

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

API 47-103-03151 County Wetzel District Grant
Quad Big Run Pad Name Big177 Field/Pool Name N/A
Farm name Coastal Forest Resources Co. DBA Coastal Timberlands Co. Well Number 513845
Operator (as registered with the OOG) EQT Production Company
Address 625 Liberty Ave. EQT Plaza, Suite 1700 City Pittsburgh State PA Zip 15222

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,381,517.607 Easting 535,742.652
Landing Point of Curve Northing 4,381,646.05 Easting 535,657.58
Bottom Hole Northing 4,383,055.41 Easting 534,877.60

Elevation (ft) 811 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) Synthetic Oil Base Mud 15.8ppg, aliphatic based non-aqueous drilling fluid, barium sulfate, calcium chloride, organophilic clay, quaternary ammonium clay, gilsonite, blended emulsifier, wetting agent, blended graphite, hydrated lime, calcium carbonate, ground walnut shells, fibrous cellulose.

Date permit issued 5/5/2016 Date drilling commenced 6/26/2016 Date drilling ceased 11/22/2016
Date completion activities began 12/13/2016 Date completion activities ceased 1/31/2017
Verbal plugging (Y/N) N 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 170', 280' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1135', 1450' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 100', 153', 431', 541' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED

NAME: [Signature]

DATE: 7-6-17

Reviewed by: [Signature]

07/07/2017

API 47-103 - 03151

Farm name Coastal Forest Resources Co. DBA Coastal Timberlands Co.

Well number 513845

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	36	30	80'	NEW	118.76# A-252	N/A	Y
Surface	28	24	322'	NEW	125.50# X-52	N/A	Y
Coal	22	18 5/8"	1460'	NEW	99.5# J-55	N/A	Y
Intermediate 1	17 1/2"	13 3/8"	2767'	NEW	68# J-55	N/A	Y
Intermediate 2	12 1/4"	9 5/8"	11065'	NEW	47# HC EIP-110	N/A	Y
Intermediate 3							
Production	8 1/2"	5 1/2"	17922'	NEW	23# HC EIP-110	N/A	N
Tubing							
Packer type and depth set							

Comment Details Production Cement job has calculated TOC of 6805' MD, which is greater than 500' TVD above the producing formation. No issues during cement job

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	CLASS A	173	15.6	1.18	204.14	0	8
Surface	CLASS A	743	15.6	1.20	891.60	0	8
Coal	CLASS A	1415	15.6	1.18	1669.70		
Intermediate 1	Class A / Class H	846 / 1318	15.2 / 15.6	1.25 / 1.07	2566.48	0	8
Intermediate 2	Class A / Class H	800 / 2055	12.5 / 15.2	2.29 / 1.12	4133.60	0	8
Intermediate 3							
Production	Class H / Class H	770 / 1510	17.0 / 18.5	1.03 / 1.38	2876.90	6805	8
Tubing							

Drillers TD (ft) 17923'

Loggers TD (ft) 12565'

Deepest formation penetrated Trenton

Plug back to (ft) 11030' TOC for Pilot Hole Plug Back

Plug back procedure Pilot Hole Plug Back: Pump 52 bbls 16.5ppg tuned spacer, 95bbl 17.5ppg Denscem drop dart, 4bbl 17.5 ppg Denscem, 0.94yld, 23bbl 16.5ppg tuned spacer.

Displace with 163bbl 15.8pg OBM. Full returns during cement job.

Kick off depth (ft) 11236' MD

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 CONDUCTOR: NONE

SURFACE: ON SHOE TRACK AND EVERY 500' FEET TO SURFACE

INTERMEDIATE 1: ON SHOE TRACK AND EVERY 500' FEET TO SURFACE

INTERMEDIATE 2: ON SHOE TRACK AND EVERY 500' FEET TO 2567' (Inside of previous casing shoe)

PRODUCTION: ON SHOE TRACK AND EVERY JOINT TO 9,988' (Inside of previous casing shoe)

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 _____

API 47- 103 - 03151 Farm name Coastal Forest Resources Co. DBA Coastal Timberlands Co. Well number 513845

Drilling Contractor N/A
Address _____ City _____ State _____ Zip _____

Logging Company Baker Hughes
Address 370 Westec Dr. City Mt Pleasant State PA Zip 15666

Logging Company Pro Directional
Address 750 Conroe Park North Dr. City Conroe State TX Zip 77303

Cementing Company Halliburton Energy Services
Address 121 Champion Way City Canonsburg State PA Zip 15317

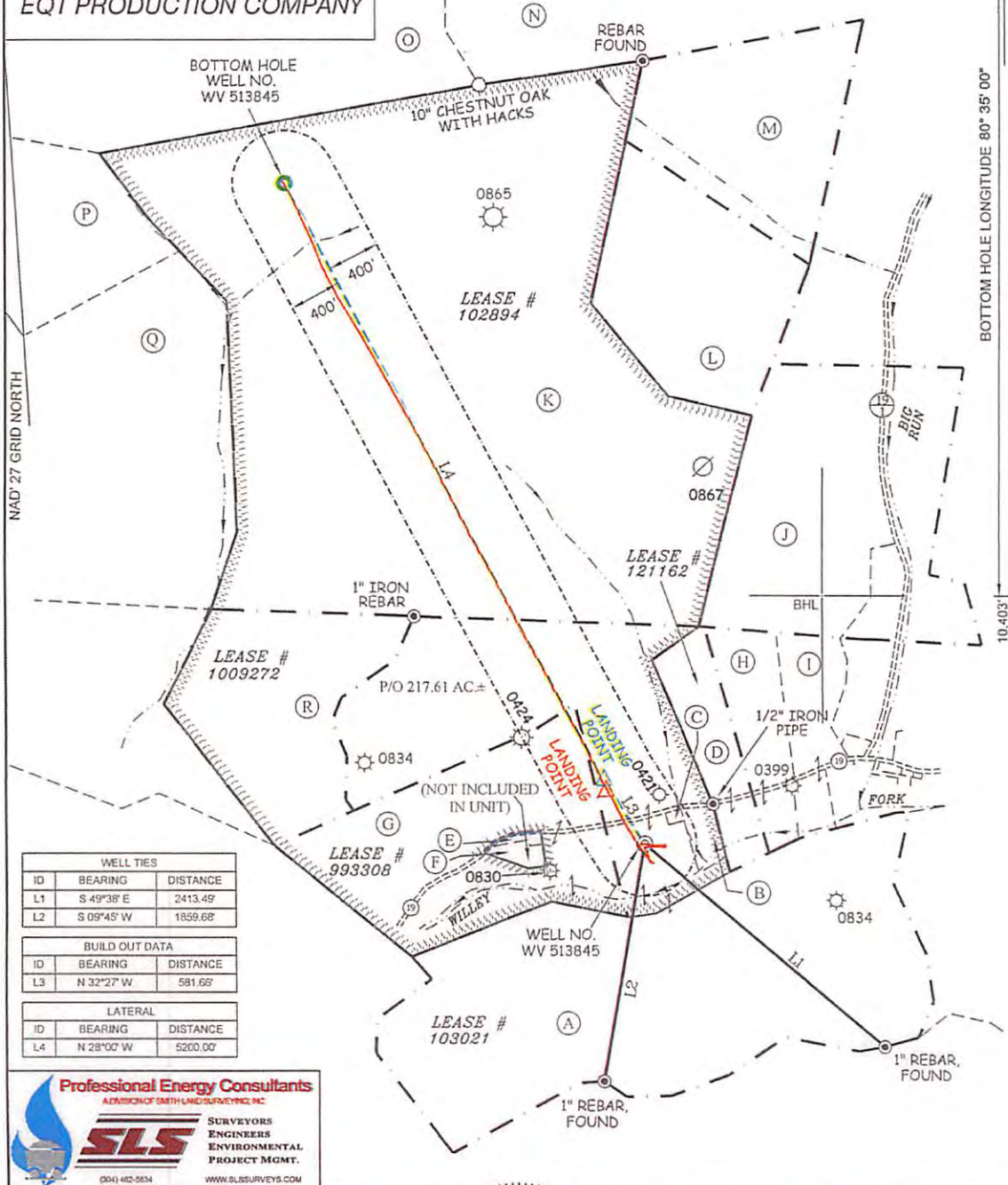
Final Formations Well #513845 API #47-103-03151

Formation Name	Final Top MD (ftGL) (ft)	Final Top (TVD) (ft)	Final Btm MD (ftGL) (ft)	Final Btm (TVD) (ft)
SAND/SHALE	1	1	110	110
COAL	110	110	113	113
SAND/SHALE	113	113	170	170
WAYNESBURG COAL	170	170	174	174
SAND/SHALE	174	174	448	448
MAPLETOWN COAL	448	448	452	452
SAND/SHALE	452	452	558	558
PITTSBURGH COAL	558	558	565	565
SAND/SHALE	565	565	1,730.00	1,730.00
MAXTON	1,730.00	1,730.00	1,846.00	1,846.00
BIG LIME	1,846.00	1,846.00	1,993.00	1,993.00
BIG INJUN	1,993.00	1,993.00	2,412.00	2,412.00
GANTZ	2,412.00	2,412.00	2,563.00	2,563.00
FIFTY FOOT	2,563.00	2,563.00	2,634.00	2,634.00
THIRTY FOOT	2,634.00	2,634.00	2,680.00	2,680.00
GORDON	2,680.00	2,680.00	2,768.00	2,768.00
FORTH SAND	2,768.00	2,768.00	2,807.00	2,807.00
BAYARD	2,807.00	2,807.00	3,353.00	3,353.00
WARREN	3,353.00	3,353.00	3,499.00	3,499.00
SPEECHLEY	3,499.00	3,499.00	4,321.00	4,320.90
RILEY	4,321.00	4,320.90	5,020.00	5,019.70
BENSON	5,020.00	5,019.70	5,350.00	5,349.60
ALEXANDER	5,350.00	5,349.60	6,282.00	6,280.40
RHINESTREET	6,282.00	6,280.40	6,427.00	6,425.00
SONYEA	6,427.00	6,425.00	6,597.00	6,594.50
MIDDLESEX	6,597.00	6,594.50	6,634.00	6,631.30
GENESEE	6,634.00	6,631.30	6,705.00	6,702.10
GENESE0	6,705.00	6,702.10	6,738.00	6,734.90
TULLY	6,738.00	6,734.90	6,757.00	6,753.80
HAMILTON	6,757.00	6,753.80	6,851.00	6,847.40
MARCELLUS	6,851.00	6,847.40	6,899.00	6,895.20
ONONDAGA	6,899.00	6,895.20	6,940.00	6,935.90
HUNTERSVILLE	6,940.00	6,935.90	7,150.00	7,144.30
RIDGELY	7,150.00	7,144.30	7,238.00	7,231.70
HELDERBERG	7,238.00	7,231.70	7,340.00	7,333.30
SALINA	7,340.00	7,333.30	8,740.00	8,727.10
LOCKPORT	8,740.00	8,727.10	9,180.00	9,166.20
ROSE HILL	9,180.00	9,166.20	9,655.00	9,640.80
PACKER SHELL	9,655.00	9,640.80	9,760.00	9,745.80
TUSCORORA	9,760.00	9,745.80	9,910.00	9,895.80
QUEENSTON	9,910.00	9,895.80	10,604.00	10,588.20
REEDSVILLE	10,604.00	10,588.20	12,171.00	12,083.10
UTICA	12,171.00	12,083.10	12,402.00	12,186.30
POINT PLEASANT	12,402.00	12,186.30	17,923.00	12,182.10

07/07/2017

BIG177
WV 513845
EQT PRODUCTION COMPANY

2,998'
 BOTTOM HOLE LATITUDE 39° 37' 30" THL



WELL TIES		
ID	BEARING	DISTANCE
L1	S 49°38' E	2413.45'
L2	S 09°45' W	1859.68'

BUILD OUT DATA		
ID	BEARING	DISTANCE
L3	N 32°27' W	581.66'

LATERAL		
ID	BEARING	DISTANCE
L4	N 28°00' W	5200.00'

Professional Energy Consultants
 A DIVISION OF SMITH LAND SURVEYING, INC.

 SURVEYORS
 ENGINEERS
 ENVIRONMENTAL
 PROJECT MGMT.
 (304) 402-5634 WWW.SLSURVEYS.COM

AS DRILLED COORDINATES (BIG177 H16)
 (S.P.C. NORTH ZONE) (UTM/M ZONE 17 NORTH)

NAD27 S.P.C.(FT)	N. 396,130.043	E. 1,694,484.912
NAD27 GEO.	LAT-(N) 39.582547	LONG-(W) 80.542081
NAD83 UTM (M)	N. 4,381,517.607	E. 535,742.652

LANDING POINT

NAD27 S.P.C.(FT)	N. 206,556.17	E. 1,894,212.78
NAD27 GEO.	LAT-(N) 39.563708	LONG-(W) 80.584965
NAD83 UTM (M)	N. 4,381,648.05	E. 535,687.58

BOTTOM HOLE

NAD27 S.P.C.(FT)	N. 401,223.69	E. 1,891,730.38
NAD27 GEO.	LAT-(N) 39.556439	LONG-(W) 80.593073
NAD83 UTM (M)	N. 4,383,055.41	E. 534,877.80

C. VICTOR MOYERS
 LICENSED
 No. 849
 STATE OF
WEST VIRGINIA
 PROFESSIONAL SURVEYOR
 12-06-16

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

LEGEND

LEASE LINE	---
UNIT BOUNDARY	-----
SURFACE LINE
PROPOSED PATH	---
AS DRILLED PATH	---
OFFSET LINE	---
TIE LINE	---
CREEK	~~~~~
ROAD	---
COUNTY ROUTE	⊙
PROPOSED WELL	⊙
EXISTING WELL	⊙
PERMITTED WELL	⊙
PLUGGED WELL	⊙
GRANT DISTRICT TAX MAP-PARCEL	G-00-00

SCALE 1" = 1000' FILE NO. 6806AD513845.dwg
 DATE MAY 06, 20 15
 REVISED 08/25/15, 03/04/16, 03/15/16 & 12/06/16
 OPERATORS WELL NO. WV 513845
 API WELL NO. 47 - 103 - 03151H
 STATE COUNTY PERMIT

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

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

07/07/2017

BIG177
WV 513845
EQT PRODUCTION COMPANY

2,998'
 BOTTOM HOLE LATITUDE 39° 37' 30" THL

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(BIG177 H16)

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 NAD27 GEO. LAT-(N) 39.583708 LONG-(W) 80.584965
 NAD83 UTM (M) N. 4,381,646.05 E. 635,657.58
BOTTOM HOLE
 NAD27 S.P.C.(FT) N. 401,223.66 E. 1,691,730.38
 NAD27 GEO. LAT-(N) 39.596439 LONG-(W) 80.593973
 NAD83 UTM (M) N. 4,383,055.41 E. 634,877.60

NOTES ON SURVEY

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS > 2500 SQ.FT. WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
2. SEE REFERENCE BOX FOR DISTANCE TO AN EXISTING DWELLING.
3. AS DRILLED INFORMATION PROVIDED BY EQT.

A	COASTAL FOREST RESOURCES COMPANY d/b/a COASTAL TIMBERLANDS COMPANY	217.61 ACRES±	TM G-13-06
B	IKEY J. & TINA M. WILLEY	2.15 ACRES±	TM G-08-65
C	EQT GATHERING, LLC.	0.418 ACRES±	TM G-8-66
D	JOHN D. PARKS	15.50 ACRES±	TM G-8-35
E	HIGGINS CHAPEL CHURCH	0.99 ACRES±	TM G-8-58
F	MARY S. EASTHAM ET AL	1.45 ACRES±	TM G-8-64
G	COASTAL FOREST RESOURCES COMPANY d/b/a COASTAL TIMBERLANDS COMPANY	55.06 ACRES±	TM G-13-6.1
H	JAMES L. & KAREN DULANEY	14.10 ACRES±	TM G-8-36
I	JAMES L. & KAREN DULANEY	14.10 ACRES±	TM G-8-37
J	DALE DULANEY ET AL	70.81 ACRES±	TM G-8-23
K	COASTAL FOREST RESOURCES COMPANY d/b/a COASTAL TIMBERLANDS COMPANY	337 ACRES±	TM G-8-18
L	PHILLIP BRENT SHREVE ET AL.	46.45 ACRES±	TM G-8-19
M	GARLAND MINOR	48.10 ACRES±	TM G-8-10
N	DANNY STOCKSLAGER ET AL.	170 ACRES±	TM G-8-01
O	COASTAL FOREST RESOURCES COMPANY d/b/a COASTAL TIMBERLANDS COMPANY	178 ACRES±	TM G-7-03
P	COASTAL FOREST RESOURCES COMPANY d/b/a COASTAL TIMBERLANDS COMPANY	120 ACRES±	TM G-7-10
Q	LORRAINE S. WILDMAN ET AL.	67 ACRES±	TM G-8-17
R	HALLIE M. HARDBARGER	48.25 ACRES±	TM G-8-34

BHL

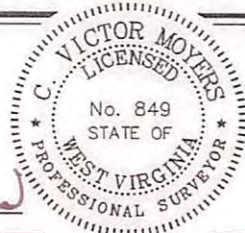
TOP HOLE LONGITUDE 80° 35' 00" 286'
 BOTTOM HOLE LONGITUDE 80° 35' 00" 10.403'



ROYALTY OWNERS		
COASTAL FOREST RESOURCES CO. d/b/a COASTAL TIMBERLANDS CO. ET AL	57.5 AC.±	LEASE NO. 993308
EQT PRODUCTION COMPANY	300 AC.±	LEASE NO. 102894

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

P.S. 849 *C. Victor Moyers*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE MAY 06, 20 15
 REVISED 08/25/15, 03/04/16, 03/15/16 & 12/06/16
 OPERATORS WELL NO. WV 513845
 API WELL NO. 47 - 103 - 03151H
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 6806AD513845.dwg
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)
 SCALE 1" = 1000'

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

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

LOCATION: (GROUND) (PROPOSED)
 ELEVATION 809' 811' WATERSHED WILLEY FORK OF NORTH FORK FISHING CREEK
 DISTRICT GRANT COUNTY WETZEL QUADRANGLE BIG RUN 7.5'

SURFACE OWNER COASTAL FOREST RESOURCES CO. d/b/a COASTAL TIMBERLANDS CO. ACREAGE 27± OF 217±
 ROYALTY OWNER HIGGINS FAMILY TRUST ACREAGE 242.5±

PROPOSED WORK:
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION POINT PLEASANT
 ESTIMATED DEPTH 12,346'

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

COUNTY NAME PERMIT

07/07/2017

513845 47-103-03151-0000 - Perforations

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	12/8/2016	17,811	17,922	10	POINT PLEASANT
1	12/15/2016	17,692	17,777	40	POINT PLEASANT
2	12/16/2016	17,513	17,650	40	POINT PLEASANT
3	12/17/2016	17,333	17,470	40	POINT PLEASANT
4	12/18/2016	17,153	17,290	40	POINT PLEASANT
5	12/18/2016	16,978	17,110	40	POINT PLEASANT
6	12/19/2016	16,798	16,928	40	POINT PLEASANT
7	1/22/2017	16,613	16,750	40	POINT PLEASANT
8	1/22/2017	16,430	16,568	40	POINT PLEASANT
9	1/22/2017	16,253	16,392	40	POINT PLEASANT
10	1/23/2017	16,073	16,206	40	POINT PLEASANT
11	1/24/2017	15,895	16,030	40	POINT PLEASANT
12	1/24/2017	15,713	15,850	40	POINT PLEASANT
13	1/24/2017	15,533	15,670	40	POINT PLEASANT
14	1/24/2017	15,353	15,490	40	POINT PLEASANT
15	1/25/2017	15,173	15,310	40	POINT PLEASANT
16	1/25/2017	14,993	15,130	40	POINT PLEASANT
17	1/26/2017	14,813	14,950	40	POINT PLEASANT
18	1/27/2017	14,633	14,770	40	POINT PLEASANT
19	1/27/2017	14,453	14,590	40	POINT PLEASANT
20	1/28/2017	14,273	14,410	40	POINT PLEASANT
21	1/28/2017	14,093	14,230	40	POINT PLEASANT
22	1/28/2017	13,913	14,050	40	POINT PLEASANT
23	1/28/2017	13,733	13,870	40	POINT PLEASANT
24	1/29/2017	13,553	13,690	40	POINT PLEASANT
25	1/29/2017	13,373	13,510	40	POINT PLEASANT
26	1/30/2017	13,193	13,330	40	POINT PLEASANT
27	1/30/2017	13,013	13,150	40	POINT PLEASANT
28	1/31/2017	12,833	12,970	40	POINT PLEASANT
29	1/31/2017	12,653	12,790	40	POINT PLEASANT
30	1/31/2017	12,473	12,610	40	POINT PLEASANT

513845 47-103-03151-0000 - Stimulated Stages

Stage Number	Stimulation 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)
Initiation Sleeve	12/13/2016	29	13,343	14,268	11,160	0	2,484	0
1	12/15/2016	74	12,489	14,091	9,192	384501	14,413	0
2	12/16/2016	82	12,996	13,675	9,245	398622	12,298	0
3	12/17/2016	78	12,525	13,454	9,441	398489	10,806	0
4	12/18/2016	89	13,552	14,184	9,279	401113	10,697	0
5	12/18/2016	83	12,850	13,680	9,119	397569	10,313	0
5.01	1/21/2017	38	10,788	13,029	9,362	0	1,005	0
6	1/21/2017	80	12,469	13,616	9,791	400726	10,856	0
7	1/22/2017	90	13,365	13,846	9,710	400886	10,556	0
8	1/22/2017	89	13,521	14,189	10,180	394234	12,310	0
9	1/22/2017	87	12,982	15,152	13,592	153212	6,654	0
9.01	1/23/2017	88	12,789	12,987	9,820	0	7,553	0
10	1/23/2017	91	12,811	13,516	9,699	284744	10,408	0
11	1/23/2017	89	12,542	12,813	9,705	405136	10,089	0
12	1/24/2017	91	13,219	13,703	9,688	397318	10,429	0
13	1/24/2017	91	12,596	13,465	9,366	400218	10,149	0
14	1/24/2017	90	12,477	13,514	9,452	397394	10,187	0
15	1/25/2017	89	12,114	14,293	9,355	397266	12,530	0
16	1/25/2017	90	12,250	13,114	9,261	398878	9,865	0
17	1/25/2017	84	12,394	14,111	9,213	397451	11,068	0
18	1/26/2017	86	12,315	13,411	9,487	397008	9,454	0
19	1/27/2017	86	12,826	14,278	9,575	402115	10,291	0
20	1/27/2017	89	12,643	13,798	9,480	401931	9,639	0
21	1/28/2017	91	12,585	13,699	9,478	400392	9,574	0
22	1/28/2017	86	12,658	13,712	9,458	399206	9,828	0
22.01	1/28/2017	51	11,377	12,309	9,767	356660	848	0
23	1/28/2017	85	13,023	13,794	9,911	300666	10,279	0
24	1/29/2017	90	13,083	13,795	9,217	384528	9,511	0
25	1/29/2017	84	13,176	13,782	10,174	400399	10,762	0
26	1/29/2017	85	13,147	13,825	9,678	399802	12,034	0
27	1/30/2017	85	12,833	13,692	9,783	400591	9,986	0
27.01	1/30/2017	26	10,734	12,967	7,923	0	551	0
28	1/30/2017	88	12,915	13,802	9,906	398774	10,196	0
29	1/31/2017	89	12,969	13,855	9,929	397858	9,775	0
30	1/31/2017	89	12,957	13,561	9,885	382666	9,617	0

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/13/2016
Job End Date:	1/31/2017
State:	West Virginia
County:	Wetzel
API Number:	47-103-03151-00-00
Operator Name:	EQT Production
Well Name and Number:	513845
Latitude:	39.58254700
Longitude:	-80.58398100
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	12,186
Total Base Water Volume (gal):	14,017,281
Total Base Non Water Volume:	0



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
Water	Halliburton	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	89.62805	None
FR-76	Halliburton	Friction reducer					
				Listed Below			

Hydrochloric Acid (15%)	Halliburton	Acidizing					
				Listed Below			
WG-36	Halliburton	Gelling agent					
				Listed Below			
Other Chemical (s)	Listed Above	See Trade Name (s) List					
				Listed Below			
SP Breaker	Halliburton	Breaker					
				Listed Below			
LP-70	Halliburton	Scale Inhibitor					
				Listed Below			
MC-B-8614	Multi-chem	Biocide					
				Listed Below			
Sand (Proppant)	Halliburton	Proppant					
				Listed Below			
HAI-OS Acid Inhibitor	Halliburton	Corrosion Inhibitor					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Silica Substrate	14808-60-7	100.00000	9.06466	None
			Guar Gum	9000-30-0	100.00000	0.63762	None

			Hydrochloric Acid	7647-01-0	15.00000	0.07594	None
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02295	None
			Inorganic salt	Proprietary	30.00000	0.02295	None
			Glutaraldehyde	111-30-8	30.00000	0.01805	None
			Glutaraldehyde	111-30-8	30.00000	0.01805	
			Ethylene glycol	107-21-1	60.00000	0.01451	
			Ethylene glycol	107-21-1	60.00000	0.01451	None
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.00000	0.00301	None
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.00000	0.00301	
			Sodium Persulfate	7775-27-1	100.00000	0.00170	None
			Methanol	67-56-1	60.00000	0.00051	None
			Ethoxylated alcohols	Proprietary	30.00000	0.00025	None
			Modified thiourea polymer	Proprietary	30.00000	0.00025	
			Modified thiourea polymer	Proprietary	30.00000	0.00025	None
			Propargyl alcohol	107-19-7	10.00000	0.00008	
			Propargyl alcohol	107-19-7	10.00000	0.00008	None

* 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)

BIG177
WV 513845
EQT PRODUCTION COMPANY

2,998'
 BOTTOM HOLE LATITUDE 39° 37' 30" THL

AS DRILLED COORDINATES (BIG177 H16)			
(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)			
NAD'27 S.P.C.(FT)	N. 396,130.043	E. 1,694,484.912	
NAD'27 GEO.	LAT-(N) 39.582547	LONG-(W) 80.583981	
NAD'83 UTM (M)	N. 4,381,517.607	E. 535,742.652	
LANDING POINT			
NAD'27 S.P.C.(FT)	N. 396,556.17	E. 1,694,212.78	
NAD'27 GEO.	LAT-(N) 39.583708	LONG-(W) 80.584965	
NAD'83 UTM (M)	N. 4,381,646.05	E. 535,657.58	
BOTTOM HOLE			
NAD'27 S.P.C.(FT)	N. 401,223.66	E. 1,691,730.38	
NAD'27 GEO.	LAT-(N) 39.596439	LONG-(W) 80.593973	
NAD'83 UTM (M)	N. 4,383,055.41	E. 534,877.60	

NOTES ON SURVEY

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ.FT. WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
2. SEE REFERENCE BOX FOR DISTANCE TO AN EXISTING DWELLING.
3. AS DRILLED INFORMATION PROVIDED BY EQT.

Block	Owner	Acres	Tract
A	COASTAL FOREST RESOURCES COMPANY d/b/a COASTAL TIMBERLANDS COMPANY	217.61 ACRES±	TM G-13-06
B	IKEY J. & TINA M. WILLEY	2.15 ACRES±	TM G-08-65
C	EQT GATHERING, LLC.	0.418 ACRES±	TM G-8-66
D	JOHN D. PARKS	15.50 ACRES±	TM G-8-35
E	HIGGINS CHAPEL CHURCH	0.99 ACRES±	TM G-8-58
F	MARY S. EASTHAM ET AL	1.45 ACRES±	TM G-8-64
G	COASTAL FOREST RESOURCES COMPANY d/b/a COASTAL TIMBERLANDS COMPANY	55.06 ACRES±	TM G-13-6.1
H	JAMES L. & KAREN DULANEY	14.10 ACRES±	TM G-8-36
I	JAMES L. & KAREN DULANEY	14.10 ACRES±	TM G-8-37
J	DALE DULANEY ET AL	70.81 ACRES±	TM G-8-23
K	COASTAL FOREST RESOURCES COMPANY d/b/a COASTAL TIMBERLANDS COMPANY	337 ACRES±	TM G-8-18
L	PHILLIP BRENT SHREVE ET AL	46.45 ACRES±	TM G-8-19
M	GARLAND MINOR	48.10 ACRES±	TM G-8-10
N	DANNY STOCKSLAGER ET AL	170 ACRES±	TM G-8-01
O	COASTAL FOREST RESOURCES COMPANY d/b/a COASTAL TIMBERLANDS COMPANY	178 ACRES±	TM G-7-03
P	COASTAL FOREST RESOURCES COMPANY d/b/a COASTAL TIMBERLANDS COMPANY	120 ACRES±	TM G-7-10
Q	LORRAINE S. WILDMAN ET AL	67 ACRES±	TM G-8-17
R	HALLIE M. HARDBARGER	48.25 ACRES±	TM G-8-34



ROYALTY OWNERS		
COASTAL FOREST RESOURCES CO. d/b/a COASTAL TIMBERLANDS CO. ET AL	57.5 AC.±	LEASE NO. 993308
EQT PRODUCTION COMPANY	300 AC.±	LEASE NO. 102894

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



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE MAY 06, 20 15
 REVISED 08/25/15, 03/04/16, 03/15/16 & 12/06/16
 OPERATORS WELL NO. WV 513845
 API WELL NO. 47 - 103 - 03151H
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 6806AD513845.dwg
 HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK) SCALE 1" = 1000'

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

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

LOCATION: (GROUND) (PROPOSED)
 ELEVATION 809' 811' WATERSHED WILLEY FORK OF NORTH FORK FISHING CREEK
 DISTRICT GRANT COUNTY WETZEL QUADRANGLE BIG RUN 7.5'

SURFACE OWNER COASTAL FOREST RESOURCES CO. d/b/a COASTAL TIMBERLANDS CO. ACREAGE 27± OF 217±
 ROYALTY OWNER HIGGINS FAMILY TRUST ACREAGE 242.5±

PROPOSED WORK:
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION POINT PLEASANT
 ESTIMATED DEPTH 12,346'

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

BOTTOM HOLE LONGITUDE 80° 35' 00"

TOP HOLE LONGITUDE 80°35'00" 286"

10,403'

COUNTY NAME

PERMIT

07/07/2017

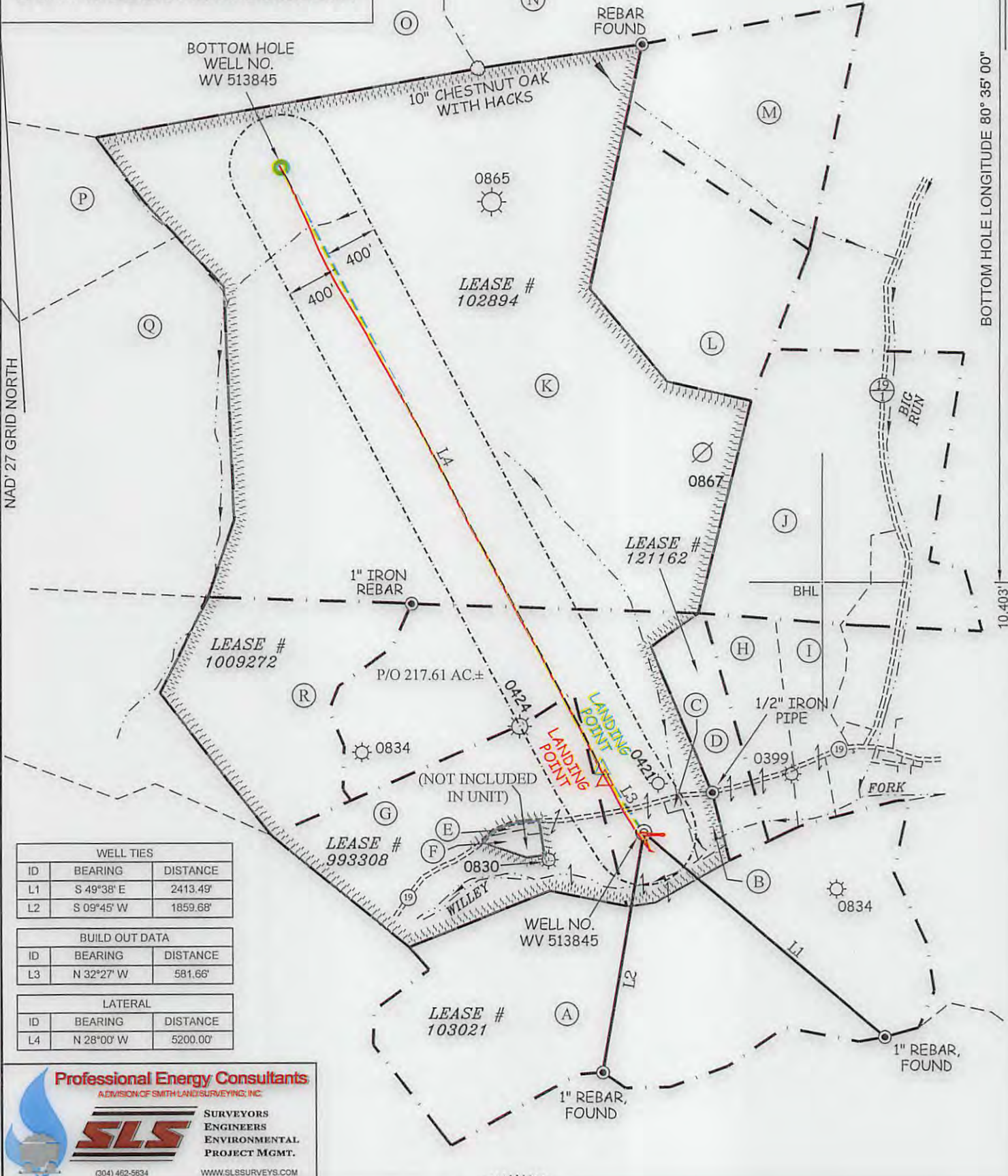
BIG177
WV 513845
EQT PRODUCTION COMPANY

TOP HOLE LATITUDE 39°35'00" 183"
 2,998'
 BOTTOM HOLE LATITUDE 39° 37' 30" THL

BOTTOM HOLE LONGITUDE 80° 35' 00"

TOP HOLE LONGITUDE 80°35'00" 286'

NAD'27 GRID NORTH



WELL TIES		
ID	BEARING	DISTANCE
L1	S 49°38' E	2413.49'
L2	S 09°45' W	1859.68'

BUILD OUT DATA		
ID	BEARING	DISTANCE
L3	N 32°27' W	581.66'

LATERAL		
ID	BEARING	DISTANCE
L4	N 28°00' W	5200.00'

Professional Energy Consultants
 A DIVISION OF SMITH LAND SURVEYING, INC.

SLS SURVEYORS
 ENGINEERS
 ENVIRONMENTAL
 PROJECT MGMT.

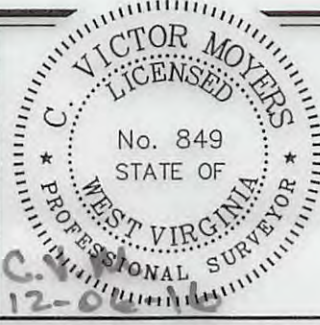
(304) 462-5834 WWW.SLSURVEYS.COM

AS DRILLED COORDINATES (BIG177 H16)

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)
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(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

LEGEND

- LEASE LINE
- UNIT BOUNDARY
- SURFACE LINE
- PROPOSED PATH
- AS DRILLED PATH
- OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- PLUGGED WELL
- GRANT DISTRICT TAX MAP-PARCEL

SCALE 1" = 1000' FILE NO. 6806AD513845.dwg

DATE MAY 06, 20 15

REVISED 08/25/15, 03/04/16, 03/15/16 & 12/06/16

OPERATORS WELL NO. WV 513845

API WELL NO. 47 - 103 - 03151H

NO. STATE COUNTY PERMIT

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

0770772017

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT EQT PRODUCTION COMPANY

ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 BRIDGEPORT, WV 26330

COUNTY NAME PERMIT