06/16/2017

west virginia department of environmental protection

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

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

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 168H6
47-049-02438-00-00

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 168H6
Farm Name: EQUITRANS LP
U.S. WELL NUMBER: 47-049-02438-00-00
Horizontal 6A / New Drill
Date Issued: 6/13/2017

06/16/2017

API Number: _____

PERMIT CONDITIONS 4702490243

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

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.

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

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

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

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

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

7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.

8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.

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

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

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API Number: _____

PERMIT CONDITIONS 4704902430

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.

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WW-6B
(04/15)

API NO. 47- 49 -
OPERATOR WELL NO. GLO168H6
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: GLO168H6 Well Pad Name: GLO168

3) Farm Name/Surface Owner: Equitrans LP Public Road Access: C/O Rt 7/4

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

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

SDW
3/2/2017

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

8) Proposed Total Vertical Depth: 7722

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 19141

11) Proposed Horizontal Leg Length: 10858

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 X No _____

(a) If Yes, provide Mine Info: Name: Harrison County Mine
Depth: 1032'
Seam: Pittsburgh
Owner: Murray Energy Corporation

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WW-6B
(04/15)

API NO. 47- 049 - 02438
OPERATOR WELL NO. GLO168H6
Well Pad Name: GLO168

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 ft^3 / CTS
Fresh Water	13 3/8	New	J-55	54.5	449	449	417 ft^3 / CTS
Coal							
Intermediate	9 5/8	New	A-500	40	3090	3090	1225 ft^3 / CTS
Production	5 1/2	New	P-110	20	19141	19141	500' above top producing zone
Tubing	2 3/8		J-55	4.7		May not be run, if run set 40 above top perf or 50 inclination	
Liners							

SDW
6/9/2017

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:				

06/16/2017

API NO. 47- 49 -
OPERATOR WELL NO. GLO168H6
Well Pad Name: GLO168

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 6724'. Kick off and drill curve. Drill the lateral in the Marcellus. Cement casing.

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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 % Calcuim 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 average holes bottoms up volume. Perform a cleanup cycle by pumping 3-5 bottoms up or until the shakers are clean. Check volume of cuttings coming across the shakers every 15 minutes.

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*Note: Attach additional sheets as needed.

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Well **GLO168H6**

EQT Production

Glover Gap Quad

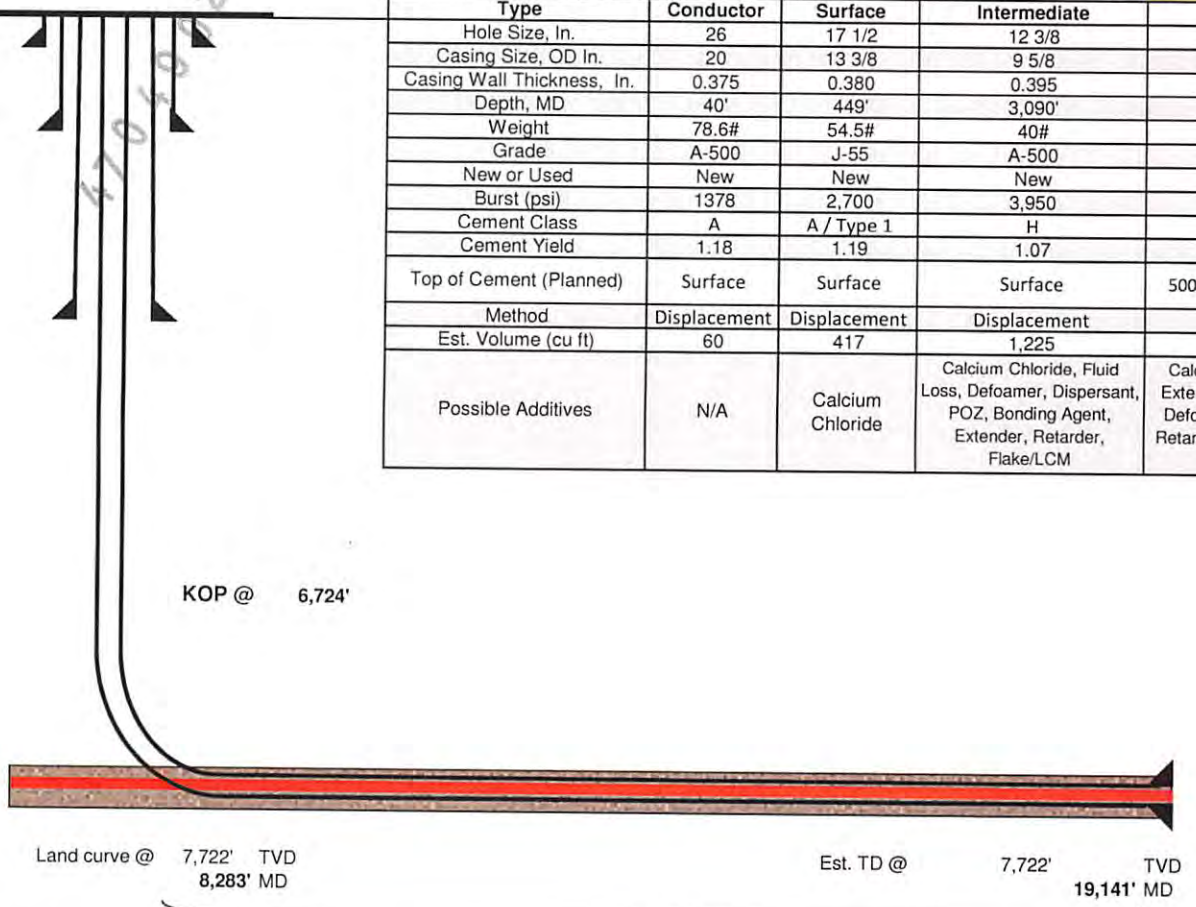
Marion County, WV

Azimuth 159

Vertical Section 11398

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	19141	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'	19,141'
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	3,059
Possible Additives	N/A	Calcium Chloride	Calcium Chloride, Fluid Loss, Defoamer, Dispersant, POZ, Bonding Agent, Extender, Retarder, Flake/LCM	Calcium Carbonate, Fluid Loss, Extender, Dispersent, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent

Proposed Well Work:
Drill and complete a new horizontal well in the Marcellus formation.
Drill the vertical to an approximate depth of 6724'.
Kick off and drill curve. Drill lateral in the Marcellus. Cement casing.

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EQT Production

Hydraulic Fracturing Monitoring Plan

Pad ID: GLO168

Marion County, WV

12/21/16

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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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UWI	ABAND_DATE	COMP_DATE	CURR_OPER
47049002240000	5/6/1942	8/31/1918	SOUTH PENN OIL
47049002940000	3/13/1968	1/31/1968	EQUITABLE GAS COMPANY
47049010080000	3/19/2009	12/22/1918	EQUITABLE GAS COMPANY
47049010100000	10/3/1954	7/16/1918	EQUITABLE GAS COMPANY
47049010110000	1/1/1950	4/17/1918	PITTSBURGH & W VA GAS
47049010120000	10/9/1954	5/24/1918	EQUITABLE GAS COMPANY
47049011490000	5/20/1949	1/26/1918	RAAD SUPPLY COMPANY
47049302390000	1/12/1939	10/8/1918	HOPE NATURAL GAS
47049303460000	6/10/1942	10/21/1918	SOUTH PENN OIL
47049002610000	11/14/2008	6/1/1964	EQUITABLE GAS COMPANY
47049002810000	1/1/1940		EQUITABLE GAS COMPANY
47049002900000		4/1/1967	EQUITABLE GAS COMPANY
47049002920000		9/1/1967	UNKNOWN
47049011020000	1/1/1930		UNKNOWN
47049011070000	5/6/1999		UNKNOWN
47049011240000	2/2/1999		UNKNOWN
47049011680000	1/1/1930		UNKNOWN
47049300120000			UNKNOWN
47049010210000	9/30/1997	10/17/1918	N G PENN CO
47049011310000	7/30/1999		CONSOLIDATION COAL
47049701130000			DELMAR OIL CORPORATION
47049011230000	4/5/1999		CONSOLIDATION COAL
47049702490000			HOPE NATURAL GAS
47049306220000	1/1/1949	7/6/1917	RAAD SUPPLY COMPANY
47049306320000	6/7/1949	6/11/1914	RAAD SUPPLY COMPANY
47049306680000	8/28/1950	7/12/1918	PITTSBURGH & W VA GAS
47049010090000	8/4/2009	2/8/1919	EQUITABLE GAS COMPANY
47049010200000		7/6/1917	SOUTH PENN OIL
47049002340000		4/28/1954	EQUITABLE GAS COMPANY
47049002020000			EQUITABLE GAS COMPANY
47049002230000	8/25/1931		EQUITABLE GAS COMPANY
47049002350000	8/17/1931		EQUITABLE GAS COMPANY
47049002000000		8/1/1949	EQUITABLE GAS COMPANY
47049002010000			EQUITABLE GAS COMPANY
47049002070000		6/1/1950	EQUITABLE GAS COMPANY
47049002080000	11/5/2009	8/1/1952	EQUITABLE GAS COMPANY
47049002110000	1/26/2008	3/1/1950	EQUITABLE GAS COMPANY
47049002120000		12/1/1950	EQUITABLE GAS COMPANY
47049002170000		11/1/1950	EQUITABLE GAS COMPANY
47049002200000		6/1/1951	EQUITABLE GAS COMPANY
47049002210000		7/1/1951	EQUITABLE GAS COMPANY
47049002250000		9/1/1953	EQUITABLE GAS COMPANY
47049019390000			EQUITABLE GAS COMPANY
47049019400000			EQUITABLE GAS COMPANY
47049003000000	3/18/1969	2/1/1969	EQUITABLE GAS COMPANY
47049010170000			INVITATION ENERGY
47049011250000	2/26/1999		CONSOLIDATION COAL
47049011260000	8/17/1999		CONSOLIDATION COAL
47049300340000	7/29/1931		SOUTH PENN OIL
47049300500000	12/16/1931		HOPE CONSTRUCTION & REFINING
47049306420000	12/10/1949		RAAD SUPPLY COMPANY
47049708940000			UNKNOWN
47049722870000			UNKNOWN
47049722900000			UNKNOWN
47049722940000			UNKNOWN
47049722950000			HOPE NATURAL GAS
47049723190000			UNKNOWN
47049723210000			UNKNOWN
47049723220000			UNKNOWN
47049723230000			UNKNOWN
47049723260000			UNKNOWN
47049723270000			UNKNOWN
47049019860000	12/19/2008		CONSOLIDATION COAL

ELEVATION	ELEV_RF_CD	FNL_STAT	LATITUDE	LONGITUDE	OPER_NAME
1013	GR	ABD-GW	39.5180	-80.4405	SOUTH PENN OIL
1112	GR	D&A	39.5216	-80.4322	EQUITABLE GAS COMPANY
1161	GR	ABD-GW	39.5166	-80.4436	EQUITABLE GAS COMPANY
1013	GR	ABD-GW	39.5206	-80.4393	EQUITABLE GAS COMPANY
1260	GR	ABD-OW	39.5173	-80.4318	PITTSBURGH & W VA GAS
1312	GR	ABD-GW	39.5173	-80.4292	EQUITABLE GAS COMPANY
1206	GR	ABD-GW	39.5070	-80.4356	RAAD SUPPLY COMPANY
1156	GR	ABD-GW	39.5208	-80.4412	HOPE NATURAL GAS
1172	GR	ABD-OW	39.5128	-80.4281	SOUTH PENN OIL
1063	GR	GSTG	39.5128	-80.4423	EQUITABLE GAS COMPANY
1038	GR	ABD-GW	39.5158	-80.4524	EQUITABLE GAS COMPANY
1238	GR	GSTG	39.5153	80.4397	EQUITABLE GAS COMPANY
1046	GR	OIL	39.5237	-80.4453	EQUITABLE GAS COMPANY
0	GR	PSEUDO	39.5042	-80.4247	UNKNOWN
0	GR	PSEUDO	39.5018	-80.4257	UNKNOWN
0	GR	PSEUDO	39.4991	-80.4200	UNKNOWN
0	GR	PSEUDO	39.5065	-80.4253	UNKNOWN
0	GR	PSEUDO	39.5013	-80.4257	UNKNOWN
1020	GR	ABD-GW	39.5194	-80.4349	N G PENN CO
0	GR	PSEUDO	39.5078	-80.4275	CONSOLIDATION COAL
0	GR	PSEUDO	39.5049	80.4380	DELMAR OIL CORPORATION
0	GR	PSEUDO	39.5010	-80.4195	CONSOLIDATION COAL
0	GR	PSEUDO	39.5266	-80.4423	HOPE NATURAL GAS
1298	GR	ABD-GW	39.5151	-80.4251	RAAD SUPPLY COMPANY
1216	GR	ABD-OW	39.5105	-80.4236	RAAD SUPPLY COMPANY
1309	GR	ABD-OW	39.5161	80.4326	PITTSBURGH & W VA GAS
1203	GR	ABD-GW	39.5195	-80.4455	EQUITABLE GAS COMPANY
1299	GR	GAS	39.5139	-80.4252	SOUTH PENN OIL
1266	GR	GSTG	39.5155	-80.4258	EQUITABLE GAS COMPANY
0	GR	GSTG	39.5193	-80.4397	EQUITABLE GAS COMPANY
1158	GR	ABD-GW	39.5184	-80.4339	EQUITABLE GAS COMPANY
1140	GR	ABD-GW	39.5141	-80.4524	EQUITABLE GAS COMPANY
1156	GR	GSTG	39.5200	-80.4406	EQUITABLE GAS COMPANY
0	GR	GSTG	39.5212	-80.4380	EQUITABLE GAS COMPANY
1232	GR	GSTG	39.5173	-80.4378	EQUITABLE GAS COMPANY
1239	GR	GSTG	39.5195	-80.4481	EQUITABLE GAS COMPANY
1013	GR	GSTG	39.5150	-80.4448	EQUITABLE GAS COMPANY
1011	GR	GSTG	39.5205	-80.4388	EQUITABLE GAS COMPANY
1270	GR	GSTG	39.5151	-80.4270	EQUITABLE GAS COMPANY
1318	GR	GSTG	39.5141	-80.4313	EQUITABLE GAS COMPANY
1270	GR	GSTG	39.5158	80.4367	EQUITABLE GAS COMPANY
1316	GR	GSTG	39.5141	-80.4349	EQUITABLE GAS COMPANY
0	GR	GSTG	39.5161	-80.4500	EQUITABLE GAS COMPANY
0	GR	GSTG	39.5181	80.4403	EQUITABLE GAS COMPANY
1248	GR	GSTG	39.5207	-80.4493	EQUITABLE GAS COMPANY
1220	GR	OIL	39.5093	80.4285	GREENRIDGE OIL
0	GR	UNKWN	39.5003	80.4217	CONSOLIDATION COAL
0	GR	UNKWN	39.5065	80.4219	CONSOLIDATION COAL
1412	GR	ABD-GW	39.4946	-80.4219	SOUTH PENN OIL
1011	GR	ABDOGW	39.5215	-80.4388	HOPE CONSTRUCTION & REFINING
1228	GR	ABD-OW	39.5119	-80.4258	RAAD SUPPLY COMPANY
0	GR	UNKWN	39.4999	-80.4215	UNKNOWN
0	GR	UNKWN	39.5372	-80.4636	UNKNOWN
0	GR	UNKWN	39.5330	-80.4410	UNKNOWN
0	GR	UNKWN	39.5280	-80.4573	UNKNOWN
0	GR	UNKWN	39.5287	-80.4598	HOPE NATURAL GAS
0	GR	UNKWN	39.5045	-80.4481	UNKNOWN
0	GR	UNKWN	39.5128	-80.4478	UNKNOWN
0	GR	UNKWN	39.5160	-80.4480	UNKNOWN
0	GR	UNKWN	39.5202	-80.4382	UNKNOWN
0	GR	UNKWN	39.5155	-80.4300	UNKNOWN
0	GR	UNKWN	39.5078	-80.4215	UNKNOWN
0	GR	UNKWN	39.5271	-80.4592	CONSOLIDATION COAL

PROJ_FM_NM	SPUD_DATE	TD_FORM_NM	TOT_DEPTH	PERMIT
	8/8/1918	BIG INJUN /SD/	2040	00224
	8/29/1967	FIFTH SAND	3659	00294
	1/22/1918	HAMPSHIRE	3174	01008
	6/25/1918	CHEMUNG	3525	01010
	3/11/1918	THIRTY FOOT SD	2954	01011
	3/30/1918	GORDON	2331	01012
	12/27/1917	HAMPSHIRE	3079	01149
	9/9/1918	HAMPSHIRE	3074	00239
	8/17/1918	THIRTY FOOT SD	2911	00346
	5/2/1964		0	00261
		HAMPSHIRE	1557	00281
	3/2/1967	GORDON	3089	00290
	8/2/1967	BIG INJUN /SD/	2278	00292
			0	01102
			0	01107
			0	01124
			0	01168
			0	30012
UNKNOWN	7/29/1918	DEVONIAN /SD/	2926	01021
			0	01131
			0	70113
			0	01123
			0	70249
	6/6/1917	BIG INJUN /SD/	2378	30622
	5/12/1914	THIRTY FOOT SD	2892	30632
	5/23/1918	CHEMUNG	3440	30668
	1/2/1918	GORDON	3220	01009
UNKNOWN	6/7/1917	BIG INJUN /SD/	2278	01020
	2/12/1954	HAMPSHIRE	2305	00234
			0	00202
		HAMPSHIRE	2994	00223
		HAMPSHIRE	3214	00235
	7/2/1949	BIG INJUN /SD/	0	00200
			0	00201
	5/2/1950	GORDON	0	00207
	7/2/1952	GORDON	0	00208
	1/30/1950	GORDON	0	00211
	11/1/1950	GORDON	0	00212
	10/2/1950	GORDON	0	00217
	5/2/1951	GORDON	0	00220
	6/1/1951	GORDON	0	00221
	8/2/1953	GORDON	0	00225
			0	01939
			0	01940
	1/2/1969	FIFTH SAND	3604	00300
			2092	01017
			0	01125
			0	01126
		HAMPSHIRE	3488	30034.
		HAMPSHIRE	2759	30050
		HAMPSHIRE	2894	30642
			0	70894
			0	72287
			0	72290
			0	72294
			0	72295
			0	72319
			0	72321
			0	72322
			0	72323
			0	72326
			0	72327
		UNKNOWN	0	01986

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47049020760000	4/15/2010		CONSOLIDATION COAL	0 GR	UNKWN	39.5261	-80.4425 CONSOLIDATION COAL		UNKNOWN		0 02576
47049020780000	7/23/2010		CONSOLIDATION COAL	0 GR	UNKWN	39.5288	-80.4597 CONSOLIDATION COAL		UNKNOWN		0 02878
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/	1086 00355
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	FREEPORT	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	FREEPORT	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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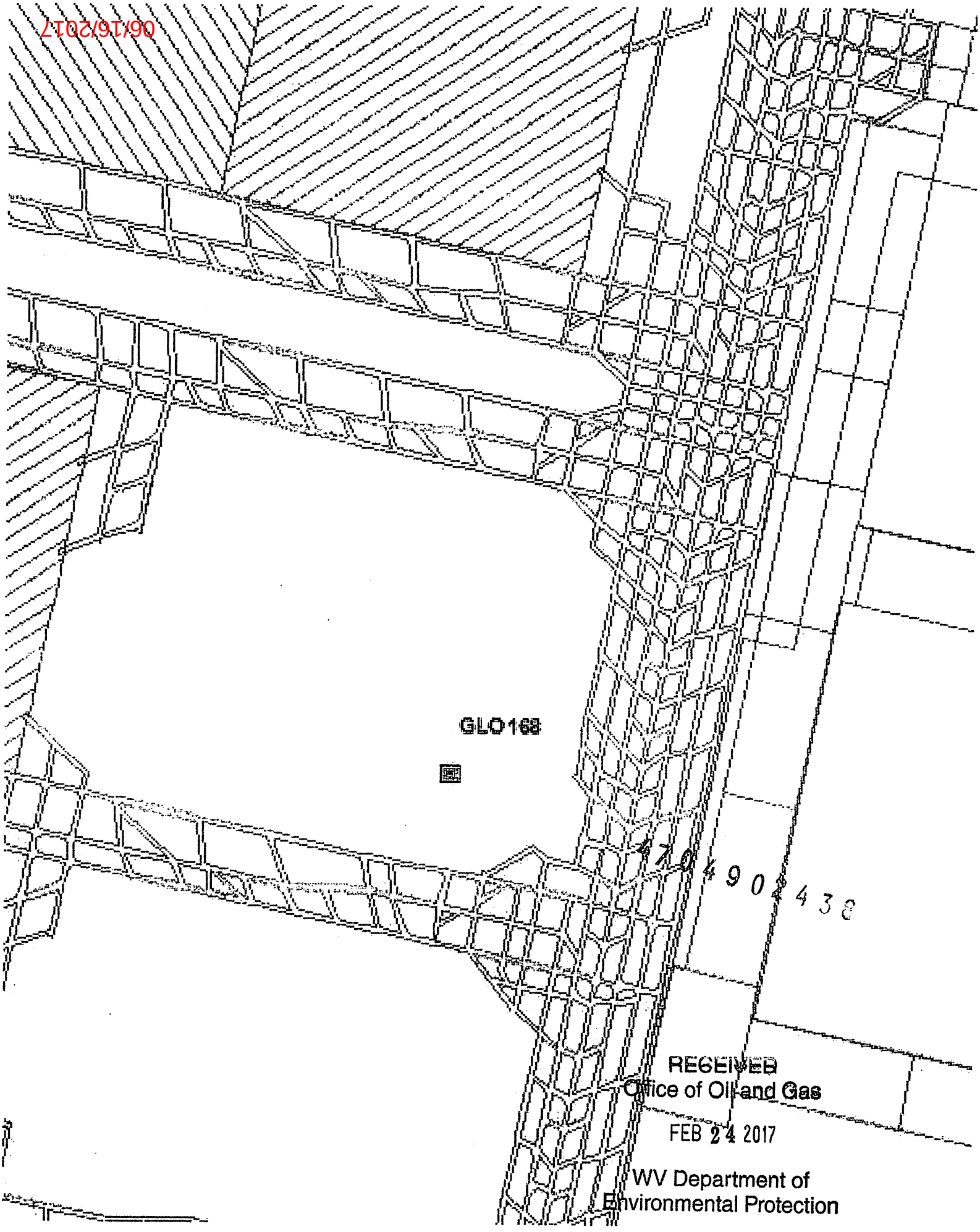

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west virginia department of environmental protection

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

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

March 18, 2014

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

Re: Cement Variance Request

Dear Sir or Madam,

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

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

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

Sincerely,

James Peterson by SCS

James Peterson
Environmental Resources Specialist / Permitting

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Promoting a healthy environment.

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

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

REPORT OF THE OFFICE

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

FINDINGS OF FACT

1.) Nabors Completion & Production Services Co. proposes the following cement blend:

- 2% Calcium Chloride (Accelerator)
- 0.25 % Super Flake (Lost Circulation)
- 94% Type "1" Cement
- 5.20 % Water

2.) Laboratory testing results indicate that the blend listed in Fact No.1 will achieve a 500 psi compressive strength within 6 hours and a 2,435 psi compressive strength within 24 hours.

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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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WW-9
(4/16)

API Number 47 - 49 -

Operator's Well No. GLO168H6

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:

SDW
3/2/2017

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

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

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

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

Additives to be used in drilling medium? See Attached

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

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

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

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

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

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

4704902438

Company Official Signature

Company Official (Typed Name) Victoria J. Roark

Company Official Title Permitting Supervisor

Subscribed and sworn before me this 21 day of February, 20 17

Rebecca L Wanstreet Notary Public

My commission expires 4-7-2020

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
REBECCA L. WANSTREET
EQT PRODUCTION COMPANY
PO BOX 280
BRIDGEPORT, WV 26330
My commission expires April 7, 2020

06/16/2017

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. GLO168H6

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

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: [signature]

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

4704902438

Title: COG Inspector Date: 3/2/2017

Field Reviewed? (X) Yes ( ) No

ECT Production Water plan

Offsite disposals for Marcellus wells

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

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

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

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

TRI COUNTY WASTE WATER MANAGEMENT, INC.
1487 Toms Run Road
Holbrook, PA 15341
724-627-7178 Plant
724-499-5647 Office
Greene County/Waynesburg
Permit # TC-1009

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

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

4704902438

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

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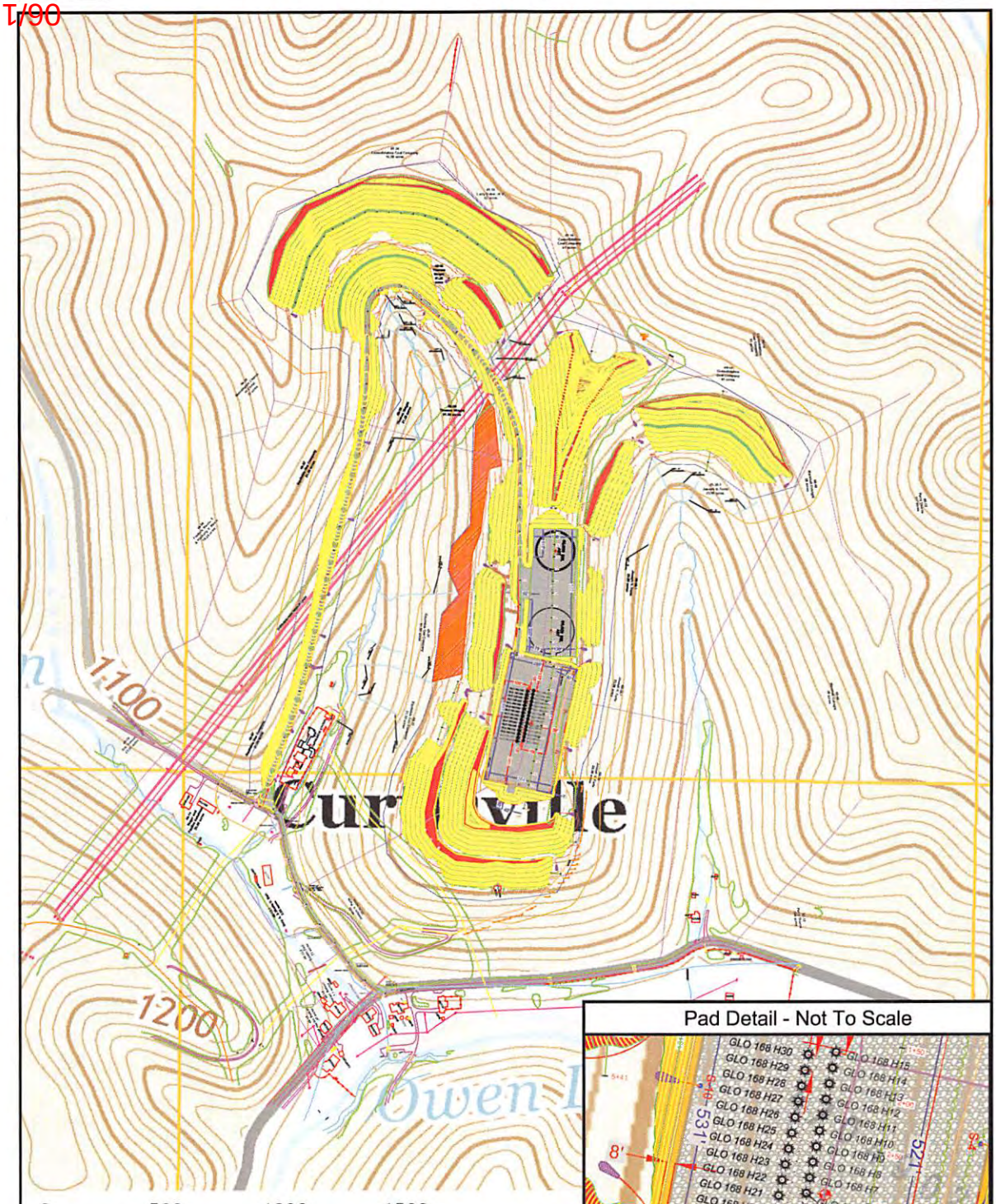
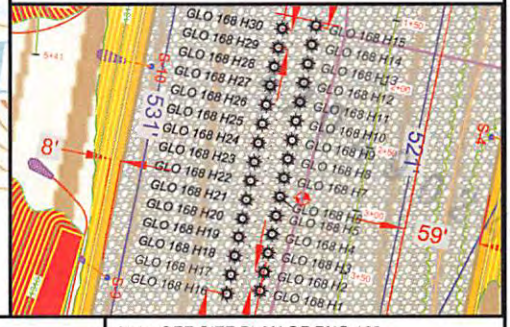


Pad Detail - Not To Scale



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.

SURVEYING AND MAPPING SERVICES PERFORMED BY:

ALLEGHENY SURVEYS, INC.

Birch River Office
Phone: (304) 649-8606
Fax: (304) 649-8608

1-800-482-8606

237 Birch River Road
P.O. Box 438
Birch River, WV 26610

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EQT

Where energy meets innovation.

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 _____

EQT Production

Permitting Supervisor

Title

1-26-17

Date

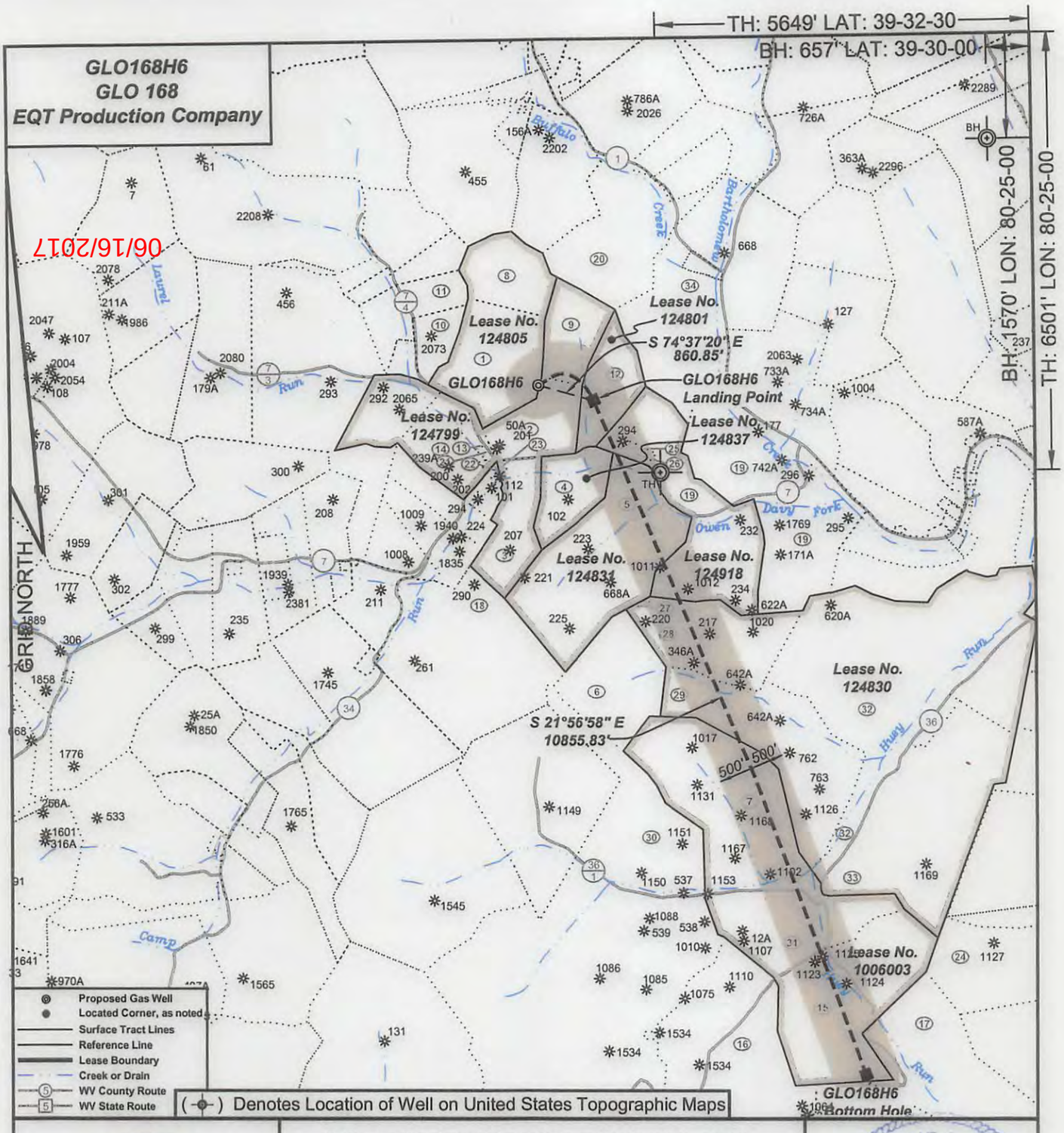
Date Prepared: July 28, 2016

SDW 3/2/2017

WV Oil and Gas Inspector

Title

Date



ALLEGHENY SURVEYS, INC.

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

DWAYNE A. HALL LICENSED No. 2089 SU STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR SEAL

FILE NO: 11-16
DRAWING NO: GLO 168 H6
SCALE: 1" = 2000'
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 11 20 17
OPERATOR'S WELL NO.: GLO168H6
API WELL NO
47 - 49 - 02438 HGA.
STATE COUNTY PERMIT

WELL TYPE: ☐ OIL ☒ GAS ☐ LIQUID INJECTION ☐ WASTE DISPOSAL
(IF GAS) PRODUCTION : ☐ STORAGE ☐ DEEP ☒ SHALLOW
LOCATION: ELEVATION: Original 1357' Proposed 1316' WATERSHED Laurel Run QUADRANGLE: Glover Gap
DISTRICT: Mannington COUNTY: Marion
SURFACE OWNER: Equitrans LP ACREAGE: 51.5
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
ADDRESS: 115 Professional Place PO Box 280, Bridgeport, WV 26330
DESIGNATED AGENT: Rex C. Ray
ADDRESS: 115 Professional Place PO Box 280, Bridgeport, WV 26330

GLO168H6
GLO 168
EQT Production Company

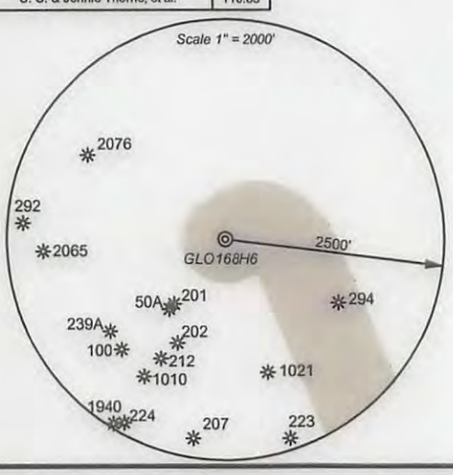
Tract I.D.	Tax Map No.	Parcel No.	County	District	Surface Tract Owner	Acres
1	49	37	Marion	Mannington	Equitrans LP	51.50
2	49	39	Marion	Mannington	John H. Musgrave, et al.	28.96
3	50	15	Marion	Mannington	Perry R. & Janice M. Thorne	5.61
4	50	14	Marion	Mannington	Melvin L. Gooch	28.00
5	50	13	Marion	Mannington	Marietta A. Meck	99.00
6	50	1	Marion	Mannington	Consolidation Coal Company	46.00
7	50	2	Marion	Mannington	David K. Phillips Trust	88.00
8	49	38	Marion	Mannington	Thomas B. Wright	30.00
9	49	39.1	Marion	Mannington	John H. Musgrave, et al.	23.90
10	49	36	Marion	Mannington	Frederic R. & Kimberly P. Steele	16.25
11	49	35	Marion	Mannington	Mannington Church of Christ Trustees	13.00
12	49	40	Marion	Mannington	Marshall & Dick Cartright	36.00
13	48	13.1	Marion	Mannington	Gary A. & Sheila D. Earl	2.02
14	48	14	Marion	Mannington	Roger & Pauline Eshelman	25.09
15	55	22	Marion	Mannington	Consolidation Coal Company	94.00
16	55	20	Marion	Mannington	Mark Ulrich, et al.	69.34
17	63	1	Marion	Mannington	Sportsman Square Circle Club	81.72
18	50	21	Marion	Mannington	Consolidation Coal Company	99.96
19	50	12	Marion	Mannington	Perry R. & Janice M. Thorne	180.09
20	49	14	Marion	Mannington	Consolidation Coal Company	61.00
21	48	13	Marion	Mannington	Harlen O. & Diana S. Batson	1.10
22	50	17	Marion	Mannington	Jason H. & Brandy L. Batson	0.32
23	50	16	Marion	Mannington	Richard H. & Lucy M. Lambert	0.46
24	64	21.1	Marion	Mannington	Sportsman Square Circle Club	77.53
25	50	12.2	Marion	Mannington	Nancy L. Efaw	0.13
26	50	12.1	Marion	Mannington	Nancy L. Efaw	2.01
27	50	13.1	Marion	Mannington	Marietta A. Meck	0.54
28	50	3.2	Marion	Mannington	Consolidation Coal Company	52.71
29	50	3.1	Marion	Mannington	Consolidation Coal Company	80.00
30	55	18	Marion	Mannington	Consolidation Coal Company, et al.	329.17
31	55	21	Marion	Mannington	Consolidation Coal Company	49.90
32	50	3	Marion	Mannington	State Soil Conservation	189.89
33	64	9	Marion	Mannington	William P. Russell	111.13
34	49	12	Marion	Mannington	S. C. & Jennie Thorne, et al.	116.83

06/16/2017

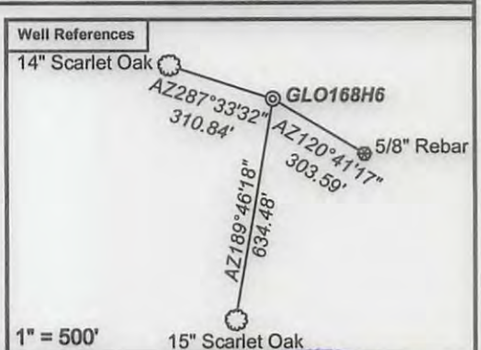
Notes:

GLO168H6 coordinates are
NAD 27 N: 374,274.94 E: 1,735,772.69
NAD 27 Lat: 39.523822 Long: -80.436693
NAD 83 UTM N: 4,375,069.24 E: 548,432.44
GLO168H6 Landing Point coordinates are
NAD 27 N: 374,046.66 E: 1,736,602.72
NAD 27 Lat: 39.523219 Long: -80.433742
NAD 83 UTM N: 4,375,003.91 E: 548,686.48
GLO168H6 Bottom Hole coordinates are
NAD 27 N: 363,977.72 E: 1,740,660.48
NAD 27 Lat: 39.495691 Long: -80.418993
NAD 83 UTM N: 4,371,956.88 E: 549,973.81
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.

Lease No.	Acres	Owner
124799	135	Anita K. Stanley, et al.
124801	36	Paula Diane Dennison, et al.
124918	85	Melissa Montgomery, et al.
124831	100	James John Thompson, et al.
124830	532	John Edward Abersold, et al.
1006003	250	XTO Energy Inc.
124837	28	Melvin L. Gooch, et al.



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



ALLEGHENY SURVEYS, INC.

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

DWAYNE A. HALL LICENSED No. 2089 SU STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR SEAL

FILE NO: 11-16
DRAWING NO: GLO 168 H6
SCALE: 1" = 2000'
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 11 20 17
OPERATOR'S WELL NO.: GLO168H6
API WELL NO
47 - 49 - 02438
STATE COUNTY PERMIT

WELL TYPE: ☐ OIL ☒ GAS ☐ LIQUID INJECTION ☐ WASTE DISPOSAL
(IF GAS) PRODUCTION : ☐ STORAGE ☐ DEEP ☒ SHALLOW
LOCATION: ELEVATION: Original 1357' Proposed 1316' WATERSHED Starkey Run and Wiley Fork QUADRANGLE: Glover Gap
DISTRICT: Mannington COUNTY: Marion
SURFACE OWNER: Equitrans LP ACREAGE: 51.5
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
ADDRESS: 115 Professional Place PO Box 280
Bridgeport, WV 26330

DESIGNATED AGENT: Rex C. Ray
ADDRESS: 115 Professional Place PO Box 280
Bridgeport, WV 26330

06/16/2017

WW-6A1
(5/13)

Operator's Well No. GLO168H6

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				

4704902438

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

06/16/2017

WW-6A1 attachment | Operator's Well No. | H6

Lease No.	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
	EQT Mineral Purchasing Group, et al. (Current Royalty Owner)		***	
124805	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
	Anita K. Stanley, et al. (current royalty owner)		***	
124799	Guy F. Musgrave, et al.	Pittsburgh & West Virginia Gas Company		DB 465/312 DB 510/487,
	Pittsburgh & West Virginia Gas Company	Equitable Gas Company		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
	Paula Diane Dennison, et al. (Current Royalty Owner)		***	
124801	Marshall Cartwright, et al.	Equitable Gas Company		DB 724/970
	Equitable Gas Company	Equitrans, Inc.		AB 12/279
	Equitrans, Inc.	Equitrans, LP		DB 46/660
	Equitrans, LP	EQT Production Company		DB 1114/130
	Melvin L. Gooch, et al. (Current Royalty Owner)		***	
124837	S.F. Gooch and Virginia A. Gooch	The Carter Oil Company		DB 220/144
	The Carter Oil Company	Hope Natural Gas Company		DB 226/396
	Hope Natural Gas Company	Pittsburgh and West Virginia Gas Company		DB 480/389 DB 510/487,
	Pittsburgh and West Virginia Gas Company	Equitable Gas Company		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
	Melissa Montgomery, et al. (Current Royalty Owner)		***	
124918	L.D. Beaty, et ux. (2/3 interest)	Southern Oil Company/C.D. Greenlee		DB 125/321
	C.D. Greenlee (1/3 interest)	T. N. Burnsdall		DB 131/468
	T. N. Burnsdall Estate	Southern Oil Company		DB 226/451
	Southern Oil Company	Pittsburg Oil & Gas Company		DB 319/145
	Pittsburg Oil & Gas Company	F. S. Deem		DB 339/598
	F. S. Deem	Rose M. Henley, et al.		DB 339/345
	Rose M. Henley, et al.	Equitable Gas Company		DB 526/259
	Equitable Gas Company	Equitrans, Inc.		AB 12/279
	Equitrans, Inc.	Equitrans, LP		DB 46/660
	Equitrans, LP	EQT Production Company		DB 1114/130
	James John Thompson, et al. (Current Royalty Owner)		***	
124831	J.M. Cordray, et ux.	South Penn Oil Company		DB 156/203
	South Penn Oil Company	South Penn Natural Gas Company		DB 353/201
	South Penn Natural Gas Company	Pittsburgh & West Virginia Gas Company		DB 480/383 DB 510/487,
	Pittsburgh & West Virginia Gas Company	Equitable Gas Company		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
	-			
	John Edward Abersold, et al. (Current Royalty Owner)		***	
124830	S.J. Gump et ux., et al.	South Penn Oil Company		DB 190/404
	South Penn Oil Company	South Penn Natural Gas Company		DB 353/201
	South Penn Natural Gas Company	Pittsburgh & West Virginia Gas Company		DB 480/383 DB 510/487,
	Pittsburgh & West Virginia Gas Company	Equitable Gas Company		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
	XTO Energy Inc. (Current Royalty Owner)		***	
1006003	XTO Energy Inc. (Tully to Onondaga)	EQT Production Company		DB 1164/921

***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,

Vicki Roark
Permitting Supervisor-WV

4704902438

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Environmental Protection

EQT Production 115 Professional Place I P.O. Box 280 I Bridgeport, WV 26330
T 304.848.0000 I F 304.848.0040 I www.eqt.com

WW-6AC
(1/12)

06/16/2017

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

Date of Notice Certification: 2/21/17

API No. 47- 49 -
Operator's Well No. GLO168H6
Well Pad Name: GLO168

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

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

UTM NAD 83 Easting: 548432.44
Northing: 4375069.24
Public Road Access: C/O Rt 7/4
Generally used farm name: Equitrans LP

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

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

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

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WW-6AC
(1/12)

06/16/2017

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

NOTARY SEAL
OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
REBECCA L. WANSTREET
EQT PRODUCTION COMPANY
PO BOX 280
BRIDGEPORT, WV 26330
My commission expires April 07, 2020

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

Rebecca L Wanstreet Notary Public

My Commission Expires 4-7-2020

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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WW-6A
(9-13)

06/16/2017

API NO. 47- 49 -
OPERATOR WELL NO. GLO168H6
Well Pad Name: GLO168

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: _____

*Please attach additional forms if necessary

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WW-6A
(8-13)

06/16/2017

API NO. 47- 49 -
OPERATOR WELL NO. GLO168H6
Well Pad Name: GLO168

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.

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

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

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

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

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

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

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

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

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

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

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

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

06/16/2017

API NO. 47- 49 -
OPERATOR WELL NO. GLO168H6
Well Pad Name: GLO168

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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WW-6A
(8/13)

06/16/2017

API NO. 47- 49 -
OPERATOR WELL NO. GLO168H6
Well Pad Name: GLO168

Notice is hereby given by:

Well Operator: EQT Production Company
Address: 115 Professional Place PO Box 280
Bridgeport WV 26330
Telephone: 304-848-0076
Email: vroark@eqt.com
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.

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
REBECCA L. WANSTREET
EQT PRODUCTION COMPANY
PO BOX 280
BRIDGEPORT, WV 26330
My commission expires April 07, 2020

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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06/16/2017

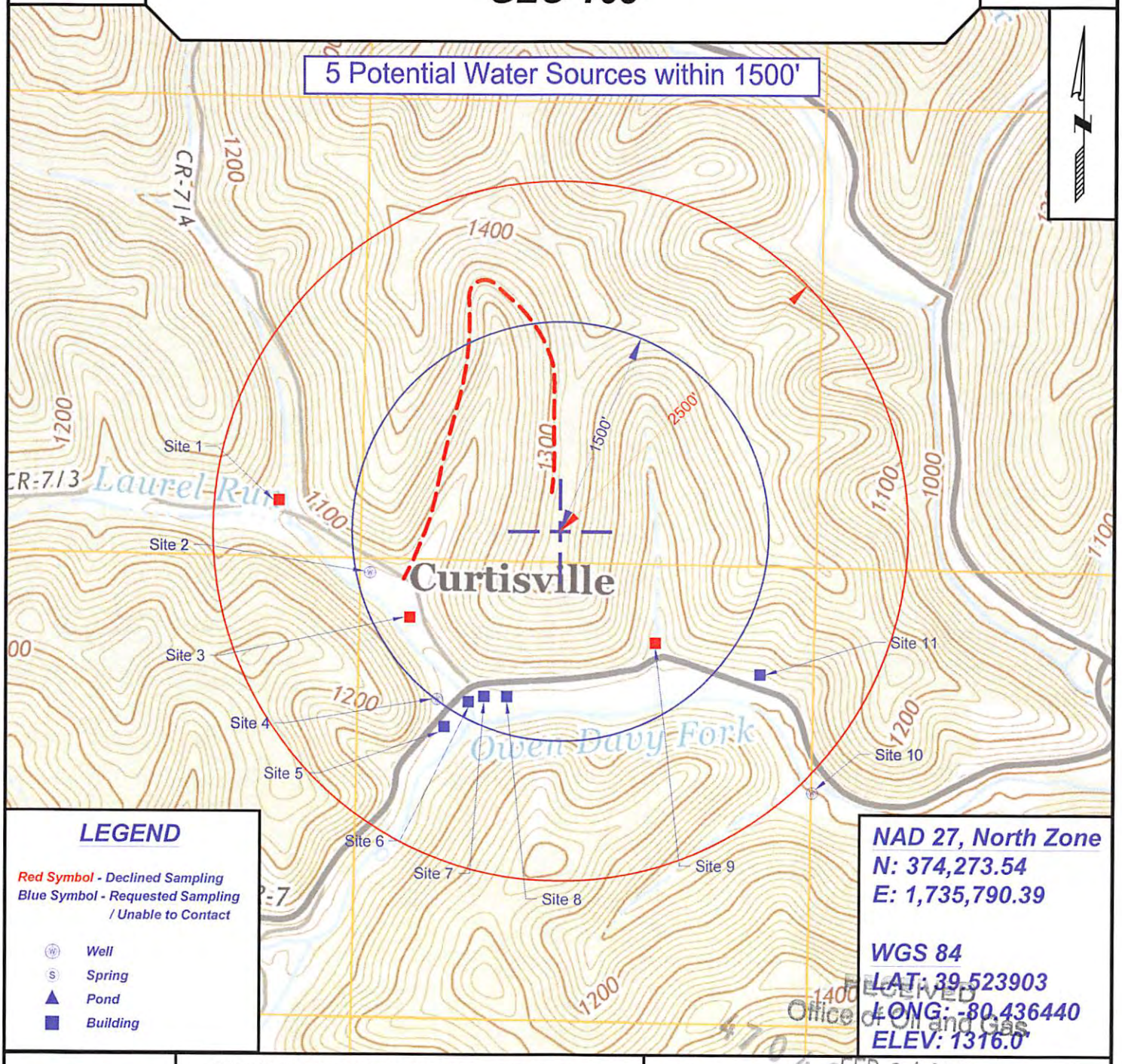
Topo Quad: Glover Gap **Scale:** 1" = 1000'

County: Marion **Date:** September 28, 2016

District: Mannington **Project No:** 11-18-M-16

Water

GLO 168



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:

EQT Production Company

P.O. Box 280
Bridgeport, WV 26330

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

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Street a
City, Sta

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

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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.

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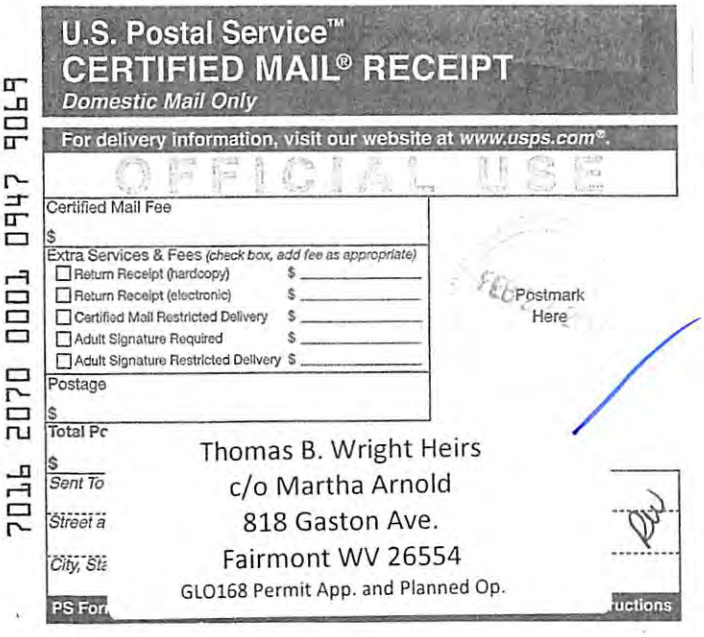
06/16/2017

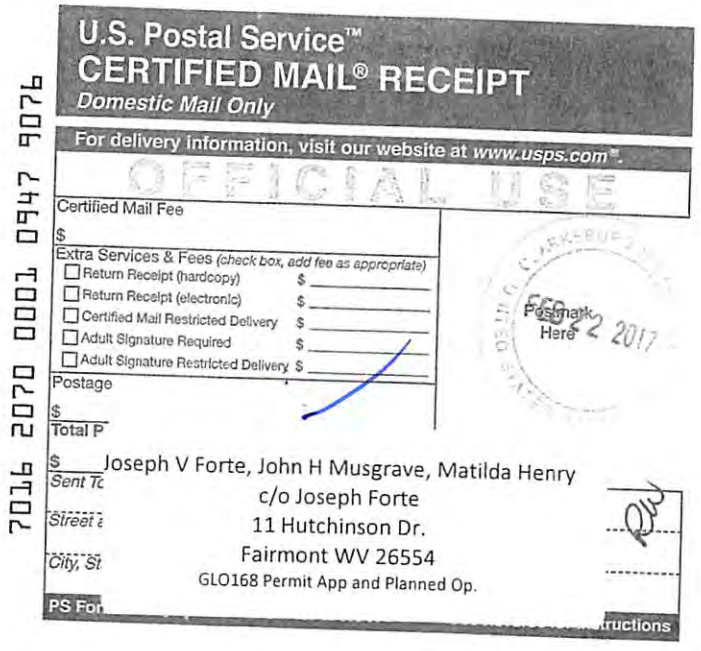
Surface Owners Access road & Other disturbance

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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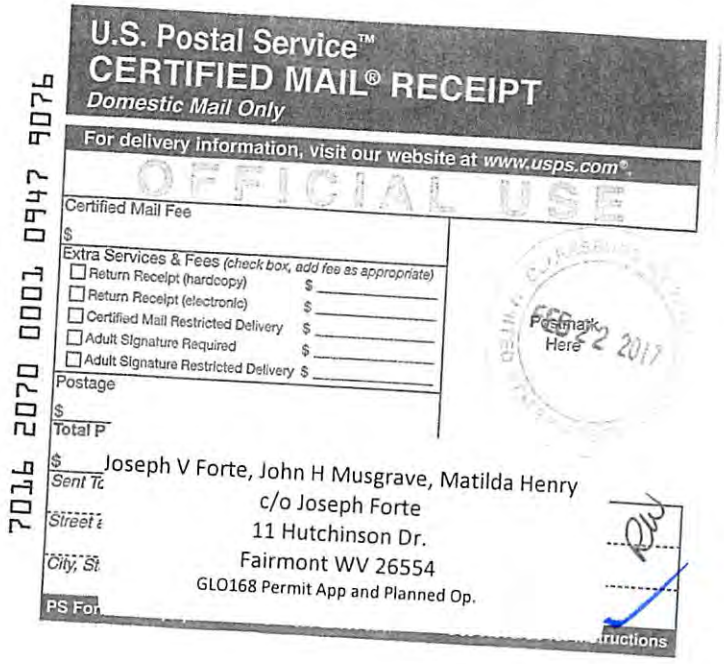
Surface Owner, AST

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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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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☐ Adult Signature Restricted Delivery $
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Street and A Engineering Operations Support Dept. Coal
1000 Consol Energy Drive
City, State, Canonsburg PA 15317
GLO168 Permit App.
PS Form 3800, April 2015

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Total Postage and Fees
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Sent To Consolidation Coal Company (OH)
Street and A c/o Murray American Energy Corporation
46226 National Road
City, State, St. Clairsville OH 43950
GLO168 Permit App.
PS Form 38

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Street ar c/o Murray American Energy Corporation
1 Bridge Street
City, Sta Monongah WV 26554
GLO168 Permit App.
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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
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☐ Adult Signature Restricted Delivery $
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Sent T Legacy Minerals, LLC
Street PO Box 23298
City, S Pittsburgh PA 15222-2006
GLO168 Permit App
PS Form 3800, April 2015

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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

4704902438

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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City, S
PS Fo

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Engineering Operations Support Dept. Coal
1000 Consol Energy Drive
Canonsburg PA 15317
GLO168 Permit App.

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(2)

06/16/2017

Water Well Owners:

Roger Eshelman
69 Lykac Road
Mannington, WV 26582

Gary Earl
23 Lylac Road
Mannington, WV 26582

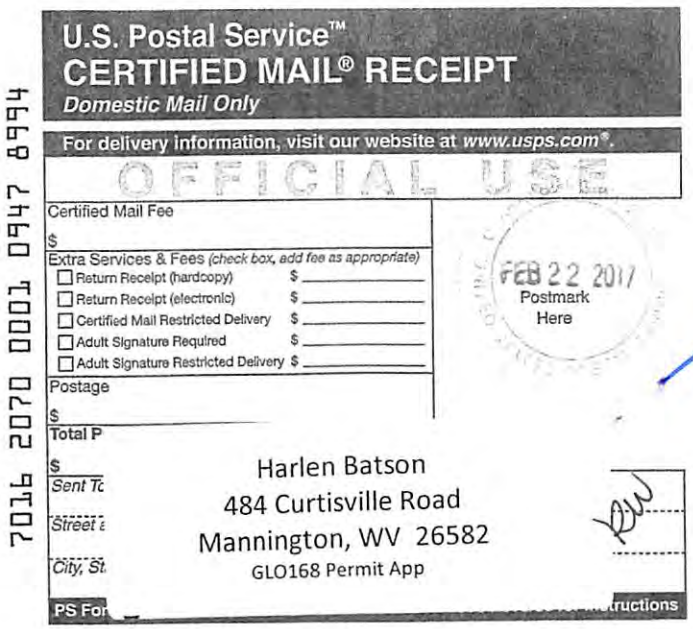
Harlen Batson
484 Curtisville Road
Mannington, WV 26582

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



06/16/2017

Water Well Owners:

Roger Eshelman
69 Lykac Road
Mannington, WV 26582

Gary Earl
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Mannington, WV 26582

Harlen Batson
484 Curtisville Road
Mannington, WV 26582

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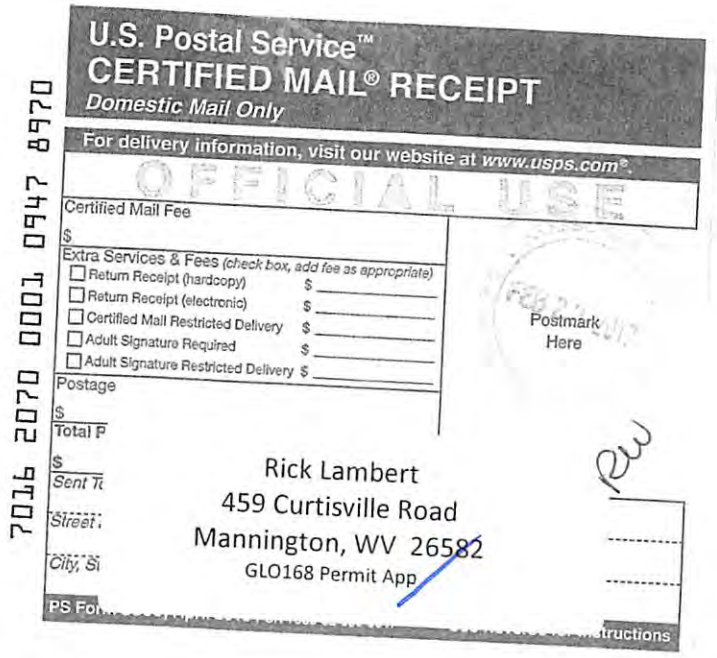
471 Curtisville, Road
Mannington, WV 26582

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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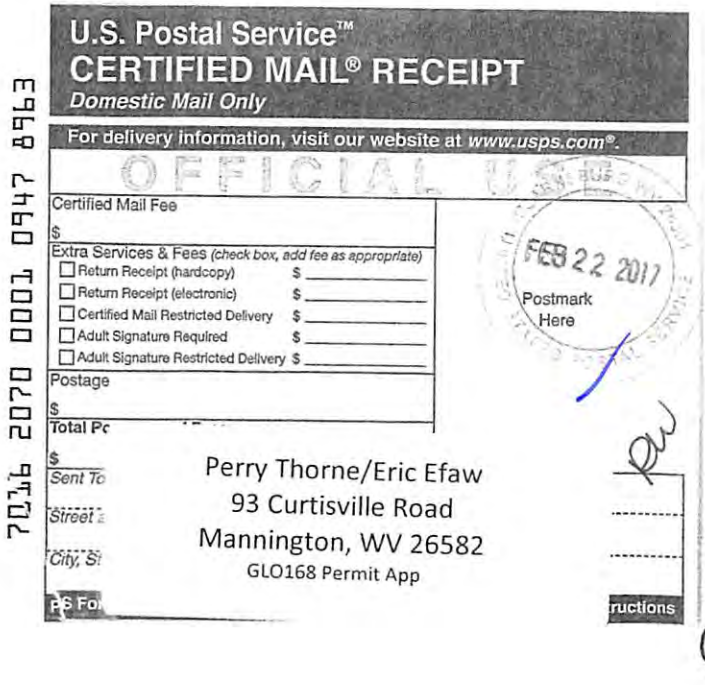

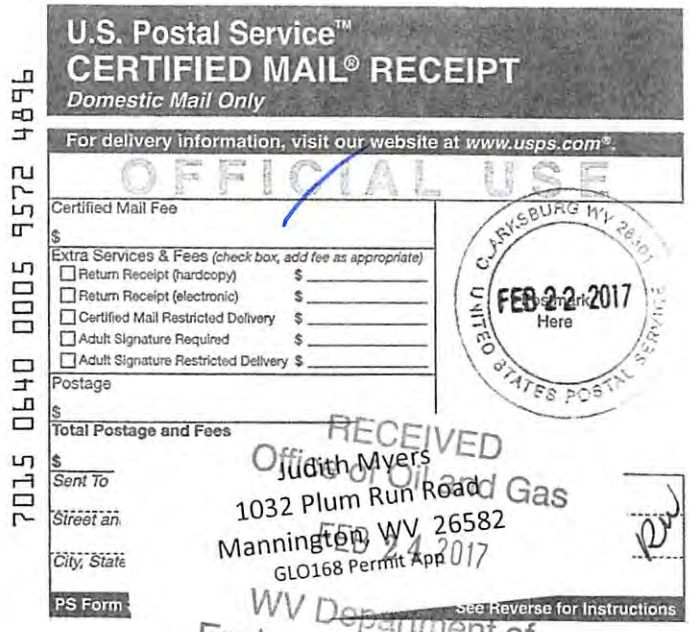

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WV Department of
Environmental Protection

06/16/2017

WW-6A3
(1/12)

Operator Well No. 124799

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 [X] 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:

[X] **SURFACE OWNER**
Name: Joseph Forte (John H. Musgrave & Joseph V. Forte)
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
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 57th 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.

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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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 requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@WV.gov.

06/16/2017

WW-6A3
(1/12)

Operator Well No. 124799

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 [X] CERTIFIED MAIL [ ] METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

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Notice is hereby provided to:

[X] **SURFACE OWNER**
Name: Joseph Forte (John H. Musgrave, Joseph V. Forte & Matilda 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:

47 061 02438

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 57th 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.

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:

RECEIVED
Office of Oil and Gas
FEB 24 2017
WV Department of
Environmental Protection

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 requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@WV.gov.

WW-6A3
(1/12)

Operator Well No. 124805

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 [x] 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:

[X] **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:

*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 (Lylac Road)
District:	Mannington/Tax Map 49 Parcel 38	Watershed:	Laurel Run
Quadrangle:	Glover Gap	Generally Used Farm Name:	Wright

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 57th 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.

Notice is hereby given by:

Well Operator:	EQT Production Company	Address:	115 Professional Place, Bridgeport, WV 26330
Telephone:	304-848-0074	EQT Representative:	Jamie I. Barbour
Facsimile:	304-848-0040		
Email:	EQTLandEntryNotice@eqt.com	Signature:	

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FEB 22 2017
WV Department of
Environmental Protection

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 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.

06/16/2017

WW-6A3
(1/12)

Operator Well No. 124799

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 [X] 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**

Name: _____

Address: _____

Name: _____

Address: _____

Name: _____

Address: _____

[X] **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	Approx. Latitude & Longitude:	39.52384/-80.43652
County:	Marion	Public Road Access:	CR 7/3 & 7 (Lylac & Curtisville Rds.)
District:	Mannington, Tax Map 49, Parcels 39 & 39.1	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 57th 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.

Notice is hereby given by:

Well Operator:	EQT Production Company	Address:	115 Professional Place, Bridgeport, WV 26330
Telephone:	304-848-0074	EQT Representative:	Jamie I. Barbour
Facsimile:	304-848-0040		
Email:	EQTLandEntryNotice@eqt.com	Signature:	

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 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.

06/16/2017

WW-6A3
(1/12)

Operator Well No. 124799

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 [X] 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**

Name: _____

Address: _____

Name: _____

Address: _____

Name: _____

Address: _____

[X] **COAL OWNER OR LESSEE**

Name: Murray American Energy, Inc.
Attn.: Troy Freels

Address: 1 Bridge Street
Monongah, WV 26554

[ ] **MINERAL OWNER(S)**

Name: _____

Address: _____

Name: _____

Address: _____

*Please attach additional forms if necessary

4704902438

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 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 57th 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.

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

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 requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@WV.gov.

WW-6A4
(1/12)

06/16/2017

Operator Well No. GLO168H6

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

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

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 02/21/2017 **Date Permit Application Filed:** 02/21/2017

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

☒ HAND DELIVERY ☐ CERTIFIED MAIL RETURN RECEIPT REQUESTED

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

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

Name: See Attached
Address:

Name:
Address:

Notice is hereby given:

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

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

UTM NAD 83 Easting: 548432.44
Northing: 4375069.24
Public Road Access: C/O Rt 7/4
Generally used farm name: Equitrans LP

This Notice Shall Include:

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

Notice is hereby given by:

Well Operator: EQT Production Company
Address: 115 Professional Place PO Box 280
Bridgeport WV 26330
Telephone: 304-848-0076
Email: vroark@eqt.com
Facsimile: 304-848-0041

Authorized Representative: Victoria Roark
Address: 115 Professional Place PO Box 280
Bridgeport WV 26330
Telephone: 304-848-0076
Email: vroark@eqt.com
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.

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Office of Oil & Gas
FEB 24 2017
WV Department of
Environmental Protection

06/16/2017

WW-6A4W
(1/12)

Operator Well No. GLO168H6

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	UTM NAD 83 Easting:	548432 44
County:	Marion	Northing:	4375069 24
District:	Mannington	Public Road Access:	C/O Rt 7/4
Quadrangle:	Glover Gap	Generally used farm name:	Equitrans LP
Watershed:	Laurel Run		

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

Signature: Ralph Deer
Date: 2/21/17

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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Office of Oil and Gas

FEB 24 2017

WV Department of
Environmental Protection

WW-6A5
(1/12)

06/16/2017

Operator Well No. GLO168H6

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
RETURN RECEIPT REQUESTED

☐ HAND
DELIVERY

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

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

UTM NAD 83 Easting: 548432.44
Northing: 4375069.24
Public Road Access: C/O Rt 7/4
Generally used farm name: Equitrans LP

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

Well Operator: 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.

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FEB 24 2017
WV Department of
Environmental Protection

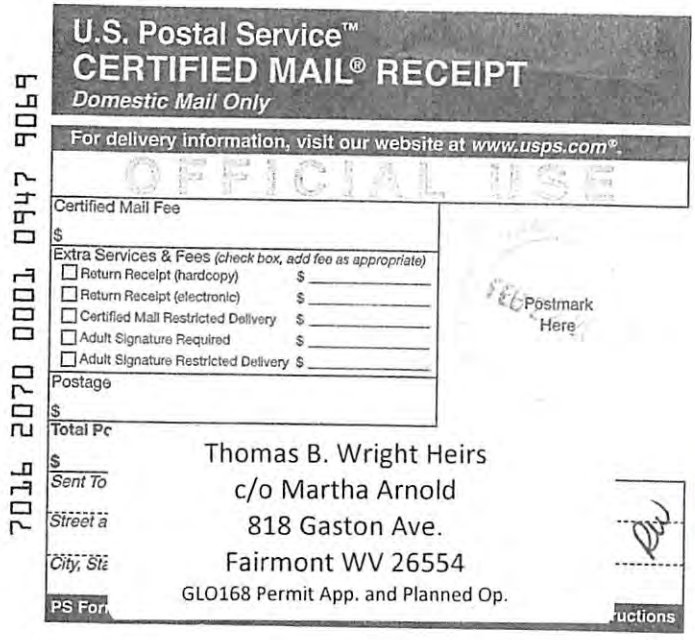
06/16/2017

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



4704902438

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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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☐ Adult Signature Restricted Delivery $
Postage
$
Total Pc
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Sent To
Street a
City, Sta
Postmark Here
Thomas B. Wright Heirs
c/o Martha Arnold
818 Gaston Ave.
Fairmont WV 26554
GLO168 Permit App. and Planned Op.
PS For
ructions

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☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage
$
Total P
$
Sent To
Street a
City, St
Postmark Here
FEB 2 2017
Joseph V Forte, John H Musgrave, Matilda Henry
c/o Joseph Forte
11 Hutchinson Dr.
Fairmont WV 26554
GLO168 Permit App and Planned Op.
PS For
ructions

4704902

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

06/16/2017

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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- ☐ Return Receipt (hardcopy) $
- ☐ Return Receipt (electronic) $
- ☐ Certified Mail Restricted Delivery $
- ☐ Adult Signature Required $
- ☐ Adult Signature Restricted Delivery $

Postage
$
Total P

Postmark Here
FEB 22 2017

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

PS For ... Instructions

4704902438

RECEIVED
Office of Oil and Gas
FEB 24 2017
WV Department of
Environmental Protection

06/16/2017

WW-6AW
(1-12)

API NO. 47- 49 -
OPERATOR WELL NO. GLO168H6
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:	WV	UTM NAD 83 Easting:	548432.44
County:	Marion	Northing:	4375069.24
District:	Mannington	Public Road Access:	C/O Rt 7/4
Quadrangle:	Glover Gap	Generally used farm name:	Equitrans LP
Watershed:	Laurel Run		

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.

*Please check the box that applies

- ☒ SURFACE OWNER
- ☒ SURFACE OWNER (Road and/or Other Disturbance)
- ☒ SURFACE OWNER (Impoundments/Pits)
- ☐ COAL OWNER OR LESSEE
- ☐ COAL OPERATOR
- ☐ WATER PURVEYOR
- ☐ OPERATOR OF ANY NATURAL GAS STORAGE FIELD

FOR EXECUTION BY A NATURAL PERSON
Signature: _____
Print Name: _____
Date: _____

FOR EXECUTION BY A CORPORATION, ETC.
Company: Equitrans LP
By: Ralph Deer
Its: VP Land
Signature: Ralph Deer
Date: 2/21/17

Oil and Gas Privacy Notice:
The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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Office of Oil and Gas
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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 57th Street, SE
Charleston, WV 25304

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

GLO168H1	GLO168H2	GLO168H3	GLO168H4
GLO168H5 49-02438	GLO168H6	GLO168H7	GLO168H8
GLO168H9	GLO168H10	GLO168H11	GLO168H12
GLO168H13	GLO168H14	GLO168H15	GLO168H16
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.

4704902438

Very Truly Yours,

Gary K. Clayton

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

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WV Department of
Environmental Protection

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

E.E.O./AFFIRMATIVE ACTION EMPLOYER

06/16/2017

Chemical Names and CAS numbers for Frac additives

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

4704902430

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Office of Oil and Gas

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WV Department of
Environmental Protection

06/16/2017

Anticipated Frac Additives
Chemical Names and CAS numbers

Material	Ingredient	CAS Number
Water		
Sand	Hydrotreated light petroleum distillate	14808-60-7
Friction Reducer	Tributyl tetradecyl phosphonium chloride	64742-47-8
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Buffering Agent		584-08-7

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Office of Oil and Gas

FEB 24 2017

WV Department of
Environmental Protection

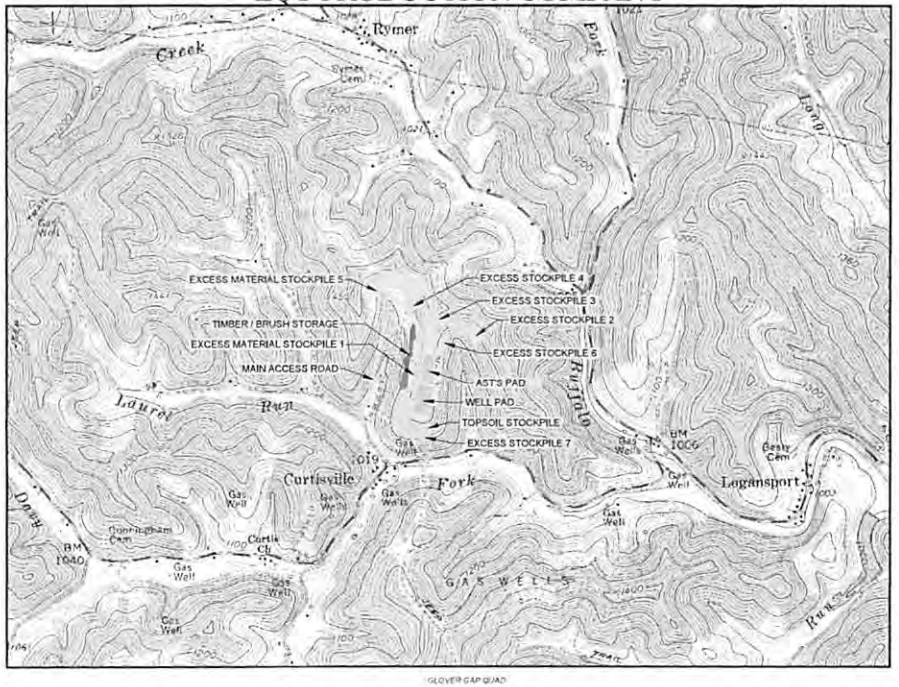
EQT - GLO 168

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

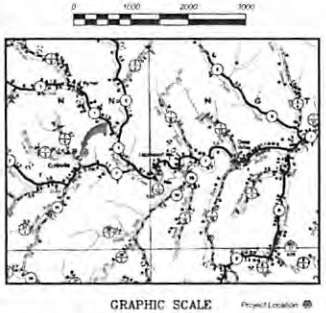
EQT PRODUCTION COMPANY

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: 39.524068 / LONG. -80.436461
GLO 168 H11 - LAT: 39.524108 / LONG. -80.436451
GLO 168 H12 - LAT: 39.524149 / LONG. -80.436441
GLO 168 H13 - LAT: 39.524189 / LONG. -80.436430
GLO 168 H14 - LAT: 39.524230 / LONG. -80.436420
GLO 168 H15 - LAT: 39.524270 / LONG. -80.436409
GLO 168 H16 - LAT: 39.523698 / LONG. -80.436648
GLO 168 H17 - LAT: 39.523738 / LONG. -80.436637
GLO 168 H18 - LAT: 39.523779 / LONG. -80.436627
GLO 168 H19 - LAT: 39.523819 / LONG. -80.436616
GLO 168 H20 - LAT: 39.523859 / LONG. -80.436606
GLO 168 H21 - LAT: 39.523900 / LONG. -80.436595
GLO 168 H22 - LAT: 39.523940 / LONG. -80.523585
GLO 168 H23 - LAT: 39.523981 / LONG. -80.436574
GLO 168 H24 - LAT: 39.524021 / LONG. -80.436564
GLO 168 H25 - LAT: 39.524061 / LONG. -80.436554
GLO 168 H26 - LAT: 39.524102 / LONG. -80.436543
GLO 168 H27 - LAT: 39.524142 / LONG. -80.436533
GLO 168 H28 - LAT: 39.524182 / LONG. -80.436522
GLO 168 H29 - LAT: 39.524223 / LONG. -80.436512
GLO 168 H30 - LAT: 39.524263 / LONG. -80.436501



SITE LOCATIONS WGS 84 (WV NORTH ZONE)	LATITUDE	LONGITUDE
Proposed Well Pad	39.523903	-80.436440
Proposed 40,000 BBL AST	39.523980	-80.436113
Proposed 60,000 BBL AST	39.523854	-80.436160
Proposed Access Road Site Entr.	39.523937	-80.440416



West Virginia Coordinate System of 1983
State Plane Grid North
Elevations NAVD88
Established By Survey Grade GPS

AFFECTED PROPERTIES

JOSEPH V. FORTE
TAX MAP #9 - PARCEL 36
29.95 ACRES
SITE DISTURBANCE:

TOPSOIL STOCKPILE = 2.64 ACRES
EXCESS MATERIAL STOCKPILE = 3.73 ACRES
WELL PAD = 3.21 ACRES

TIMBER REMOVAL = 7.94 ACRES

EQUITABLE GAS COMPANY
TAX MAP #9 - PARCEL 37
51.50 ACRES
SITE DISTURBANCE:

MAIN ACCESS ROAD = 8.27 ACRES
AST'S PAD = 1.21 ACRES
TIMBER / BRUSH STORAGE = 1.81 ACRES
TOPSOIL STOCKPILE = 1.38 ACRES
EXCESS MATERIAL STOCKPILES = 5.04 ACRES
WELL PAD = 2.08 ACRES

TIMBER REMOVAL = 18.12 ACRES

THOMAS WRIGHT
TAX MAP #9 - PARCEL 39
81.25 ACRES
SITE DISTURBANCE:

MAIN ACCESS ROAD = 7.01 ACRES
TIMBER / BRUSH STORAGE = 0.44 ACRES
EXCESS MATERIAL STOCKPILES = 14.90 ACRES

TIMBER REMOVAL = 21.21 ACRES

JOSEPH V. FORTE
TAX MAP #9 - PARCEL 39.1
23.98 ACRES
SITE DISTURBANCE:

AST'S PAD = 3.42 ACRES
EXCESS MATERIAL STOCKPILES = 11.15 ACRES
WELL PAD = 1.11 ACRES

TIMBER REMOVAL = 14.64 ACRES

APPROVED
WVDEP OOG
WJJ 5 / 24 / 2017

Project Contacts

Justin Nixon- EQT Production Company
304-848-0037 Office

Surveyor & Engineer

Ben Singleton - PS - Allegheny Surveys Inc
304-649-8606 Office

Tom Corathers - PE, PS - Hornor Brothers Engineers
304-624-6445 Office

WELL LOCATION RESTRICTIONS

Well Pad complies with the Well Location Restrictions of WV code 22-6A-12

** 250' from an existing well or developed spring used for human or domestic animals.*

** 625' to occupied dwelling or barn greater 2500 S.F. used for poultry or dairy measured from the center of the pad.*

** 100' from edge of disturbance to wetlands, perennial streams, natural or artificial lake, pond or reservoir.*

** 300' from edge of disturbance to naturally reproducing trout streams.*

** 1000' of surface or ground water intake to a public water supply.*

Design Certification

The drawings, construction notes, and reference diagrams attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Oil and Gas §35-4-21.

The information reflects a 40,000 BBL Above Ground Storage Tank (AST) Pad with secondary containment and a 60,000 BBL Above Ground Storage Tank Pad.

Hornor Brothers Engineers make no certifications relating to the design, construction or materials associated with the Above Ground Storage Tank (AST).

FLOODPLAIN CONDITIONS

DO SITE CONSTRUCTON ACTIVITIES TAKE PLACE IN FLOODPLAIN:	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR:	NO
HEC-RAS STUDY COMPLETED:	N/A
FLOODPLAIN SHOWN ON DRAWINGS:	N/A
FIRM MAP NUMBER(S) FOR SITE:	54049C0065D & 54049C0070D
ACREAGES OF CONSTRUCTION IN FLOODPLAIN:	N/A

SHEET INDEX

COVER SHEET / LOCATION MAP ---------- 1
EXISTING CONDITIONS PLAN ---------- 2
SCHEDULE 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 SECTIONS ---------- 12-14
AST PAD PROFILE & CROSS SECTIONS ---------- 15-16
MAIN ACCESS ROAD PROFILE & CROSS SECTIONS ---------- 17-23
EXCESS MATERIAL STOCKPILES PROFILES & SECTIONS ---------- 24-38
TOPSOIL STOCKPILE PROFILE & CROSS SECTIONS ---------- 39-40
CONSTRUCTION DETAILS ---------- 41-43
RECLAMATION PLANS ---------- 44-49

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.

DATE	REVISIONS

Date: 12/7/2016
Scale: As Noted
Designed By: TRC
File No.
Page 1 of 49

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

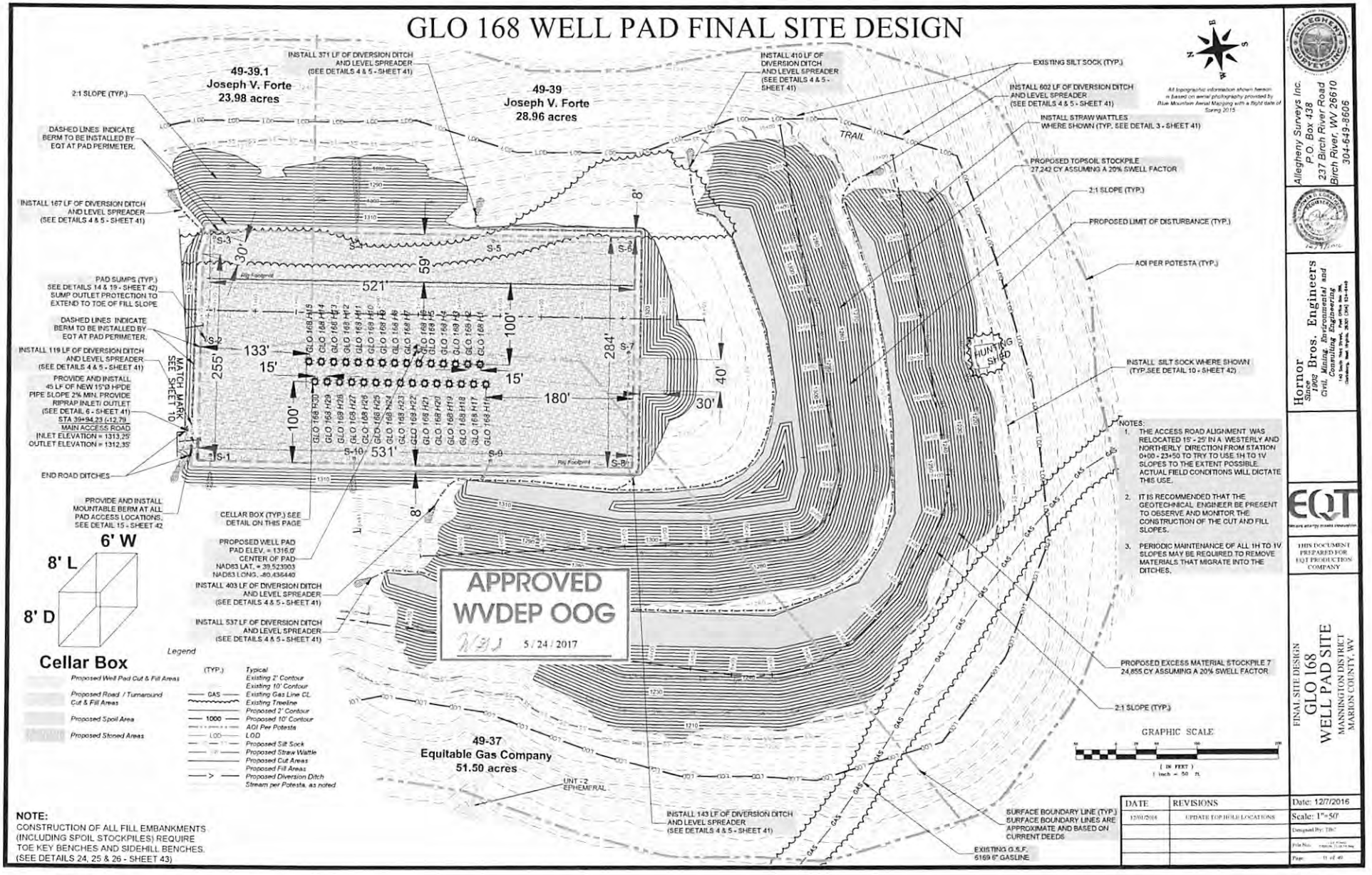
Hornor Bros. Engineers
Since 1902
Civil, Mining, Environmental and Consulting Engineering

EQT
Where energy meets innovation

THIS DOCUMENT PREPARED FOR EQT PRODUCTION COMPANY

COVER - LOCATION SHEET
GLO 168
WELL PAD SITE
MANNINGTON DISTRICT
MARION COUNTY, WV

GLO 168 WELL PAD FINAL SITE DESIGN



APPROVED
WVDEP OOG
5/24/2017

6' W
8' L
8' D
Cellar Box

Legend

Proposed Well Pad Cut & Fill Areas
Proposed Road / Turnaround Cut & Fill Areas
Proposed Spoil Area
Proposed Stoned Areas

(TYP.) Typical
Existing 2' Contour
Existing 10' Contour
GAS Existing Gas Line CL
Existing Treeline
Proposed 2' Contour
1000 Proposed 10' Contour
AOI Per Potesta
LOD LOD
Proposed Silt Sock
Proposed Straw Wattle
Proposed Cut Areas
Proposed Fill Areas
Proposed Diversion Ditch
Stream per Potesta, as noted

NOTES:
1. THE ACCESS ROAD ALIGNMENT WAS RELOCATED 15' - 25' IN A WESTERLY AND NORTHERLY DIRECTION FROM STATION 0+00 - 23+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.

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

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
12/01/2016	UPDATE TOP HOLE LOCATIONS

Date: 12/7/2016
Scale: 1"=50'
Designed By: TBC
File No.:
Page: 11 of 40

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

Hornor Bros. Engineers
Since
Civil, Mining, Environmental and Consulting Engineering
140 South Third Street, Post Office Box 186, Clarksburg, West Virginia 26302 (304) 624-4108

EQT
We are all by nature innovators

THIS DOCUMENT PREPARED FOR EQT PRODUCTION COMPANY

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

4704902438

EQT - GLO 168

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

EQT PRODUCTION COMPANY

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
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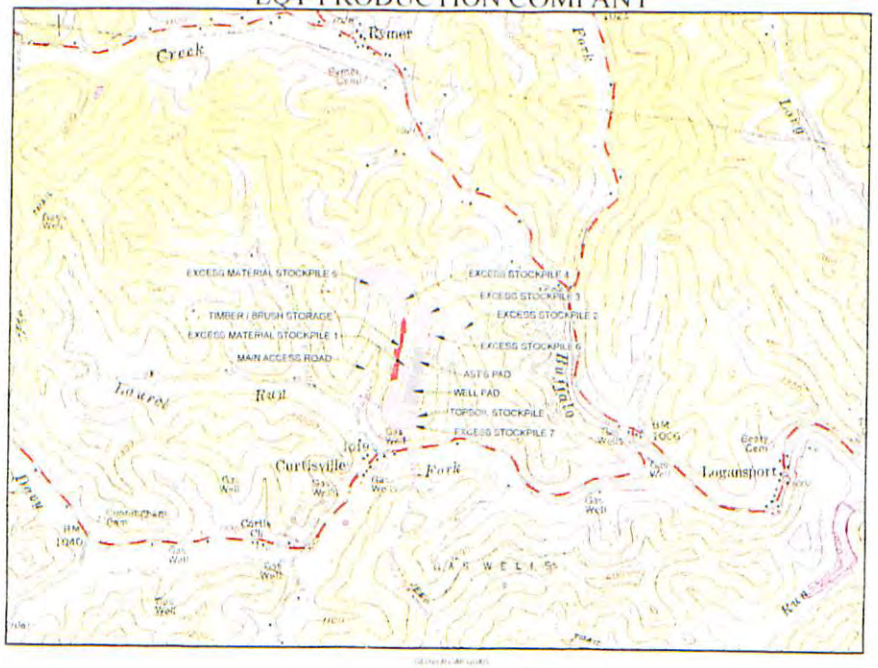

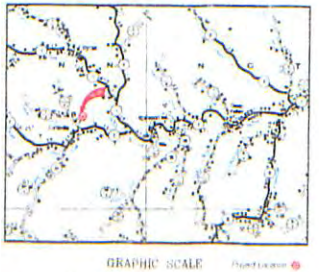

West Virginia Coordinate System of 1983
State Plane Grid North
Elevations: NAVD88
Established By Survey Grade GPS

4704902438

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304.848.0037 Office

Surveyor & Engineer

Ben Sangston, PS, Allegheny Surveys Inc
304.649.8606 Office

Tom Gouldtrap, PE, PS, Horner Brothers Engineers
304.624.6445 Office

SDW
2/27/2017

FLOODPLAIN CONDITIONS

DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR	NO
HEC HAS STUDY COMPLETED	N/A
FLOODPLAIN SHOWN ON DRAWING	N/A
FIRM MAP NUMBER(S) FOR SITE	54049C0050D & 54049C0070D
ACREAGES OF CONSTRUCTION IN FLOODPLAIN	N/A

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DATE	REVISIONS

Date 12/7/2016
Scale As Noted

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

Horner Bros. Engineers
Office: Civil Mine Engineering
Consulting

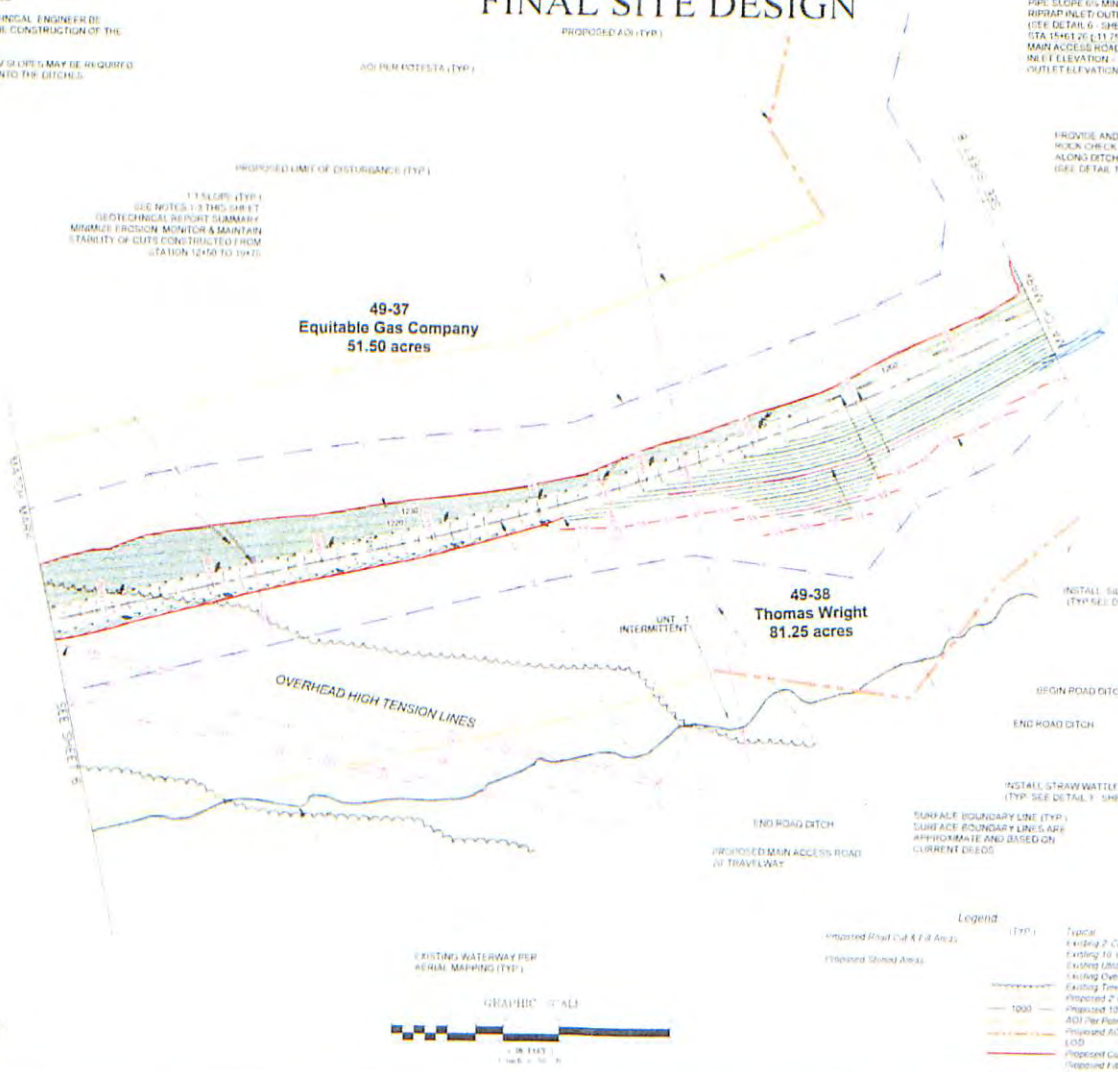
EQT

THIS DOCUMENT PREPARED FOR EQT PRODUCTION COMPANY

COVER LOCATION SHEET
GLO 168
WELL PAD SITE
MAVINGTON DISTRICT
MARSHALL COUNTY, WV

4704902438

GLO 168 WELL PAD
FINAL SITE DESIGN



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4704902438

Slope detail

4704902438

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

Horner Bros. Engineers

EQT

GLO 168
WELL PAD SITE

DATE	REVISIONS

Date: 12/7/2016
Scale: 1" = 80'