

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-051-01758 County Marshall District Franklin
Quad Powhatan Point 7.5' Pad Name Greer Field/Pool Name _____
Farm name PPG Industries, Inc. Well Number 1N-6HM
Operator (as registered with the OOG) Tug Hill Operating, LLC
Address 1320 South University Drive, Suite 500 City Ft. Worth State TX Zip 76107

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,400,802.2 Easting 514,011.6
Landing Point of Curve Northing 4,400,668.1 Easting 513,580.7
Bottom Hole Northing 4,402,620.3 Easting 512,421.7

Elevation (ft) 1251' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)
SOBM; Base oil, osmotic inhibitor, weighting agent, viscosifier, emulsifier, hardness buffer, fluid loss additive, LCM, shale inhibitor, de-foamer, soaping agent, coagulant, flocculant; Specific additives per WSSP and Permit.

Date permit issued 1/23/2017 Date drilling commenced 4/10/2017 Date drilling ceased 7/2/2017
Date completion activities began 12/12/2017 Date completion activities ceased 3/5/2018
Verbal plugging (Y/N) n/a Date permission granted n/a Granted by n/a

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 70' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1600' Void(s) encountered (Y/N) depths N
Coal depth(s) ft Sewickley 785' TVD, Pittsburgh 879' TVD Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by: _____

Reviewed
on 10/23/18

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API 47-051 - 01758 Farm name PPG Industries, Inc. Well number 1N-6HM

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	26	20	120	NEW	94.5#	N/A	YES
Surface	17 1/2	13 3/8	966	NEW	54.5#	N/A	YES
Coal	17 1/2	13 3/8	966	NEW	54.5#	N/A	YES
Intermediate 1	12 1/4	9 5/8	2619	NEW	36#	N/A	YES
Intermediate 2							
Intermediate 3							
Production	8 3/4	5 1/2	14,414	NEW	20#	N/A	YES
Tubing		2 3/8	6653	NEW	4.7#	N/A	
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	A	200	15.6	1.19	238	0	8
Surface	A	783	15.6	1.19	932	0	8
Coal	A	783	15.6	1.19	932	0	8
Intermediate 1	A	878	15.6	1.19	1045	0	8
Intermediate 2							
Intermediate 3							
Production	A	2856	14.5	1.17	3341	0	8
Tubing							

Drillers TD (ft) 14,427 Loggers TD (ft) _____
 Deepest formation penetrated Marcellus Plug back to (ft) n/a
 Plug back procedure n/a

Kick off depth (ft) 6049

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING 3 centralizers on surface casing at equal distance
Info modata - 1 centralizer every other joint
 Production - one centralizer every other joint in lateral, one centralizer every joint through curve, one centralizer every other joint to surface.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

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API 47- 051 - 01758 Farm name PPG Industries, Inc. Well number 1N-6HM

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	See attached				

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
	attached							

Please insert additional pages as applicable.

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API 47- 051 - 01758 Farm name PPG Industries, Inc. Well number 1N-6HM

PRODUCING FORMATION(S)	DEPTHS	
Marcellus	6,316 - 6,393' TVD	6,862 - 14,427' MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1040 psi Bottom Hole _____ psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 2320 mcfpd Oil 312 bpd NGL _____ bpd Water 1512 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
see attached	0		0		

Please insert additional pages as applicable.

Drilling Contractor Nabors Drilling USA
Address 505 West Greens Road, Suite 1000 City Houston State TX Zip 77067

Logging Company N/A
Address _____ City _____ State _____ Zip _____

Cementing Company C&J Well Services
Address 380 Southpointe Boulevard, Suite 210 City Canonsburg State PA Zip 15317

Stimulating Company Halliburton Energy Services, Inc.
Address 121 Champion Way, Suite 200 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Sean Cassor Telephone 817-632-5200
Signature _____ Title Engineer Date 9/7/18

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

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**Greer 1S-6HM
Perforation Record**

Stage	Date Perforated	Bottom Perf (ft)	Top Perf (ft)	Number of Perfs	Formation
1	12/13/2017	14,319	14,270	2	Marcellus
2	12/13/2017	14,022	13,891	48	Marcellus
3	12/14/2017	13,847	13,716	48	Marcellus
4	12/14/2017	13,672	13,541	48	Marcellus
5	12/16/2017	13,497	13,366	48	Marcellus
6	12/18/2017	13,322	13,191	48	Marcellus
7	12/21/2017	13,147	13,016	48	Marcellus
8	12/23/2017	12,972	12,841	48	Marcellus
9	12/24/2017	12,797	12,666	48	Marcellus
10	12/30/2017	12,622	12,491	48	Marcellus
11	1/2/2018	12,447	12,316	48	Marcellus
12	1/3/2018	12,272	12,141	48	Marcellus
13	1/7/2018	12,097	11,966	48	Marcellus
14	1/9/2018	11,922	11,791	48	Marcellus
15	1/10/2018	11,747	11,616	48	Marcellus
16	1/12/2018	11,572	11,441	48	Marcellus
17	1/13/2018	11,397	11,266	48	Marcellus
18	1/23/2018	11,222	11,091	48	Marcellus
19	1/25/2018	11,047	10,916	48	Marcellus
20	1/26/2018	10,872	10,741	48	Marcellus
21	1/26/2018	10,697	10,566	48	Marcellus
22	1/27/2018	10,522	10,391	48	Marcellus
23	1/29/2018	10,347	10,216	48	Marcellus
24	1/31/2018	10,172	10,041	48	Marcellus
25	2/2/2018	9,997	9,866	48	Marcellus
26	2/3/2018	9,822	9,691	48	Marcellus
27	2/5/2018	9,647	9,516	48	Marcellus
28	2/6/2018	9,472	9,341	48	Marcellus
29	2/9/2018	9,297	9,166	48	Marcellus
30	2/11/2018	9,122	8,991	48	Marcellus
31	2/12/2018	8,947	8,816	48	Marcellus
32	2/14/2018	8,772	8,641	48	Marcellus
33	2/15/2018	8,597	8,466	48	Marcellus
34	2/17/2018	8,422	8,291	48	Marcellus
35	2/18/2018	8,247	8,116	48	Marcellus
36	2/19/2018	8,072	7,941	48	Marcellus
37	2/20/2018	7,897	7,766	48	Marcellus
38	2/22/2018	7,722	7,591	48	Marcellus
39	2/23/2018	7,547	7,416	48	Marcellus
40	2/24/2018	7,372	7,241	48	Marcellus
41	2/26/2018	7,197	7,066	48	Marcellus
42	2/27/2018	7,022	6,891	48	Marcellus

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**Stimulation Summary
Greer 6H**

Stage	Avg. Pump Rate (BPM)	Avg. Treating Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Proppant Total (lbs)	Water Total (bbbls)	N2 Volume (scf)
1	86.6	8120	4819	2394	342141	7,797	0
2	90	8231	4205	2929	350538	7,771	0
3	89.5	8227	4709	2412	347008	7,820	0
4	90.1	8018	4435	3998	451946	8,621	0
5	90	8373	5537	2964	450717	8,597	0
6	89.6	7950	5944	3210	452445	8,707	0
7	88.5	7990	900	3220	450103	8,608	0
8	89.1	7994	5972	3482	450792	8,668	0
9	88.4	8083	5564	3690	451998	8,691	0
10	87.3	8096	4937	3086	450596	8,564	0
11	88.1	7797	5118	3214	450367	8,784	0
12	84.9	7903	5287	3455	449754	9,489	0
13	89.2	7923	5360	3468	450162	8,567	0
14	89.3	7807	5426	3315	450908	8,649	0
15	87.5	7835	5907	3599	449774	8,542	0
16	88.8	7869	5606	3631	449393	8,572	0
17	89.7	7751	6855	5026	448848	8,223	0
18	89.6	7760	5536	3550	450605	8,683	0
19	87.9	7753	5871	3691	449823	8,546	0
20	85	7405	5646	3300	450924	9,533	0
21	88	7816	6158	5294	396251	8,207	0
22	86.4	7378	5637	3630	449514	8,497	0
23	88.1	7412	5659	3505	451260	8,611	0
24	87.7	7347	5475	4303	445260	8,453	0
25	87.3	7726	5430	4345	377383	8,177	0
26	87.1	7371	5313	4549	405440	8,120	0
27	83.4	7766	5488	3138	450642	10,302	0
28	83.4	7339	5938	5015	406151	9,454	0
29	88.2	7336	6407	3275	450533	8,780	0
30	87.8	7463	5957	3882	450628	8,804	0
31	86.4	7059	5775	3758	449832	8,539	0
32	90.3	7035	5154	3436	450090	8,511	0
33	89.7	7061	5428	4081	450314	8,566	0
34	85.4	6979	5848	3464	449954	8,565	0
35	88	7056	5973	3658	449692	8,353	0
36	89.5	6851	5372	3263	450752	8,579	0
37	88.1	6706	6036	3490	450704	8,396	0

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**Stimulation Summary
Greer 6H**

38	85.2	6694	5480	3399	449641	8,468	0
39	85.5	6981	6535	3496	451109	8,290	0
40	87.3	6899	4875	3752	449026	8,545	0
41	88.5	6942	6408	3552	427064	8,104	0
42	89.1	7278	7374	3742	430344	8,809	0

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**Greer 1N-6HM
Lithology/Formation Information**

FORMATION	TOP TVD	BASE TVD	TOP MD	BASE MD	DESCRIBE ROCKY TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H2S ETC)
Maxton	1857	1929	1858	1931	Sandstone
Big Lime	1929	2038	1931	2040	Limestone
Big Injun	2038	2346	2040	2349	Sandstone
Weir	2346	2536	2349	2540	Sandstone
Berea	2536	2854	2540	2859	Sandstone
Gordon	2854	2956	2859	2963	Sandstone
Fifty Foot	2956	3529	2963	3559	Sandstone
Speechley	3529	4865	3559	5014	Sandstone
Benson	4865	5234	5014	6401	Sandstone
Alexander	5234	5854	6401	6066	Siltstone
Rhinestreet	5854	6216	6066	6475	Black shale
Middlesex	6216	6302	6475	6598	Black shale
Geneseo/Burkett	6302	6334	6598	6662	Black shale
Tully	6334	6354	6662	6709	Limestone
Hamilton	6354	6358	6709	6719	Grey shale
Marcellus	6358	-	6719	-	Black shale

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TUG HILL
OPERATING

Tug Hill Operating LLC
Well: Greer 1N-06M
Site: Greer Unit N
Project: Marshall County, WV
Design: rev5 def gl=1254

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 2"/100' build
3	1450.00	5.00	235.00	1449.68	-6.25	-8.93	2.00	235.00	1.17	Begin 5.00' tangent
4	2705.09	5.00	235.00	2700.00	-69.00	-98.54	0.00	0.00	12.89	Begin 2"/100' build
5	3577.71	22.41	228.17	3544.55	-202.77	-254.81	2.00	-8.70	15.00	
6	6048.95	22.41	228.17	5829.22	-831.06	-956.69	0.00	0.00	3.79	
7	7001.60	91.00	329.61	6399.00	-448.98	-1452.83	10.00	105.22	617.97	
8	14443.70	91.00	329.61	6269.12	5969.61	-5217.09	0.00	0.00	7926.07	

ANNOTATIONS

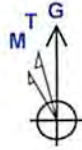
MD	Inc	Azi	TVD	+N/-S	+E/-W	V Sect	Annotation
100.00	0.44	43.34	100.00	0.28	0.26	0.04	Gyro
2674.00	5.16	221.63	2669.97	-66.36	-81.60	3.73	MWD surveys
14367.00	90.73	330.13	6317.21	5912.83	-5166.34	7865.08	Survey @ 14367.00 MD 6317.21 TVD
14427.00	90.73	330.13	6316.44	5964.86	-5216.22	7923.92	Survey projected to 14427.00 MD 6316.44 TVD

Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD83 West Virginia - HARN
Ellipsoid: GRS 1980
Zone: Zone 17N (84 W to 78 W)

System Datum: Mean Sea Level
Depth Reference: RKB=1254+26 @ 1280.00ustf (Nabors B26)

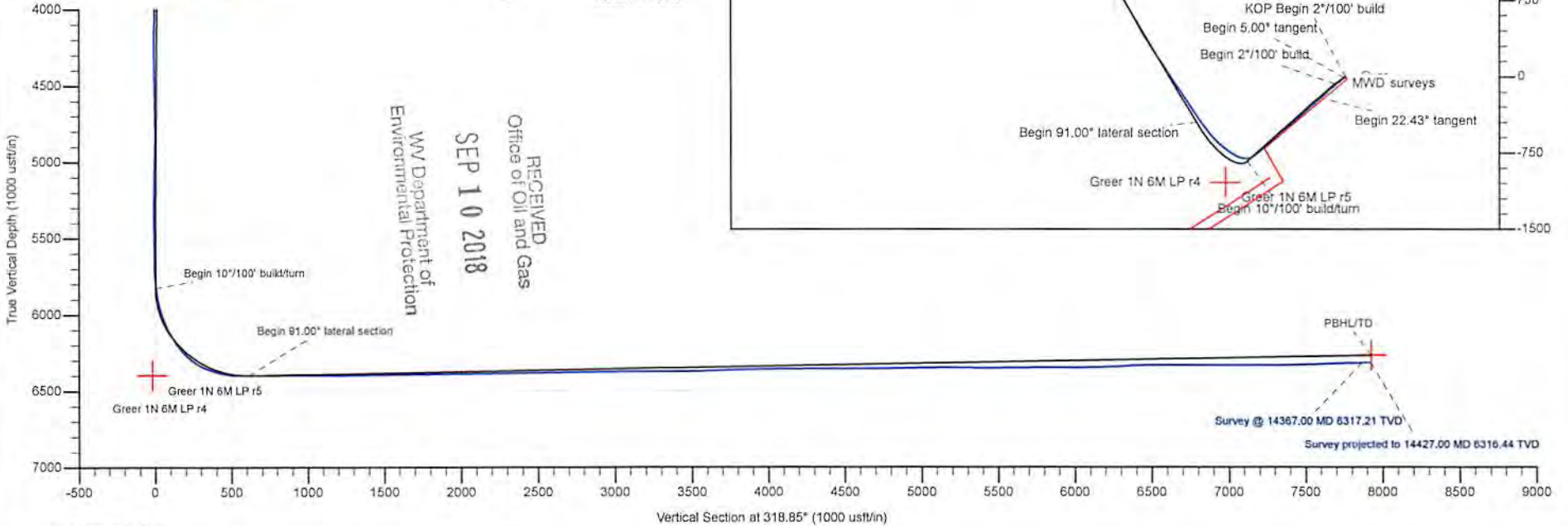
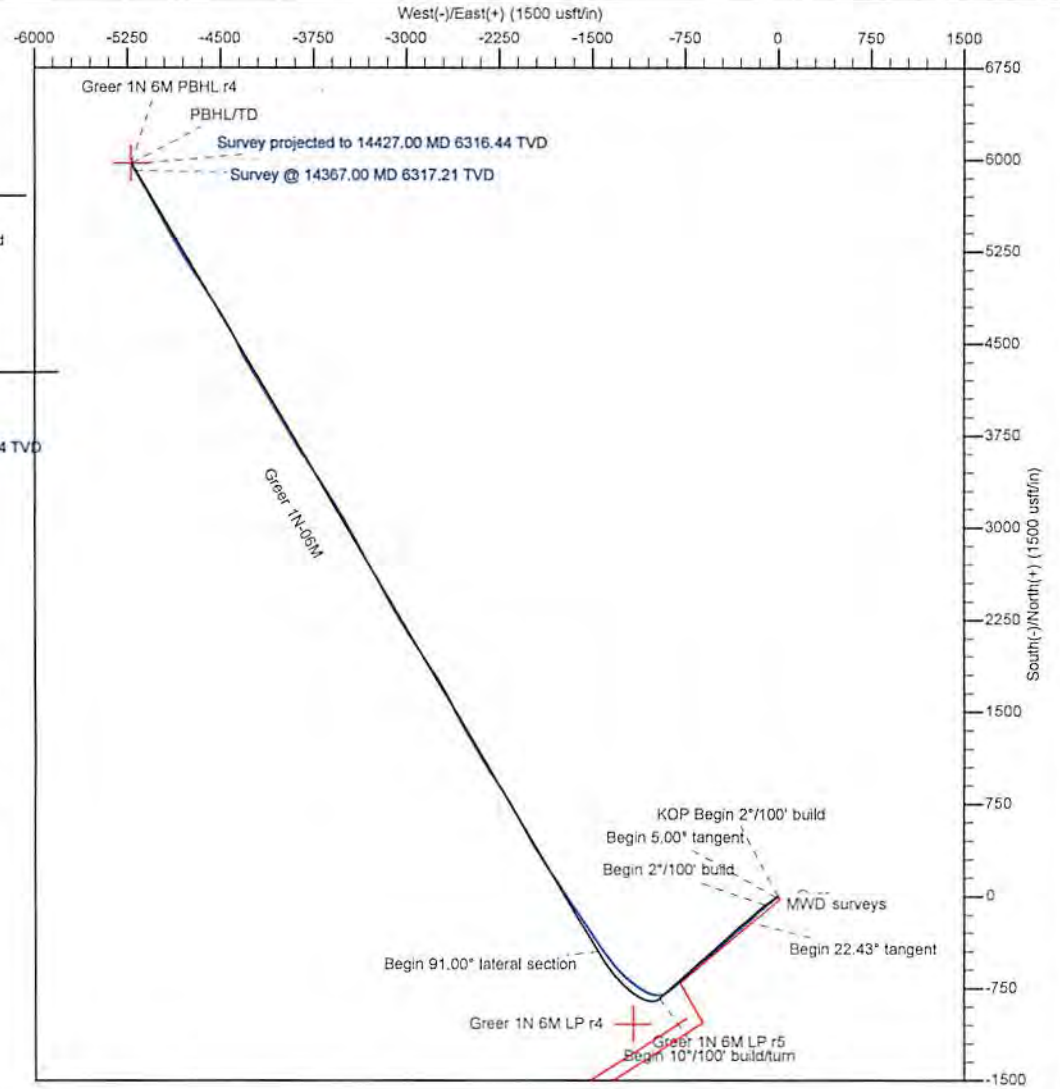
Surface location			
Northing	Easting	Latitude	Longitude
14438298.46	1686386.28	39.75702000	-80.83643100

Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.69°



Azimuths to Grid North
True North: -0.10°
Magnetic North: -8.69°

Magnetic Field
Strength: 52205.85nT
Dip Angle: 66.97°
Date: 3/6/2017
Model: IGRF2015



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Survey Report

Service Company: Nzone Guidance, LLC

Location: New Martinsville, West Virginia

Well: Greer 1N-06M

Rig: Nabors B28

API or UWI: 47-051-01758

Job Number: THO-17-010

State: West Virginia

Operating Company: Tug Hill Operating, LLC

County: Marshall County, West Virginia

Magnetic Declination: 0

Country: USA

Proposed Azimuth: 318.85

Comment The survey taken at 14,427' is a projection to bit.

North Reference: GRID

Latitude: 39.75709266

Longitude: -80.83627944

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Tie-In Data

MD	Inclination	Azimuth	TVD	NS	EW
0.00	0.00	0.00	0.00	0.00	0.00

Survey Data

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
100.00	0.44	43.34	100.00	0.28	0.26	43.34	0.38	0.04	0.44
200.00	0.49	52.25	200.00	0.82	0.87	46.52	1.19	0.05	0.09
300.00	0.10	72.66	299.99	1.11	1.29	49.26	1.70	-0.01	0.40
400.00	0.15	289.69	399.99	1.18	1.25	46.62	1.72	0.07	0.24
500.00	0.20	357.56	499.99	1.40	1.12	38.62	1.79	0.32	0.20
600.00	0.15	358.58	599.99	1.70	1.11	33.00	2.03	0.55	0.05
700.00	0.10	240.81	699.99	1.79	1.03	29.81	2.06	0.67	0.22
800.00	0.10	1.19	799.99	1.83	0.95	27.41	2.07	0.76	0.17
900.00	0.13	20.55	899.99	2.03	0.99	26.09	2.26	0.87	0.05
1000.00	0.13	223.60	999.99	2.05	0.95	24.95	2.26	0.92	0.25
1100.00	0.36	263.64	1099.99	1.94	0.56	16.25	2.02	1.09	0.27
1200.00	0.95	234.78	1199.99	1.42	-0.43	343.36	1.48	1.35	0.66
1300.00	2.38	225.49	1299.94	-0.51	-2.58	258.81	2.63	1.31	1.45
1400.00	3.34	227.07	1399.81	-3.95	-6.20	237.48	7.35	1.10	0.96
1500.00	3.82	226.35	1499.62	-8.23	-10.74	232.52	13.53	0.87	0.48
1600.00	4.16	221.74	1599.38	-13.24	-15.57	229.61	20.43	0.27	0.47
1700.00	4.33	226.74	1699.10	-18.53	-20.73	228.20	27.81	-0.32	0.41
1800.00	4.71	233.47	1798.79	-23.56	-26.78	228.65	35.67	-0.12	0.65
1900.00	5.28	234.84	1898.41	-28.66	-33.84	229.74	44.34	0.69	0.58

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2000.00	4.86	231.35	1998.02	-33.95	-40.91	230.31	53.16	1.35	0.52
2100.00	5.53	232.36	2097.61	-39.54	-48.03	230.54	62.21	1.83	0.68
2200.00	4.66	234.80	2197.21	-44.83	-55.17	230.90	71.08	2.55	0.90
2300.00	3.68	235.02	2296.95	-49.01	-61.12	231.27	78.34	3.31	0.98
2400.00	3.76	235.05	2396.74	-52.73	-66.43	231.56	84.81	4.01	0.08
2500.00	3.94	229.70	2496.51	-56.83	-71.74	231.62	91.52	4.42	0.40
2542.00	4.20	229.15	2538.41	-58.77	-74.00	231.55	94.50	4.45	0.63
2674.00	5.16	221.63	2669.97	-66.36	-81.60	230.88	105.18	3.73	0.86
2706.00	5.00	221.00	2701.84	-68.49	-83.48	230.63	107.98	3.36	0.53
2801.00	7.27	229.58	2796.29	-75.51	-90.77	230.24	118.07	2.87	2.57
2896.00	9.00	229.62	2890.33	-84.23	-101.01	230.18	131.52	3.04	1.82
2991.00	10.68	227.87	2983.93	-94.95	-113.20	230.01	147.74	2.99	1.80
3088.00	12.26	229.89	3078.99	-107.61	-127.74	229.89	167.03	3.03	1.68
3183.00	14.02	233.84	3171.50	-120.90	-144.75	230.13	188.60	4.21	2.08
3278.00	15.40	229.41	3263.39	-135.90	-163.62	230.29	212.70	5.33	1.87
3373.00	16.66	223.59	3354.70	-153.97	-182.59	229.86	238.84	4.21	2.15
3467.00	21.46	227.59	3443.52	-175.34	-204.59	229.40	269.45	2.59	5.29
3562.00	22.48	227.19	3531.62	-199.41	-230.74	229.17	304.97	1.69	1.09
3657.00	20.99	223.85	3619.87	-224.02	-255.86	228.80	340.07	-0.32	2.04
3751.00	22.77	227.81	3707.10	-248.38	-281.00	228.53	375.04	-2.12	2.46
3845.00	24.77	230.24	3793.12	-273.20	-309.62	228.58	412.92	-1.97	2.37
3940.00	25.43	228.89	3879.15	-299.34	-340.29	228.66	453.21	-1.48	0.92
4034.00	25.74	227.11	3963.94	-326.50	-370.45	228.61	493.79	-2.08	0.88
4129.00	26.03	227.47	4049.41	-354.63	-400.92	228.51	535.26	-3.21	0.35
4222.00	24.99	225.45	4133.34	-382.20	-429.96	228.37	575.28	-4.87	1.46
4316.00	23.05	227.44	4219.20	-408.58	-457.67	228.24	613.52	-6.50	2.24
4411.00	22.25	232.19	4306.88	-432.19	-485.58	228.33	650.06	-5.91	2.10
4505.00	23.11	230.24	4393.61	-454.90	-513.82	228.48	686.26	-4.42	1.22
4600.00	22.82	230.39	4481.08	-478.57	-542.35	228.57	723.30	-3.48	0.31
4695.00	22.12	232.86	4568.87	-501.11	-570.80	228.72	759.56	-1.73	1.24
4789.00	22.80	231.54	4655.74	-523.13	-599.17	228.88	795.40	0.36	0.90
4884.00	22.25	229.41	4743.49	-546.28	-627.24	228.95	831.78	1.40	1.04
4953.00	20.92	229.23	4807.65	-562.82	-646.49	228.96	857.16	1.61	1.93
5048.00	19.90	228.00	4896.69	-584.72	-671.35	228.95	890.29	1.48	1.16
5142.00	18.33	225.98	4985.50	-605.70	-693.87	228.88	921.05	0.51	1.81
5236.00	16.40	223.69	5075.22	-625.57	-713.67	228.76	949.03	-1.43	2.18
5329.00	14.64	223.87	5164.82	-643.53	-730.88	228.64	973.82	-3.63	1.89
5424.00	16.13	226.68	5256.42	-661.24	-748.81	228.55	998.98	-5.17	1.75
5517.00	19.08	229.58	5345.05	-679.97	-769.78	228.55	1027.09	-5.47	3.31
5612.00	19.87	230.99	5434.62	-700.20	-794.15	228.60	1058.75	-4.66	0.97
5647.00	20.44	229.67	5467.47	-707.90	-803.43	228.62	1070.80	-4.35	2.08

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5742.00	25.58	232.04	5554.89	-731.26	-832.27	228.70	1107.89	-2.98	5.50
5836.00	22.90	231.00	5640.59	-755.26	-862.48	228.79	1146.43	-1.16	2.89
5932.00	22.55	231.16	5729.14	-778.56	-891.34	228.86	1183.49	0.28	0.37
6026.00	20.75	245.93	5816.57	-796.67	-920.61	229.13	1217.45	5.90	6.09
6122.00	20.22	263.07	5906.58	-805.61	-952.63	229.78	1247.61	20.24	6.25
6216.00	22.73	276.78	5994.10	-805.43	-986.82	230.78	1273.78	42.88	5.95
6310.00	27.82	290.05	6079.15	-795.75	-1025.51	232.19	1298.04	75.63	8.07
6406.00	33.89	296.55	6161.54	-776.09	-1070.55	234.06	1322.27	120.07	7.21
6500.00	41.80	303.76	6235.75	-746.90	-1120.14	236.31	1346.32	174.68	9.63
6594.00	51.74	309.47	6300.08	-705.91	-1174.84	239.00	1370.60	241.54	11.46
6689.00	67.56	312.81	6347.94	-652.01	-1236.24	242.19	1397.65	322.53	16.92
6784.00	74.24	319.93	6379.04	-587.05	-1298.02	245.66	1424.60	412.10	9.98
6879.00	85.10	321.95	6396.06	-514.57	-1356.80	249.23	1451.10	505.35	11.62
6926.00	88.84	323.01	6398.54	-477.35	-1385.38	250.99	1465.31	552.18	8.27
6973.00	89.01	323.10	6399.42	-439.80	-1413.62	252.72	1480.45	599.05	0.41
7068.00	91.03	328.63	6399.39	-361.20	-1466.91	256.17	1510.72	693.29	6.20
7162.00	90.55	328.81	6398.09	-280.87	-1515.71	259.50	1541.51	785.89	0.55
7257.00	90.73	325.56	6397.03	-201.04	-1567.18	262.69	1580.02	879.87	3.43
7351.00	90.20	326.09	6396.27	-123.28	-1619.98	265.65	1624.66	973.17	0.80
7446.00	89.67	326.17	6396.38	-44.40	-1672.92	268.48	1673.51	1067.41	0.56
7541.00	88.70	326.35	6397.73	34.59	-1725.68	271.15	1726.03	1161.60	1.04
7635.00	90.55	327.05	6398.34	113.15	-1777.29	273.64	1780.89	1254.71	2.10
7729.00	89.50	326.35	6398.30	191.71	-1828.90	275.98	1838.92	1347.83	1.34
7824.00	91.60	329.07	6397.39	272.01	-1879.63	278.23	1899.21	1441.68	3.62
7919.00	91.16	328.72	6395.10	353.32	-1928.70	280.38	1960.79	1535.20	0.59
8013.00	90.99	330.74	6393.34	434.49	-1976.07	282.40	2023.27	1627.48	2.16
8108.00	90.59	330.83	6392.03	517.40	-2022.43	284.35	2087.57	1720.42	0.43
8202.00	90.29	330.92	6391.31	599.51	-2068.18	286.17	2153.32	1812.36	0.33
8297.00	91.16	330.22	6390.10	682.24	-2114.86	287.88	2222.18	1905.37	1.18
8391.00	90.55	330.30	6388.70	763.85	-2161.48	289.46	2292.48	1997.50	0.65
8485.00	92.13	330.30	6386.50	845.48	-2208.04	290.95	2364.38	2089.60	1.68
8579.00	88.97	324.77	6385.60	924.74	-2258.47	292.27	2440.46	2182.47	6.77
8674.00	90.07	326.88	6386.40	1003.33	-2311.83	293.46	2520.17	2276.76	2.50
8769.00	91.74	329.51	6384.89	1084.05	-2361.89	294.65	2598.78	2370.47	3.28
8863.00	91.43	329.16	6382.29	1164.87	-2409.81	295.80	2676.58	2462.87	0.50
8958.00	91.03	329.51	6380.26	1246.57	-2458.25	296.89	2756.25	2556.26	0.56
9053.00	90.46	329.16	6379.02	1328.27	-2506.70	297.92	2836.87	2649.67	0.70
9148.00	90.77	332.68	6378.00	1411.28	-2552.86	298.93	2916.99	2742.54	3.72
9241.00	90.33	332.50	6377.11	1493.84	-2595.67	299.92	2994.84	2832.88	0.51
9336.00	90.42	333.12	6376.49	1578.34	-2639.08	300.88	3075.04	2925.07	0.66
9431.00	91.08	332.33	6375.24	1662.77	-2682.61	301.79	3156.13	3017.29	1.08

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9526.00	92.00	329.78	6372.69	1745.86	-2728.57	302.61	3239.31	3110.10	2.85
9620.00	89.19	325.38	6371.71	1825.18	-2778.94	303.30	3324.72	3202.97	5.55
9715.00	89.36	327.84	6372.91	1904.48	-2831.22	303.93	3412.16	3297.09	2.60
9809.00	90.46	328.46	6373.06	1984.33	-2880.82	304.56	3498.10	3389.85	1.34
9904.00	90.11	328.19	6372.59	2065.18	-2930.70	305.17	3585.24	3483.55	0.47
9998.00	92.18	327.76	6370.71	2144.85	-2980.54	305.74	3672.05	3576.34	2.25
10093.00	91.56	330.04	6367.61	2226.15	-3029.58	306.31	3759.53	3669.83	2.49
10187.00	93.63	329.25	6363.36	2307.17	-3077.03	306.86	3845.93	3762.06	2.36
10282.00	90.55	330.04	6359.89	2389.09	-3125.00	307.40	3933.62	3855.31	3.35
10376.00	90.90	331.45	6358.70	2471.09	-3170.93	307.93	4020.08	3947.28	1.55
10471.00	90.46	332.24	6357.57	2554.84	-3215.75	308.47	4107.10	4039.84	0.95
10566.00	90.95	329.95	6356.40	2637.99	-3261.67	308.97	4194.93	4132.66	2.46
10661.00	90.07	330.04	6355.56	2720.26	-3309.17	309.42	4283.74	4225.87	0.93
10756.00	90.86	332.15	6354.79	2803.41	-3355.09	309.88	4372.15	4318.70	2.37
10850.00	89.10	332.33	6354.82	2886.59	-3398.87	310.34	4459.23	4410.14	1.88
10944.00	89.76	331.27	6355.76	2969.43	-3443.28	310.77	4546.83	4501.74	1.33
11039.00	89.36	330.48	6356.49	3052.41	-3489.52	311.18	4636.16	4594.65	0.93
11134.00	90.73	328.63	6356.41	3134.31	-3537.65	311.54	4726.40	4687.99	2.42
11229.00	90.95	328.11	6355.02	3215.19	-3587.47	311.87	4817.40	4781.67	0.59
11324.00	90.95	327.67	6353.44	3295.64	-3637.96	312.17	4908.77	4875.48	0.46
11419.00	91.21	327.67	6351.65	3375.90	-3688.76	312.46	5000.36	4969.34	0.27
11513.00	91.12	327.05	6349.74	3455.04	-3739.44	312.74	5091.24	5062.29	0.67
11607.00	89.80	326.09	6348.99	3533.49	-3791.23	312.98	5182.56	5155.43	1.74
11702.00	88.66	327.49	6350.26	3612.96	-3843.25	313.23	5274.85	5249.51	1.90
11798.00	89.41	329.43	6351.88	3694.76	-3893.46	313.50	5367.52	5344.14	2.17
11893.00	89.67	329.51	6352.64	3776.59	-3941.72	313.77	5458.91	5437.51	0.29
11988.00	91.21	328.81	6351.91	3858.15	-3990.42	314.03	5550.56	5530.97	1.78
12083.00	90.81	329.25	6350.24	3939.59	-4039.29	314.28	5642.37	5624.46	0.63
12177.00	90.99	329.16	6348.76	4020.33	-4087.41	314.53	5733.24	5716.92	0.21
12271.00	90.64	329.86	6347.43	4101.32	-4135.10	314.77	5824.08	5809.28	0.83
12366.00	90.02	329.34	6346.88	4183.26	-4183.17	315.00	5915.96	5902.61	0.85
12460.00	89.32	329.25	6347.42	4264.08	-4231.17	315.22	6007.09	5995.05	0.75
12555.00	90.24	330.39	6347.78	4346.20	-4278.93	315.45	6099.07	6088.32	1.54
12650.00	92.13	333.56	6345.82	4430.03	-4323.55	315.70	6190.17	6180.80	3.88
12744.00	92.62	333.56	6341.92	4514.12	-4365.37	315.96	6279.63	6271.64	0.52
12839.00	92.13	330.48	6337.99	4597.93	-4409.89	316.20	6370.88	6364.05	3.28
12934.00	91.96	330.39	6334.60	4680.51	-4456.74	316.40	6462.95	6457.05	0.20
13029.00	91.16	328.90	6332.01	4762.46	-4504.73	316.59	6555.42	6550.34	1.78
13124.00	89.58	327.76	6331.40	4843.30	-4554.60	316.76	6648.46	6644.03	2.05
13219.00	90.20	327.76	6331.58	4923.66	-4605.28	316.91	6741.73	6737.88	0.65
13314.00	89.85	326.70	6331.54	5003.54	-4656.70	317.06	6835.22	6831.87	1.18

13408.00	90.07	326.52	6331.60	5082.02	-4708.43	317.19	6927.93	6925.01	0.30
13503.00	89.98	327.58	6331.56	5161.74	-4760.10	317.32	7021.54	7019.04	1.12
13598.00	89.19	329.51	6332.25	5242.77	-4809.67	317.47	7114.74	7112.67	2.20
13693.00	89.58	330.04	6333.27	5324.85	-4857.49	317.63	7207.58	7205.94	0.69
13787.00	89.76	330.92	6333.81	5406.65	-4903.81	317.79	7299.26	7298.01	0.96
13880.00	91.78	331.97	6332.56	5488.32	-4948.25	317.96	7389.65	7388.76	2.45
13975.00	91.91	331.18	6329.50	5571.82	-4993.45	318.13	7481.96	7481.38	0.84
14068.00	92.35	330.83	6326.05	5653.11	-5038.50	318.29	7572.59	7572.23	0.60
14162.00	92.26	330.66	6322.27	5735.05	-5084.40	318.44	7664.33	7664.14	0.20
14256.00	91.38	329.95	6319.28	5816.67	-5130.94	318.58	7756.30	7756.22	1.20
14350.00	90.86	330.13	6317.44	5898.09	-5177.87	318.72	7848.43	7848.41	0.59
14367.00	90.73	330.13	6317.21	5912.83	-5186.34	318.74	7865.09	7865.08	0.76
14427.00	90.73	330.13	6316.44	5964.86	-5216.22	318.83	7923.92	7923.92	0.00

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Hydraulic Fracturing Fluid Product Component Information Disclosure

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Job Start Date:	12/13/2017
Job End Date:	2/27/2018
State:	West Virginia
County:	Marshall
API Number:	47-051-01758-00-00
Operator Name:	Tug Hill Operating, LLC
Well Name and Number:	Greer 1N-6HM
Latitude:	39.75707456
Longitude:	-80.83631724
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,399
Total Base Water Volume (gal):	14,610,208
Total Base Non Water Volume:	0



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Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Fresh Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	86.17496	Density = 8.330
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.77073	

SCALECHEK LP-70	Halliburton	Scale Inhibitor					
				Listed Below			
SAND-PREMIUM WHITE-30/50, BULK	Halliburton	Proppant					
				Listed Below			
SP BREAKER	Halliburton	Breaker					
				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
SCALECHEK LP-50	Halliburton	Scale Inhibitor					
				Listed Below			

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OILPERM A	Halliburton	Non-ionic Surfactant					
				Listed Below			
FR-76	Halliburton	Friction Reducer					
				Listed Below			
HYDROCHLORIC ACID	Halliburton	Solvent					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			

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Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.

			Crystalline silica, quartz	14808-60-7	100.00000	12.98645	
			Hydrochloric acid	7647-01-0	15.00000	0.09958	
			Acrylamide acrylate copolymer	Proprietary	30.00000	0.03527	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Inorganic salt	Proprietary	30.00000	0.03527	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.03527	
			Glutaraldehyde	111-30-8	30.00000	0.00823	
			Guar gum	9000-30-0	100.00000	0.00552	
			Methanol	67-56-1	60.00000	0.00537	
			Phosphate of a Diamine, Sodium Salt	Proprietary	30.00000	0.00491	
			Ethylene glycol	107-21-1	60.00000	0.00369	

			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00137	RECEIVED Office of Oil and Gas SEP 10 2018 W/ Department of Environmental Protection
			Ethanol	64-17-5	60.00000	0.00070	
			Telmer	Proprietary	10.00000	0.00062	
			Oxyalkylated phenolic resin	Proprietary	30.00000	0.00029	
			Sodium persulfate	7775-27-1	100.00000	0.00022	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00021	
			Modified thiourea polymer	Proprietary	30.00000	0.00021	
			Ethoxylated alcohols	Proprietary	30.00000	0.00021	
			Fatty acids, tall oil	Proprietary	30.00000	0.00021	
			Olefins	Proprietary	5.00000	0.00008	
			Propargyl alcohol	107-19-7	10.00000	0.00007	
			Sodium polyacrylate	9003-04-7	1.00000	0.00006	
			Naphthalene	91-20-3	5.00000	0.00004	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00004	
			Phosphoric acid	7664-38-2	0.10000	0.00003	
			1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00001	
			Acrylic acid	79-10-7	0.01000	0.00000	
			Sodium sulfate	7757-82-6	0.10000	0.00000	

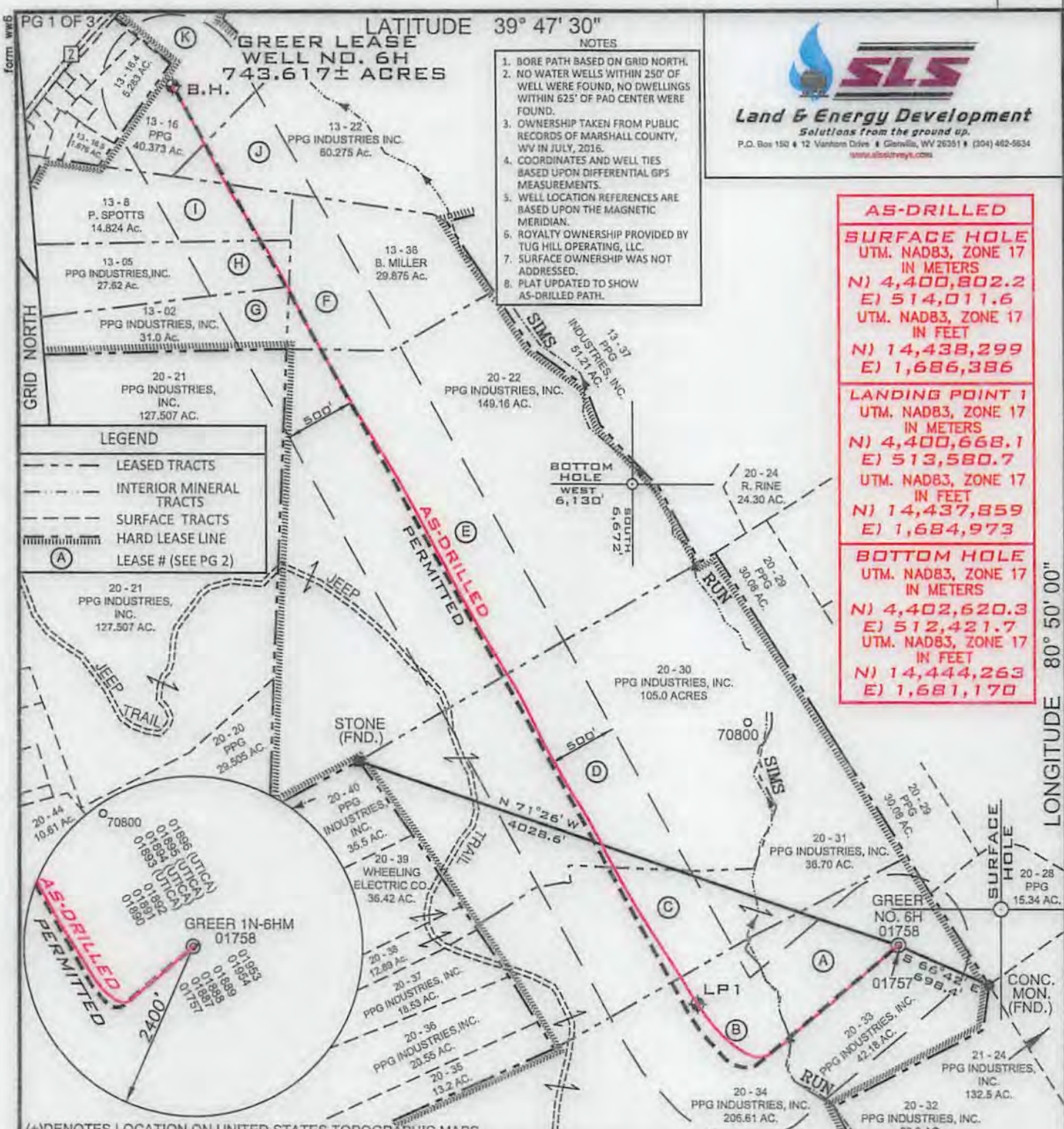
* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



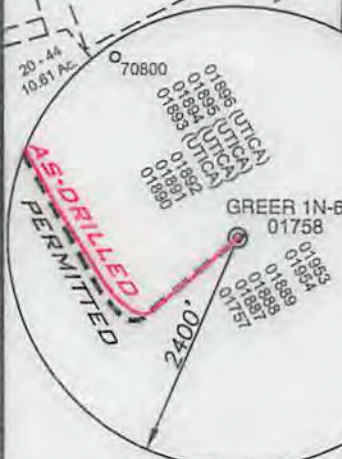
- NOTES
1. BORE PATH BASED ON GRID NORTH.
 2. NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
 3. OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN JULY, 2016.
 4. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
 5. WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
 6. ROYALTY OWNERSHIP PROVIDED BY TUG HILL OPERATING, LLC.
 7. SURFACE OWNERSHIP WAS NOT ADDRESSED.
 8. PLAT UPDATED TO SHOW AS-DRILLED PATH.

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Land & Energy Development
Solutions from the ground up.
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www.slsurvey.com

AS-DRILLED
SURFACE HOLE UTM. NAD83, ZONE 17 IN METERS N) 4,400,802.2 E) 514,011.6 UTM. NAD83, ZONE 17 IN FEET N) 14,438,299 E) 1,686,386
LANDING POINT 1 UTM. NAD83, ZONE 17 IN METERS N) 4,400,668.1 E) 513,580.7 UTM. NAD83, ZONE 17 IN FEET N) 14,437,859 E) 1,684,973
BOTTOM HOLE UTM. NAD83, ZONE 17 IN METERS N) 4,402,620.3 E) 512,421.7 UTM. NAD83, ZONE 17 IN FEET N) 14,444,263 E) 1,681,170

LEGEND

	LEASED TRACTS
	INTERIOR MINERAL TRACTS
	SURFACE TRACTS
	HARD LEASE LINE
	LEASE # (SEE PG 2)



(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

FILE NUMBER 8837

DRAWING NUMBER 8837ADG1N6HM.dwg

SCALE 1" = 1000'

MINIMUM DEGREE OF ACCURACY 1/2500

PROVEN SOURCE OF ELEVATION SUBMETER MAPPING
GRADE GPS

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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

P.S. 677
Gregory A. Smith



WVDEP
OFFICE OF OIL & GAS
601 57TH STREET, SE
CHARLESTON, WV 25304



DATE: JULY 17, 2018

OPERATORS WELL NO. GREER NO. 6H (AS-DRILLED)

API WELL NO. 47-051-01758

STATE COUNTY PERMIT

LOCATION ELEVATION 1251' WATERSHED (HUC 10) FRENCH CREEK - OHIO RIVER (UNDEFINED)

DISTRICT FRANKLIN COUNTY MARSHALL

QUADRANGLE POWHATAN POINT 7.5' LEASE NUMBER SEE ATTACHED PG 2 OF 3 AND PG 3 OF 3

SURFACE OWNER PPG INDUSTRIES, INC. ACREAGE 42.18

OIL & GAS ROYALTY OWNER PPG INDUSTRIES, INC., ET AL LEASE ACREAGE 743.617

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION

PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE (SPECIFY) _____

TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD 6,316' TMD:14,427'

WELL OPERATOR TUG HILL OPERATING, LLC DESIGNATED AGENT DIANNA STAMPER

ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH TX, 76107 ADDRESS 5400 D BIG TYLER ROAD CHARLESTON WV, 25313

LONGITUDE 12,650' 00.05 08

COUNTY NAME PERMIT

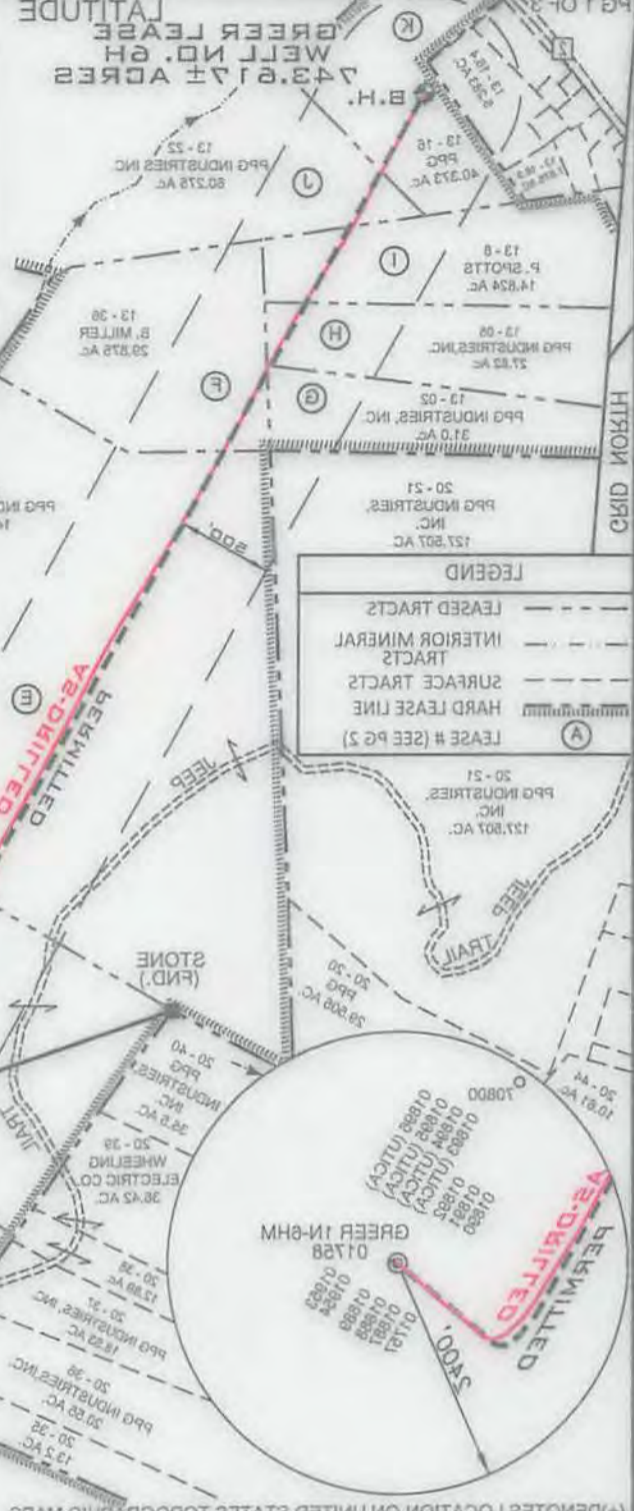
AS-DRIILLED
SURFACE HOLE
UTM. NAD83, ZONE 17
IN METERS
(N) 4,400,820.2
(E) 214,011.6
UTM. NAD83, ZONE 17
IN FEET
(N) 14,438,299
(E) 1,684,886

LANDING POINT 1
UTM. NAD83, ZONE 17
IN METERS
(N) 4,400,888.1
(E) 213,280.7
UTM. NAD83, ZONE 17
IN FEET
(N) 14,437,859
(E) 1,684,873

BOTTOM HOLE
UTM. NAD83, ZONE 17
IN METERS
(N) 4,402,820.3
(E) 212,421.7
UTM. NAD83, ZONE 17
IN FEET
(N) 14,444,263
(E) 1,681,170

NOTES

1. BORE PATH BASED ON GRID NORTH.
2. NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
3. OWNERSHIP TAKEN FROM PUBLIC RECORDS OF MARSHALL COUNTY, WV IN JULY, 2018.
4. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
5. WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
6. ROYALTY OWNERSHIP PROVIDED BY TUG HILL OPERATING, LLC.
7. SURFACE OWNERSHIP WAS NOT ADDRESSED.
8. PLAN UPDATED TO SHOW AS-DRIILLED PATH.



FILE NUMBER 8837
DRAWING NUMBER 8837ADG18NHM.dwg
SCALE 1" = 100'
MINIMUM DEGREE OF ACCURACY 1/2500
PROVEN SOURCE OF ELEVATION SUBMETER MAPPING
GRADE GPS

WVDP
OFFICE OF OIL & GAS
601 5TH STREET, SE
CHARLESTON, WV 25304

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

P.S. 877

DATE: JULY 17, 2018
OPERATORS WELL NO. GREER NO. 6H (AS-DRIILLED)
API WELL NO. 47-051-01758
STATE COUNTY PERMIT

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

LOCATION ELEVATION 1251' WATERSHED (HUC 10) FRENCH CREEK - OHIO RIVER (UNDEFINED)

DISTRICT FRANKLIN COUNTY MARSHALL

QUADRANGLE POWHATAN POINT 7.5' LEASE NUMBER SEE ATTACHED PG 2 OF 2 AND PG 3 OF 2

SURFACE OWNER PPG INDUSTRIES, INC. ACREAGE 45.18
OIL & GAS ROYALTY OWNER PPG INDUSTRIES, INC., ET AL LEASE ACREAGE 743.817

PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___
PERFORM NEW FORMATION ___ OTHER PHYSICAL CHANGE (SPECIFY) ___

TARGET FORMATION MARCELLUS
WELL OPERATOR TUG HILL OPERATING, LLC
DESIGNATED AGENT DIANNA STAMPER
CT CORPORATION SYSTEM
Address 5400 D BIG TYLER ROAD CHARLESTON WV, 25313
Address 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH TX, 76107

ESTIMATED DEPTH TVD 6,316' TMD:14,427'
PLUG & ABANDON ___ CLEAN OUT & REPLUG ___



LONGITUDE 80.20.00

930

PG 1 OF 3

**GREER WELL NO. 6H
WELL PLAT LEASE INFORMATION**

Lease No	Tag	Parcel	Oil & Gas Royalty Owner	Deed Book/Pg	
WV16-0076-001	A	5-20-33	PPG INDUSTRIES, INC.	725	123
WV16-0076-001	B	5-20-34	PPG INDUSTRIES, INC.	725	123
WV16-0076-001	C	5-20-31	PPG INDUSTRIES, INC.	725	123
WV16-0076-001	D	5-20-30	PPG INDUSTRIES, INC.	725	123
WV16-0076-068	D	5-20-30	DAN J. SWOVELAND	827	523
WV16-0076-069	D	5-20-30	CARRIE E METZGER FKA CARRIE ELIZABETH CHAMBERS	833	527
WV16-0076-070	D	5-20-30	CHRISTINA CHAMBERS	836	123
WV16-0076-071	D	5-20-30	JOSEPH LONG	836	106
WV16-0076-117	D	5-20-30	DAVID C WHITE, ESQ., SPECIAL COMMISSIONER ON BEHALF OF D.W. CHESS OR HIS HEIRS, SUCCESSORS, ASSIGNS, DEVISEES, OR DISTRIBUTEES	872	217
WV16-0076-063	D	5-20-30	ALLEN D. MASON	827	276
WV16-0076-064	D	5-20-30	RODNEY K. CHAMBERS	827	271
WV16-0076-065	D	5-20-30	CAROLYN STARKEY	827	226
WV16-0076-066	D	5-20-30	CHRISTINA I. CHILCOTE	827	525
WV16-0076-067	D	5-20-30	DAWN M. LAEMMIE	827	521
WV16-0076-058	D	5-20-30	GLENN L. MASON & SANDRA K. MASON	822	256
WV16-0076-059	D	5-20-30	FREDRIC RICHTER & BETTY RICHTER	822	270
WV16-0076-060	D	5-20-30	JORLENE POST	827	280
WV16-0076-061	D	5-20-30	CHRIS H. STEVENSON	827	282
WV16-0076-062	D	5-20-30	LUCYBELLE WELDON	827	278
WV16-0076-053	D	5-20-30	NORA WEBB	805	78
WV16-0076-054	D	5-20-30	BRIAN K. MARMIE & CAROL L. MARMIE	805	76
WV16-0076-055	D	5-20-30	KARI B. MARMIE	809	515
WV16-0076-056	D	5-20-30	TRAVIS D. MARMIE	808	491
WV16-0076-057	D	5-20-30	DEWAYNE STARKEY	815	228
WV16-0076-047	D	5-20-30	SHARON D. GREEN	799	463
WV16-0076-048	D	5-20-30	LAURA GLASSNER	800	406
WV16-0076-049	D	5-20-30	TERRY I. CHAMBERS	800	404
WV16-0076-050	D	5-20-30	GEORGEANN TIPPY	803	152
WV16-0076-051	D	5-20-30	HOWARD A. BROWN	805	98
WV16-0076-052	D	5-20-30	RAE JEAN NAMETH	805	80
WV16-0076-041	D	5-20-30	JOANN FRAZIER	799	59
WV16-0076-042	D	5-20-30	JOSEPH CHAMBERS	799	450
WV16-0076-043	D	5-20-30	ROBERT MARMIE	799	455
WV16-0076-044	D	5-20-30	FLORENCE L. MYERS	799	457
WV16-0076-045	D	5-20-30	BARBARA METZNER	799	459
WV16-0076-046	D	5-20-30	LYNNETTE L. KUGLER	799	461
WV16-0076-012	D	5-20-30	COLLIN A. WILLISON III	789	577
WV16-0076-032	D	5-20-30	LETITIA TEMPLE	799	465
WV16-0076-037	D	5-20-30	MARY C. JOSEPH	797	196
WV16-0076-038	D	5-20-30	MARSHA L. SCHON	797	198
WV16-0076-039	D	5-20-30	WILLIAM M. DOYLE	797	187
WV16-0076-040	D	5-20-30	LOIS JEAN MYERS	797	189
WV16-0076-001	E	5-20-22	PPG INDUSTRIES, INC.	725	123
WV16-0185-001	E	5-20-22	ROGER R WEESE, SPECIAL COMMISSIONER ON BEHALF OF EMMA W STANDIFORD, MARY WILSON CRAMER, JANE TAYLOR, MAY BRIDENBECKER, ROSEBERRY L WILSON, ANNIE WILSON, BEATRICE WILSON KERLIN, COURTNEY T WILSON, GUY WILSON, CALLIE WILSON GATES, JAMES C WILSON, H L WILSO	836	488
WV16-0076-001	F	5-13-36	PPG INDUSTRIES, INC.	725	123
WV16-0076-002	F	5-13-36	JACK L. MASON	737	229
WV16-0076-003	F	5-13-36	MARILYN SUE BUMER	739	413
WV16-0076-004	F	5-13-36	VIRGINIA R BOHRER STEVEN A BOHRER, AGENT AND AIF	746	321
WV16-0076-072	F	5-13-36	TIMOTHY B MILLER	844	87
WV16-0076-073	F	5-13-36	JAMES SLAWINSKI	842	370
WV16-0076-001	F	5-13-36	PPG INDUSTRIES, INC.	725	123
WV16-0076-001	G	5-13-2	PPG INDUSTRIES, INC.	725	123
WV16-0076-001	H	5-13-5	PPG INDUSTRIES, INC.	725	123
WV16-0142-000	I	5-13-8	PAUL F. SPOTTS	779	482
WV16-0076-122	J	5-13-22	CROSSROAD CHILD AND FAMILY SERVICES, INC	887	105

WELL OPERATOR TUG HILL OPERATING, LLC

DESIGNATED AGENT

DIANNA STAMPER
CT CORPORATION SYSTEMADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
FORT WORTH TX, 76107ADDRESS 5400 D BIG TYLER ROAD
CHARLESTON WV, 25313

WELL PLAT LEASE INFORMATION
GREER WELL NO. 6H

Lease No	Tag	Parcel	Oil & Gas Royalty Owner	Deed Book Pg
WA1E-007E-122	1	2-13-22	CROSSROAD CHILD AND FAMILY SERVICES, INC	881
WA1E-0142-000	1	2-13-8	PAUL F. SPOLTS	719
WA1E-007E-001	H	2-13-2	PPG INDUSTRIES, INC.	722
WA1E-007E-001	G	2-13-2	PPG INDUSTRIES, INC.	722
WA1E-007E-001	F	2-13-3E	PPG INDUSTRIES, INC.	722
WA1E-007E-023	F	2-13-3E	JAMES SLAWINSKI	842
WA1E-007E-025	F	2-13-3E	TIMOTHY B WILTER	844
WA1E-007E-038	F	2-13-3E	VIRGINIA R BOHRER STEVEN A BOHRER, AGENT AND AIF	746
WA1E-007E-004	F	2-13-3E	MARILYN SUE BUMER	739
WA1E-007E-002	F	2-13-3E	JACK L MASON	737
WA1E-007E-001	F	2-13-3E	PPG INDUSTRIES, INC.	722
WA1E-0182-001	E	2-20-22	WILSON, CATTIE WILSON GATES, JAMES C WILSON, H J WILSON WILSON, ANNIE WILSON, BEATRICE WILSON KERLIN, COURTNEY T WILSON, GUY MARY WILSON GRAMER, JANE TAYLOR, MAY BRIDENBECKER, ROSEBERRY J ROGER R WEESZ, SPECIAL COMMISSIONER ON BEHALF OF EMMA W STANDIFORD,	836
WA1E-007E-001	E	2-20-22	PPG INDUSTRIES, INC.	722
WA1E-007E-040	D	2-20-30	LOIS JEAN MYERS	757
WA1E-007E-039	D	2-20-30	WILLIAM M DOYLE	757
WA1E-007E-038	D	2-20-30	MARSHA L SCHON	757
WA1E-007E-037	D	2-20-30	MARY C JOSEPH	757
WA1E-007E-032	D	2-20-30	LETITIA TEMPLE	759
WA1E-007E-012	D	2-20-30	COLIN A. WILLISON III	789
WA1E-007E-046	D	2-20-30	LANNETTE L KUGLER	799
WA1E-007E-042	D	2-20-30	BARBARA METZNER	799
WA1E-007E-044	D	2-20-30	FLORENCE L MYERS	799
WA1E-007E-043	D	2-20-30	ROBERT MARMIE	799
WA1E-007E-042	D	2-20-30	JOSEPH CHAMBERS	799
WA1E-007E-041	D	2-20-30	JOANN FRAZIER	799
WA1E-007E-022	D	2-20-30	RAE LEAN NAMETH	802
WA1E-007E-021	D	2-20-30	HOWARD A. BROWN	802
WA1E-007E-020	D	2-20-30	GEORGEANN TIPPY	803
WA1E-007E-049	D	2-20-30	TERRY I. CHAMBERS	800
WA1E-007E-048	D	2-20-30	LAURA GLASSNER	800
WA1E-007E-047	D	2-20-30	SHARON D. GREEN	799
WA1E-007E-027	D	2-20-30	DEWAYNE STARKY	812
WA1E-007E-026	D	2-20-30	TRAVIS D. MARMIE	808
WA1E-007E-025	D	2-20-30	KARI B. MARMIE	809
WA1E-007E-024	D	2-20-30	BRIAN K. MARMIE & CAROL J. MARMIE	802
WA1E-007E-023	D	2-20-30	NORA WEBB	802
WA1E-007E-022	D	2-20-30	LUCABETTE WELDON	827
WA1E-007E-021	D	2-20-30	CHRIS H. STEVENSON	827
WA1E-007E-020	D	2-20-30	JORLENE POST	827
WA1E-007E-029	D	2-20-30	FREDRIC RICHTER & BETTY RICHTER	822
WA1E-007E-028	D	2-20-30	GLEN L MASON & SANDRA K. MASON	822
WA1E-007E-027	D	2-20-30	DAWN M. LAEMMIE	827
WA1E-007E-026	D	2-20-30	CHRISTINA I. CHILCOTE	827
WA1E-007E-025	D	2-20-30	CAROLYN STARKY	827
WA1E-007E-024	D	2-20-30	RODNEY K. CHAMBERS	827
WA1E-007E-023	D	2-20-30	ALLEN D. MASON	827
WA1E-007E-117	D	2-20-30	HEIRS, SUCCESSORS, ASSIGNS, DEVICES, OR DISTRIBUTEEES DAVID C WHITE ESQ., SPECIAL COMMISSIONER ON BEHALF OF D.W. CHESSE OR HIS	822
WA1E-007E-071	D	2-20-30	JOSEPH LONG	836
WA1E-007E-070	D	2-20-30	CHRISTINA CHAMBERS	836
WA1E-007E-069	D	2-20-30	CARRIE E METZGER FKA CARRIE ELIZABETH CHAMBERS	833
WA1E-007E-068	D	2-20-30	DAN I. SWOVELAND	827
WA1E-007E-001	D	2-20-30	PPG INDUSTRIES, INC.	722
WA1E-007E-001	D	2-20-30	PPG INDUSTRIES, INC.	722
WA1E-007E-001	C	2-20-31	PPG INDUSTRIES, INC.	722
WA1E-007E-001	B	2-20-34	PPG INDUSTRIES, INC.	722
WA1E-007E-001	A	2-20-33	PPG INDUSTRIES, INC.	722

WELL OPERATOR TUG HILL OPERATING, LLC
 1320 SOUTH UNIVERSITY DRIVE, SUITE 200
 FORT WORTH TX, 76107
 DESIGNATED AGENT
 DIANNA STAMPER
 CT CORPORATION SYSTEM
 ADDRESS 2400 D BIG TYLER ROAD
 CHARLESTON WV, 25313

**GREER WELL NO. 6H
WELL PLAT LEASE INFORMATION**

Lease No	Tag	Parcel	Oil & Gas Royalty Owner	Deed Book/Pg	
WV16-0076-119	J	5-13-22	KATHERINE ANN WILLIAMS COTHRAN	879	1
WV16-0076-115	J	5-13-22	THE VILLAGE NETWORK, F/K/A BOYS VILLAGE OF SMITHVILLE, OHIO, AN OHIO CORPORATION	872	203
WV16-0076-116	J	5-13-22	JUANITA SANDIFER	872	206
WV16-0076-113	J	5-13-22	HENRY T LONG	867	385
WV16-0076-114	J	5-13-22	THOMAS WHITE, ESQ., SPECIAL COMMISSIONER, ON BEHALF OF JOHN EDWARD HARRIS JR, ET AL: MARION LUCILLE ROBINSON, REVEREND FATHER J F BEAVER, ELOISE CARTER, EVALENA SCHAEFFER, ELEANOR SHUTT, HELEN MARTIN, MARGERY MOORE, CHARLES MOORE, TILLE ISCHY, LELIA TAYL	870	34
WV16-0076-111	J	5-13-22	LORNA M LONG MORGAN	864	323
WV16-0076-112	J	5-13-22	JAMES C LONG AND PATTI LONG	864	326
WV16-0076-108	J	5-13-22	JOHN WHITE	862	423
WV16-0076-109	J	5-13-22	WILLIAM V BUCKNOR	862	421
WV16-0076-110	J	5-13-22	LESLIE F BUCKNOR	862	419
WV16-0076-106	J	5-13-22	SUE WHITE	862	429
WV16-0076-107	J	5-13-22	DON FORGRAVES	862	426
WV16-0076-108	J	5-13-22	JOHN WHITE	862	423
WV16-0076-104	J	5-13-22	IMELDA J SCURLOCK	860	443
WV16-0076-105	J	5-13-22	CAROL F WILSON AND RICHARD WILSON	860	446
WV16-0076-106	J	5-13-22	SUE WHITE	862	429
WV16-0076-102	J	5-13-22	RITA ANN DOEBERT AND RONALD DOEBERT	860	437
WV16-0076-103	J	5-13-22	COLEEN SLAGLE AND FRANKLIN SLAGLE JR	860	440
WV16-0076-104	J	5-13-22	IMELDA J SCURLOCK	860	443
WV16-0076-091	J	5-13-22	IMMANUEL CHURCH OF THE UNITED CHURCH OF CHRIST OF SALEM TOWNSHIP, MONROE COUNTY, OHIO	849	513
WV16-0076-101	J	5-13-22	JAN KAFFENBERGER	860	434
WV16-0076-102	J	5-13-22	RITA ANN DOEBERT AND RONALD DOEBERT	860	437
WV16-0076-080	J	5-13-22	JOSEPH A LONG	849	519
WV16-0076-090	J	5-13-22	JOHN F LONG AND PAM LONG	849	542
WV16-0076-091	J	5-13-22	IMMANUEL CHURCH OF THE UNITED CHURCH OF CHRIST OF SALEM TOWNSHIP, MONROE COUNTY, OHIO	849	513
WV16-0076-074	J	5-13-22	THOMAS F LONG AND JENNIFER LONG	842	398
WV16-0076-075	J	5-13-22	UNITED CHURCH HOMES INC	846	408
WV16-0076-080	J	5-13-22	JOSEPH A LONG	849	519
WV16-0076-033	J	5-13-22	CHRISTINA JEAN RIOUX	796	70
WV16-0076-034	J	5-13-22	MICHAEL EDWARD BARTH	796	68
WV16-0076-035	J	5-13-22	DEAN ROTHENBUHLER	796	42
WV16-0076-036	J	5-13-22	STANLEY RICHMOND	796	62
WV16-0076-029	J	5-13-22	ROBERT D. OKEY	792	646
WV16-0076-030	J	5-13-22	RAE ELLEN STUART	796	38
WV16-0076-031	J	5-13-22	TONDA ROTHENBUHLER	796	40
WV16-0076-033	J	5-13-22	CHRISTINA JEAN RIOUX	796	70
WV16-0076-026	J	5-13-22	RUTH E. BASSETT MEADOWS	792	100
WV16-0076-027	J	5-13-22	ELIZABETH ANN STRAUSBAUGH	792	104
WV16-0076-028	J	5-13-22	JANET LEA BLANKENSHIP	792	580
WV16-0076-029	J	5-13-22	ROBERT D. OKEY	792	646
WV16-0076-023	J	5-13-22	LOIS KAY MORFORD	792	110
WV16-0076-024	J	5-13-22	JODY ELIZONDO	792	93
WV16-0076-025	J	5-13-22	WILLIAM LONG	792	95
WV16-0076-026	J	5-13-22	RUTH E. BASSETT MEADOWS	792	100
WV16-0076-020	J	5-13-22	JACK J. PFALZGRAF	792	118
WV16-0076-021	J	5-13-22	SANDRA CHEYNEY	792	91
WV16-0076-022	J	5-13-22	HERBERT BLACHLY	792	102
WV16-0076-017	J	5-13-22	ANDREW GERST	791	645
WV16-0076-018	J	5-13-22	HAROLD BLACHLY	791	643
WV16-0076-019	J	5-13-22	MARTHA BLACHLY-CROSS	792	112
WV16-0076-014	J	5-13-22	TERRI JEAN GODDARD	790	585
WV16-0076-015	J	5-13-22	RALPH BLACHLY	790	529
WV16-0076-016	J	5-13-22	MARGARET ROSS	790	527
WV16-0076-001	J	5-13-22	PPG INDUSTRIES, INC.	725	123
WV16-0076-013	J	5-13-22	JAMIE LU BENSON	790	531
WV16-0076-001	K	5-13-16	PPG INDUSTRIES, INC.	725	123

WELL OPERATOR TUG HILL OPERATING, LLC
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
FORT WORTH TX, 76107

DESIGNATED AGENT DIANNA STAMPER
CT CORPORATION SYSTEM
ADDRESS 5400 D BIG TYLER ROAD
CHARLESTON WV, 25313

WELL PLAT LEASE INFORMATION
 GREER WELL NO. 6H

Lease No	Tag	Parcel	Oil & Gas Royalty Owner	Deed Book Pg
WV1E-007E-001	K	2-13-25	PPG INDUSTRIES, INC.	123
WV1E-007E-013	1	2-13-25	JAMIE LU BENSON	231
WV1E-007E-001	1	2-13-25	PPG INDUSTRIES, INC.	123
WV1E-007E-016	1	2-13-25	MARGARET ROSS	227
WV1E-007E-015	1	2-13-25	RALPH BLACHLY	250
WV1E-007E-014	1	2-13-25	TERRI LEAN GODDARD	282
WV1E-007E-019	1	2-13-25	MARTHA BLACHLY-CROSS	112
WV1E-007E-018	1	2-13-25	HAROLD BLACHLY	643
WV1E-007E-017	1	2-13-25	ANDREW GERST	291
WV1E-007E-022	1	2-13-25	HERBERT BLACHLY	102
WV1E-007E-021	1	2-13-25	SANDRA CHEINEY	91
WV1E-007E-020	1	2-13-25	JACK I. PFAELZGRA	118
WV1E-007E-026	1	2-13-25	RUTH E. BASSETT MEADOWS	100
WV1E-007E-025	1	2-13-25	WILLIAM LONG	92
WV1E-007E-024	1	2-13-25	LODY ELIZONDO	93
WV1E-007E-023	1	2-13-25	LOIS KAY MORFORD	110
WV1E-007E-029	1	2-13-25	ROBERT D. OKRY	646
WV1E-007E-028	1	2-13-25	JANET LEA BLANKENSHIP	280
WV1E-007E-027	1	2-13-25	ELIZABETH ANN STRAUSBAUGH	104
WV1E-007E-026	1	2-13-25	RUTH E. BASSETT MEADOWS	100
WV1E-007E-033	1	2-13-25	CHRISTINA JEAN RIOUX	70
WV1E-007E-031	1	2-13-25	TONDA ROTHENBUEHLER	40
WV1E-007E-030	1	2-13-25	RAE ELLEN STUART	38
WV1E-007E-029	1	2-13-25	ROBERT D. OKRY	646
WV1E-007E-036	1	2-13-25	STANLEY RICHMOND	62
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 Address 1320 SOUTH UNIVERSITY DRIVE, SUITE 500
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