6A-10(a), prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

**Notice is hereby provided to:**

**SURFACE**  
Name: Thomas B. Wright  
c/o Martha Arnold  
Address: 808 Gaston Ave., Fairmont, WV 26554  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

**COAL OWNER OR LESSEE**  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
 **MINERAL OWNER(S)**  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: <u>WV</u>	Approx. Latitude & Longitude: <u>39.52384/-80.43652</u>
County: <u>Marion</u>	Public Road Access: <u>CR 7/3 (Lylac Road)</u>
District: <u>Mannington/Tax Map 49 Parcel 38</u>	Watershed: <u>Laurel Run</u>
Quadrangle: <u>Glover Gap</u>	Generally Used Farm Name: <u>Wright</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: EQT Production Company  
Telephone: 304-848-0074  
Facsimile: 304-848-0040  
Email: EQTLandEntryNotice@eqt.com

Address: 115 Professional Place, Bridgeport, WV 26330  
EQT Representative: Jamie I. Barbour  
Signature: \_\_\_\_\_

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**Notice is hereby provided to:**

SURFACE OWNER

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

COAL OWNER OR LESSEE

Name: Consolidation Coal Co.

Engineering and Operations Support Coal Dept.  
CNX Center, 1000 Consol Energy Drive  
Address: Canonsburg, PA 15317-6506

MINERAL OWNER(S)

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\*Please attach additional forms if necessary

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: WV  
County: Marion  
District: Mannington, Tax Map 49, Parcels 39 & 39.1  
Quadrangle: Glover Gap

Approx. Latitude & Longitude: 39.52384/-80.43652  
Public Road Access: CR 7/3 & 7 (Lylac & Curtisville Rds.)  
Watershed: Laurel Run  
Generally Used Farm Name: Musgrave

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: EQT Production Company  
Telephone: 304-848-0074  
Facsimile: 304-848-0040  
Email: EQTLandEntryNotice@eqt.com

Address: 115 Professional Place, Bridgeport, WV 26330  
EQT Representative: Jamie I. Barbour  
Signature: [Signature]  
FEB 24 2017

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**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
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**Notice is hereby provided to:**

SURFACE OWNER  
Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
Murray American Energy, Inc.  
Name: Attn.: Troy Freels

Address: 1 Bridge Street  
Monongah, WV 26554

MINERAL OWNER(S)  
Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\*Please attach additional forms if necessary

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: WV  
County: Marion  
District: Mannington, Tax Map 49, Parcels 39 & 39.1  
Quadrangle: Glover Gap

Approx. Latitude & Longitude: 39.52384/-80.43652  
Public Road Access: CR 7/3 & 7 (Lylac & Curtisville Rds.)  
Watershed: Laurel Run  
Generally Used Farm Name: Musgrave

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: EQT Production Company  
Telephone: 304-848-0074  
Facsimile: 304-848-0040  
Email: EQTLandEntryNotice@eqt.com

Address: 115 Professional Plaza, Bridgeport, WV 26330  
EQT Representative: Jamie O'Brien  
Signature: [Signature] **FEB 24 2017**

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WV Department of  
Environmental Protection

**06/16/2017**



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

**WAIVER**

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

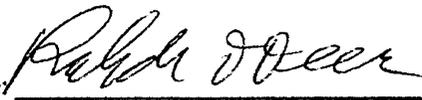
**Surface Owner Waiver:**

I, Ralph Deer, hereby state that I have read the notice provisions listed above and hereby waive the notice requirements under West Virginia Code § 22-6A-16(b) for the tract of land as follows:

State: WV  
County: Marion  
District: Mannington  
Quadrangle: Glover Gap  
Watershed: Laurel Run

UTM NAD 83 Easting: 548420.18  
Northing: 4375046.01  
Public Road Access: C/O Rt 7/A  
Generally used farm name: Equitrans LP

Name: Equitrans LP  
Address: 625 Liberty Ave Suite 1700  
Pittsburgh PA 15222

Signature:   
Date: 2/21/17 

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06/16/2017

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

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

**Date of Notice:** 2/21/17      **Date Permit Application Filed:** 2/21/17

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

- CERTIFIED MAIL                                       HAND  
RETURN RECEIPT REQUESTED                                      DELIVERY

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

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

(at the address listed in the records of the sheriff at the time of notice):

Name: See Attached  
Address: \_\_\_\_\_  
\_\_\_\_\_

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
\_\_\_\_\_

**Notice is hereby given:**

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

State:	<u>WV</u>	UTM NAD 83	Easting:	<u>548420.18</u>
County:	<u>Marion</u>		Northing:	<u>4375046.01</u>
District:	<u>Mannington</u>	Public Road Access:	<u>C/O Rt 7/4</u>	
Quadrangle:	<u>Glover Gap</u>	Generally used farm name:	<u>Equitrans LP</u>	
Watershed:	<u>Laurel Run</u>			

**This Notice Shall Include:**

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

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

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WV Department of  
Environmental Protection

06/16/2017

WW-6AW  
(1-12)

API NO. 47- 49  
OPERATOR WELL NO. GLO168H16  
Well Pad Name: GLO168

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, Ralph Deer, 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>548420.18</u>
County: <u>Marton</u>	Northing: <u>4375046.01</u>
District: <u>Mannington</u>	Public Road Access: <u>C/O Rt 7/A</u>
Quadrangle: <u>Glover Gap</u>	Generally used farm name: <u>Equitrans LP</u>
Watershed: <u>Laurel Run</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. <sup>470600270</sup>

<p>*Please check the box that applies</p> <p><input checked="" type="checkbox"/> SURFACE OWNER</p> <p><input checked="" type="checkbox"/> SURFACE OWNER (Road and/or Other Disturbance)</p> <p><input checked="" type="checkbox"/> SURFACE OWNER (Impoundments/Pits)</p> <p><input 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><b>FOR EXECUTION BY A NATURAL PERSON</b></p> <p>Signature: _____</p> <p>Print Name: _____</p> <p>Date: _____</p> <p><b>FOR EXECUTION BY A CORPORATION, ETC.</b></p> <p>Company: <u>Equitrans LP</u></p> <p>By: <u>Ralph Deer</u></p> <p>Its: <u>VP Land</u></p> <p>Signature: <u>Ralph Deer</u></p> <p>Date: <u>2/21/17</u></p>
--	--

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WV Department of  
Environmental Protection  
06/16/2017



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION  
**Division of Highways**

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

Jim Justice  
Governor

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

February 17, 2017

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

Subject: DOH Permit for the GLO 168 Pad Site, Marion County

GLO168H1	GLO168H2	GLO168H3	GLO168H4
GLO168H5	GLO168H6	GLO168H7	GLO168H8
GLO168H9	GLO168H10	GLO168H11	GLO168H12
GLO168H13	GLO168H14	GLO168H15	GLO168H16 49-02440
GLO168H17	GLO168H18	GLO168H19	GLO168H20
GLO168H21	GLO168H22	GLO168H23	GLO168H24

Dear Mr. Martin,

This well site will be accessed from Permit # 04-2016-0799 issued to EQT Production Company for access to the State Road. The well site is located off of Marion County Route 7/3 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. 49-02440

Very Truly Yours,

Gary K. Clayton, P.E.  
Regional Maintenance Engineer  
Central Office O&G Coordinator

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

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FEB 24 2017

WV Department of  
Environmental Protection 06/16/2017

**Anticipated Frac Additives**  
**Chemical Names and CAS numbers**

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

4704902440



# GLO 168 WELL PAD FINAL SITE DESIGN



Allegheny Surveys Inc.  
P.O. Box 438  
237 Birch River Road  
Birch River, WV 26610  
304-649-8605

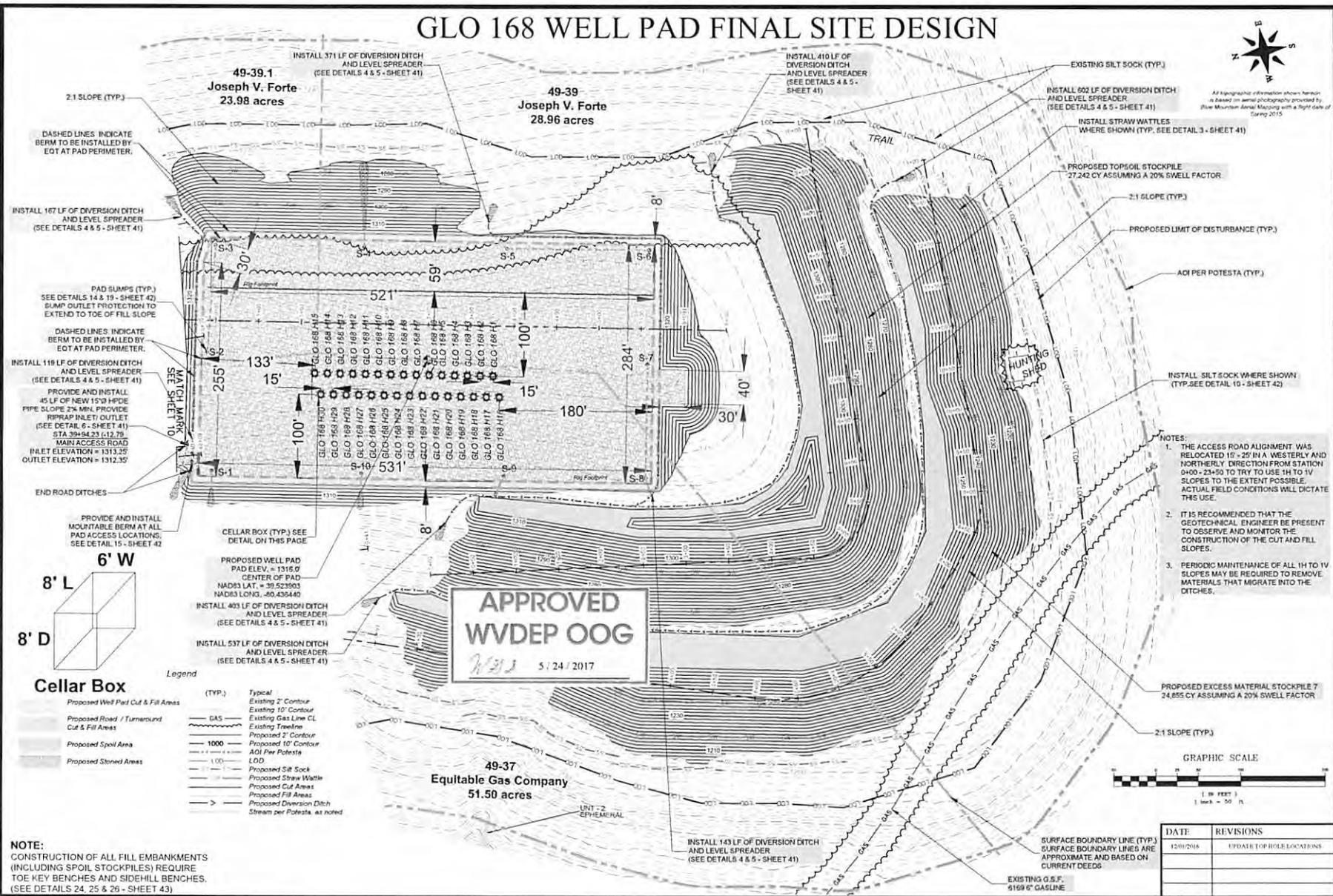


Horner Bros. Engineers  
Since 1948  
Civil, Mining, Environmental and  
Consulting Engineering  
1000 West Virginia Ave., Suite 1000  
Martinsburg, WV 26150



HIS DOCUMENT  
PREPARED FOR  
EQT PRODUCTION  
COMPANY

FINAL SITE DESIGN  
GLO 168  
WELL PAD SITE  
MANNINGTON DISTRICT  
MORGAN COUNTY, WV



DASHED LINES INDICATE BERM TO BE INSTALLED BY EQT AT PAD PERIMETER.

INSTALL 167 LF OF DIVERSION DITCH AND LEVEL SPREADER (SEE DETAILS 4 & 5 - SHEET 41)

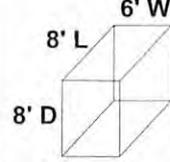
PAD SUMPS (TYP.) SEE DETAILS 14 & 15 - SHEET 42. SUMP OUTLET PROTECTION TO EXTEND TO TOE OF FILL SLOPE.

DASHED LINES INDICATE BERM TO BE INSTALLED BY EQT AT PAD PERIMETER.

INSTALL 119 LF OF DIVERSION DITCH AND LEVEL SPREADER (SEE DETAILS 4 & 5 - SHEET 41)

PROVIDE AND INSTALL 45 LF OF NEW 15" Ø HDPE PIPE SLOPE 2% MIN. PROVIDE RIPRAP INLET OUTLET (SEE DETAIL 6 - SHEET 41). STA 39+84.23 (12.79) MAIN ACCESS ROAD INLET ELEVATION = 1313.25' OUTLET ELEVATION = 1312.35'

PROVIDE AND INSTALL MOUNTABLE BERM AT ALL PAD ACCESS LOCATIONS. (SEE DETAIL 15 - SHEET 42)



**Legend**

(TYP.)	Typical Existing 2' Contour
(TYP.)	Existing 10' Contour
(TYP.)	Existing Gas Line CL
(TYP.)	Existing Trail Line
(TYP.)	Proposed 2' Contour
(TYP.)	Proposed 10' Contour
(TYP.)	AOI Per Potesta
(TYP.)	LOD
(TYP.)	Proposed Silt Sock
(TYP.)	Proposed Straw Wattle
(TYP.)	Proposed Cut Areas
(TYP.)	Proposed Fill Areas
(TYP.)	Proposed Diversion Ditch
(TYP.)	Stream per Potesta, as noted

**NOTE:**  
CONSTRUCTION OF ALL FILL EMBANKMENTS (INCLUDING SPOIL STOCKPILES) REQUIRE TOE KEY BENCHES AND SIDEHILL BENCHES. (SEE DETAILS 24, 25 & 26 - SHEET 43)

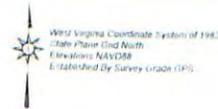
4704902440



# EQT - GLO 168

## FINAL SITE DESIGN, CONSTRUCTION PLANS, & EROSION & SEDIMENT CONTROL PLANS

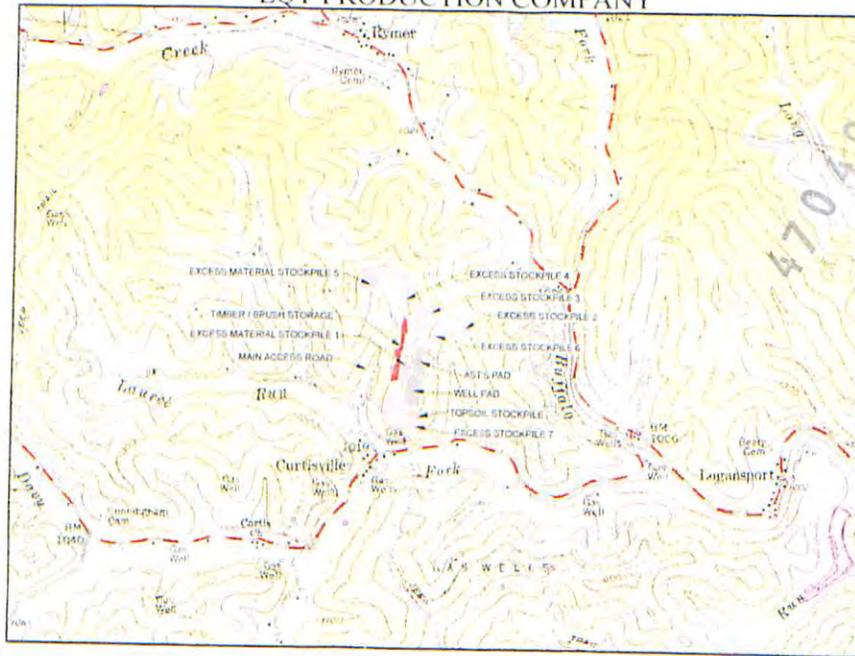
### EQT PRODUCTION COMPANY



Allegheny Surveys Inc.  
P.O. Box 438  
237 Birch River Road  
Birch River, WV 26610  
304-649-8606



Horner Bros Engineers  
1000 Main Street  
Martinsburg, WV 26150  
304-261-1000



**WELL LEGEND**

GLO 168 H1	- LAT 39 523705 / LONG -80 436555
GLO 168 H2	- LAT 39 523745 / LONG -80 436545
GLO 168 H3	- LAT 39 523785 / LONG -80 436535
GLO 168 H4	- LAT 39 523826 / LONG -80 436524
GLO 168 H5	- LAT 39 523866 / LONG -80 436514
GLO 168 H6	- LAT 39 523907 / LONG -80 436503
GLO 168 H7	- LAT 39 523947 / LONG -80 436493
GLO 168 H8	- LAT 39 523987 / LONG -80 436482
GLO 168 H9	- LAT 39 524028 / LONG -80 436472
GLO 168 H10	- LAT 39 524108 / LONG -80 436451
GLO 168 H11	- LAT 39 524149 / LONG -80 436441
GLO 168 H12	- LAT 39 524189 / LONG -80 436430
GLO 168 H13	- LAT 39 524230 / LONG -80 436420
GLO 168 H14	- LAT 39 524270 / LONG -80 436409
GLO 168 H15	- LAT 39 524311 / LONG -80 436398
GLO 168 H16	- LAT 39 524351 / LONG -80 436387
GLO 168 H17	- LAT 39 524392 / LONG -80 436376
GLO 168 H18	- LAT 39 524432 / LONG -80 436365
GLO 168 H19	- LAT 39 524473 / LONG -80 436354
GLO 168 H20	- LAT 39 524513 / LONG -80 436343
GLO 168 H21	- LAT 39 524554 / LONG -80 436332
GLO 168 H22	- LAT 39 524594 / LONG -80 436321
GLO 168 H23	- LAT 39 524635 / LONG -80 436310
GLO 168 H24	- LAT 39 524675 / LONG -80 436299
GLO 168 H25	- LAT 39 524716 / LONG -80 436288
GLO 168 H26	- LAT 39 524756 / LONG -80 436277
GLO 168 H27	- LAT 39 524797 / LONG -80 436266
GLO 168 H28	- LAT 39 524837 / LONG -80 436255
GLO 168 H29	- LAT 39 524878 / LONG -80 436244
GLO 168 H30	- LAT 39 524918 / LONG -80 436233

**WELL LOG LOCATION**

Well Name	Latitude	Longitude
GLO 168 H1	39 523705	-80 436555
GLO 168 H2	39 523745	-80 436545
GLO 168 H3	39 523785	-80 436535
GLO 168 H4	39 523826	-80 436524
GLO 168 H5	39 523866	-80 436514
GLO 168 H6	39 523907	-80 436503
GLO 168 H7	39 523947	-80 436493
GLO 168 H8	39 523987	-80 436482
GLO 168 H9	39 524028	-80 436472
GLO 168 H10	39 524108	-80 436451
GLO 168 H11	39 524149	-80 436441
GLO 168 H12	39 524189	-80 436430
GLO 168 H13	39 524230	-80 436420
GLO 168 H14	39 524270	-80 436409
GLO 168 H15	39 524311	-80 436398
GLO 168 H16	39 524351	-80 436387
GLO 168 H17	39 524392	-80 436376
GLO 168 H18	39 524432	-80 436365
GLO 168 H19	39 524473	-80 436354
GLO 168 H20	39 524513	-80 436343
GLO 168 H21	39 524554	-80 436332
GLO 168 H22	39 524594	-80 436321
GLO 168 H23	39 524635	-80 436310
GLO 168 H24	39 524675	-80 436299
GLO 168 H25	39 524716	-80 436288
GLO 168 H26	39 524756	-80 436277
GLO 168 H27	39 524797	-80 436266
GLO 168 H28	39 524837	-80 436255
GLO 168 H29	39 524878	-80 436244
GLO 168 H30	39 524918	-80 436233



**PROJECT CONTACTS**

Project Manager: [Name]  
 Surveyor: [Name]  
 Designer: [Name]

**Project Contacts**

John [Name], EQT Production Company  
 304-649-8606 Office

Surveyor: [Name]  
 304-649-8606 Office

Design: [Name], Horner Brothers Engineers  
 304-261-1000 Office

SDW  
2/27/2017

**FLOODPLAIN CONDITIONS**

DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN	NO
PERMIT REQUIRED FROM COUNTY FLOODPLAIN COORDINATOR	NO
REC. MAP STUDY COMPLETED	NO
FLOODPLAIN SHOWN ON DRAWINGS	NO
FORMER NUMBERS FOR SITE	SUBSCRIBED & MODIFIED
AREAS OF CONSTRUCTION IN FLOODPLAIN	NO

**SHEET INDEX**

Sheet Title	Page
COVER SHEET / LOCATION MAP	1
EXISTING CONDITIONS PLAN	2
RELEASE OF QUANTITIES	3
CONSTRUCTION GENERAL AND E&S NOTES	4
OVERVIEW OF SITE DESIGN	5
FINAL SITE DESIGN PLANS	6-11
WELL PAD PROFILE & CROSS SECTION	12-16
AST PAD PROFILE & CROSS SECTION	15-16
MAN ACCESS ROAD PROFILE & CROSS SECTION	17-23
EXCESS MATERIAL STOCKPILE PROFILES & SECTIONS	24-36
TOPSOIL STOCKPILE PROFILES & CROSS SECTION	39-40
CONSTRUCTION DETAILS	41-43
RECLAMATION PLANS	44-45

**DATE / REVISIONS**

DATE	REVISIONS	DATE
12/7/2016	Scale As Noted	

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!!**

**811**  
Know what's below.  
Call before you dig.

**WELL LOG LOCATION**

Well Pad locations with the Well Location Numbers of the well log #17.

\* All well pad locations are shown on the map. If a well pad location is not shown on the map, it is not a well pad location.

\* All well pad locations are shown on the map. If a well pad location is not shown on the map, it is not a well pad location.

\* All well pad locations are shown on the map. If a well pad location is not shown on the map, it is not a well pad location.

The drawings, construction notes, and reference sheets attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Chapter of Environmental Protection, Office of Oil and Gas §35-4-27.

The information reflects a 40 DND (DND - Above Ground Storage Tank (AST)) pad with secondary containment and a 40,000 BBL Above Ground Storage Tank (AST).

Horner Brothers Engineers make no indication relating to the design, construction or maintenance of the Above Ground Storage Tank (AST).



**COVER LOCATION SHEET**  
GLO 168  
WELL PAD SITE  
LINCOLN COUNTY, WV

4704902440

# GLO 168 WELL PAD FINAL SITE DESIGN

- NOTES**
1. THE ACCESS ROAD ALIGNMENT WAS RELOCATED 15' - 25' IN A WESTERLY AND NORTHERLY DIRECTION FROM STATION 0+00 - 2+50 TO TRY TO USE 1H TO 1V SLOPES TO THE EXTENT POSSIBLE. ACTUAL FIELD CONDITIONS WILL DICTATE THIS USE.
  2. IT IS RECOMMENDED THAT THE GEOTECHNICAL ENGINEER BE PRESENT TO OBSERVE AND MONITOR THE CONSTRUCTION OF THE CUT AND FILL SLOPES.
  3. PERIODIC MAINTENANCE OF ALL 1H TO 1V SLOPES MAY BE REQUIRED TO REMOVE MATERIALS THAT MIGRATE INTO THE DITCHES.

PROPOSED AOI (TYP)

AOI PER POTESTA (TYP)

PROPOSED LIMIT OF DISTURBANCE (TYP)

PROVIDE AND INSTALL  
40 LF OF NEW 30" HDPE  
PIPE (SLOPE 0.5% MIN. PROVIDE  
RIPRAP INLET & OUTLET  
(SEE DETAIL 6 - SHEET 41)  
STA. 12+39.50 (11.5')  
MANUFACTURED ROAD  
INLET ELEVATION = 1232.20  
OUTLET ELEVATION = 1229.80

1:1 SLOPE (TYP)  
SEE NOTES 1.3 THIS SHEET  
GEOTECHNICAL REPORT SUMMARY  
MINIMIZE EROSION, MONITOR & MAINTAIN  
STABILITY OF CUTS CONSTRUCTED FROM  
STATION 12+50 TO 13+15

1:1 SLOPE (TYP)  
SEE NOTES 1.3 THIS SHEET  
GEOTECHNICAL REPORT SUMMARY  
SOILD TO COMPETENT ROCK FROM  
STATION 0+00 TO STATION 12+50 ALONG CUT

PROVIDE AND INSTALL  
35 LF OF NEW 24" HDPE  
PIPE (SLOPE 0.5% MIN. PROVIDE  
RIPRAP INLET & OUTLET  
(SEE DETAIL 6 - SHEET 41)  
STA. 13+01.20 (11.25')  
MAIN ACCESS ROAD  
INLET ELEVATION = 1233.40  
OUTLET ELEVATION = 1231.00

PROVIDE AND INSTALL  
ROCK CHECK DAM  
ALONG DITCH AS REQUIRED  
(SEE DETAIL 1 - SHEET 41)



ALL DIMENSIONS UNLESS OTHERWISE NOTED  
ARE IN FEET AND DECIMALS THEREOF  
THIS DRAWING IS A PRELIMINARY DESIGN AND IS NOT TO BE USED FOR CONSTRUCTION WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD



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Birch River, WV 26610  
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Civil, Survey, Engineering  
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Martinsburg, WV 26150  
304-251-1111



THE STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENT & NATURAL RESOURCES

FINAL SITE DESIGN  
GLO 168  
WELL PAD SITE  
MARSHALL COUNTY DISTRICT  
MARSHALL COUNTY, WV

49-37  
Equitable Gas Company  
51.50 acres

49-38  
Thomas Wright  
81.25 acres

OVERHEAD HIGH TENSION LINES

UNIT 1  
INTERMITTENT

INSTALL SET SOCK WHERE SHOWN  
(TYP SEE DETAIL 10 - SHEET 42)

BEGIN ROAD DITCH

END ROAD DITCH

INSTALL STRAW WATTLES WHERE SHOWN  
(TYP SEE DETAIL 3 - SHEET 41)

SURFACE BOUNDARY LINE (TYP)  
SURFACE BOUNDARY LINES ARE  
APPROXIMATE AND BASED ON  
CURRENT DEEDS

END ROAD DITCH  
PROPOSED MAIN ACCESS ROAD  
TO TRAVELWAY

OVERHEAD POWER LINES  
WILL NEED VERIFIED FOR  
VEHICLE CLEARANCE

EXISTING WATERWAY PER  
AERIAL MAPPING (TYP)

GRAPHIC SCALE



Legend

- |                                      |  |
|--------------------------------------|--|
| Proposed Road Cut & Fill Areas (TYP) | Typical:<br>Existing 2' Corridor<br>Existing 10' Corridor<br>Existing Utility Pole<br>Existing Overhead Utility<br>Existing Trench |
| Proposed Gravel Areas                | Proposed 2' Corridor<br>Proposed 10' Corridor<br>AOI Per Potesta<br>Proposed AOI   |
|                                      | Proposed Cut Areas<br>Proposed Fill Areas<br>Existing Waterway per Aerial Mapping<br>Stream per Potesta as noted                   |

**NOTE:**  
CONSTRUCTION OF ALL FILL EMBANKMENTS  
(INCLUDING SPOIL STOCKPILES) REQUIRE  
TOE KEY BENCHES AND SIDEHILL BENCHES  
(SEE DETAILS 24, 25 & 26 - SHEET 43)

DATE	REVISIONS	DATE
		12/7/2016
		Scale: 1" = 40'
		12/7/2016
		12/7/2016