

PM

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

DECEIVED
Office of Oil and Gas

OCT 14 2014

WV Department of
Environmental Protection

API 47 - 103 - 02901 County Wetzel District Grant
Quad Big Run 7.5' Pad Name BIG 57 Field/Pool Name _____
Farm name J.M. ALLEN ESTATE ET AL Well Number 513725
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 4378234 Easting 540607
Landing Point of Curve Northing 4377974 Easting 540382
Bottom Hole Northing 4376617 Easting 541133

Elevation (ft) 919 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)

Water base Mud 13.6 ppg barium sulfate, sodium chloride, xanthan gum, polyanionic cellulose, modified starch, sodium hydroxide, phosphonates and alkyl phosphates, glutaraldehyde solution, calcium hydroxide, partially hydrolyzed polyacrylamide/polyacrylate, potassium chloride, sodium carbonate, ground walnut shells, alcohol and modified fatty acid, ferrochrome lignosulfonate, calcium carbonate, fibrous cellulose

Date permit issued 7/24/2013 Date drilling commenced 8/12/2013 Date drilling ceased 11/7/2013
Date completion activities began 4/6/2014 Date completion activities ceased 4/15/2014
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 641 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1487, 1549 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 93, 359, 523, 605, 648 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

10/31/2014

API 47-103 - 02901 Farm name J.M. ALLEN ESTATE ET AL Well number 513725

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	30"	26"	30	New	82.6#		Y
Surface	17-1/2"	13-3/8"	893'	New	54.5#	394, 433	Y
Coal							
Intermediate 1	12-3/8"	9-5/8"	2983'	New	40#		Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	13,230'	New	20#		N
Tubing							
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	Class A	73	15.6	1.18	86.14	0	8
Surface	Class A	820	15.6	1.25	1025	0	8
Coal							
Intermediate 1	Class A	1,440	15.6	1.18	1699.2	0	8
Intermediate 2							
Intermediate 3							
Production	Class A/Class H	800/750	14.2/15.2	1.32/1.94	2511	3500	8
Tubing							

Drillers TD (ft) 13,280' Loggers TD (ft) N/A
 Deepest formation penetrated Geneseo Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5,002'

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 - N/A

Surface - -Bow spring centralizers to be placed at casing shoe and 264'
 Intermediate - -Bow spring centralizers to be placed at shoe, 2483, 1983, 1483, 983, 483
 Production - Run centralizers every other joint from 3,500-13,230'

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 47-103-02901

Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
SAND / SHALE	0	0	93	93
FRESH WATER ZONE	1	1	641	641
COAL	93	93	96	96
SAND / SHALE	96	96	359	359
COAL	359	359	361	361
SAND / SHALE	361	361	523	523
COAL	523	523	526	526
SAND / SHALE	526	526	605	605
COAL	605	605	613	613
SAND / SHALE	613	613	648	648
COAL	648	648	657	657
SAND / SHALE	657	657	1,727.00	1,727.00
MAXTON	1,727.00	1,727.00	1,851.00	1,851.00
BIG LIME	1,851.00	1,851.00	2,218.00	2,218.00
WEIR	2,218.00	2,218.00	2,419.00	2,419.00
GANTZ	2,419.00	2,419.00	2,539.00	2,539.00
50F	2,539.00	2,539.00	2,618.00	2,618.00
30F	2,618.00	2,618.00	2,668.00	2,668.00
GORDON	2,668.00	2,668.00	2,727.00	2,727.00
4TH	2,727.00	2,727.00	2,843.00	2,843.00
BAYARD	2,843.00	2,843.00	2,947.00	2,946.90
5TH	2,947.00	2,946.90	3,320.00	3,319.90
WARREN	3,320.00	3,319.90	3,367.00	3,366.90
B-5	3,367.00	3,366.90	3,461.00	3,460.90
SPEECHLEY	3,461.00	3,460.90	3,854.00	3,853.90
BALLTOWN A	3,854.00	3,853.90	3,855.00	3,854.90
BALLTOWN B	3,855.00	3,854.90	4,349.00	4,348.90
BRADFORD	4,349.00	4,348.90	4,696.00	4,695.80
RILEY	4,696.00	4,695.80	4,934.00	4,933.80
BENSON	4,934.00	4,933.80	5,351.00	5,331.10
ALEXANDER	5,351.00	5,331.10	5,403.00	5,374.00
ELKS	5,403.00	5,374.00	6,975.00	6,598.30
SONYEA	6,975.00	6,598.30	7,180.00	6,760.60
MIDDLESEX	7,180.00	6,760.60	7,229.00	6,793.70
GENESSEE	7,229.00	6,793.70	7,570.00	6,934.50
GENESE0	7,570.00	6,934.50	13,280.00	7,119.81

10/31/2014

Amended Report with Mylar plat attached
Well #: 513725
API 47-103-02901

Updated Frac Focus quantities

Re-perforated stages 24 (24.1) 29 (29.1) and 30 (30.1)

Combined stages 29 and 30

10/31/2014

513725 - Perforations

API-47-103-02901

Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	4/6/2014	13,204.00	13,207.00	10	Geneseo
1	4/6/2014	13,083.00	13,175.00	32	Geneseo
2	4/6/2014	12,933.00	13,055.00	40	Geneseo
3	4/7/2014	12,783.00	12,905.00	40	Geneseo
4	4/7/2014	12,630.00	12,755.00	40	Geneseo
5	4/7/2014	12,483.00	12,605.00	40	Geneseo
6	4/7/2014	12,333.00	12,455.00	40	Geneseo
7	4/7/2014	12,183.00	12,305.00	40	Geneseo
8	4/8/2014	12,033.00	12,152.00	40	Geneseo
9	4/8/2014	11,883.00	12,005.00	40	Geneseo
10	4/8/2014	11,733.00	11,855.00	40	Geneseo
11	4/8/2014	11,583.00	11,700.00	40	Geneseo
12	4/9/2014	10,683.00	10,803.00	40	Geneseo
13	4/9/2014	11,433.00	11,555.00	40	Geneseo
14	4/9/2014	11,284.00	11,405.00	40	Geneseo
15	4/9/2014	11,133.00	11,255.00	40	Geneseo
16	4/9/2014	10,983.00	11,097.00	40	Geneseo
17	4/9/2014	10,833.00	10,953.00	40	Geneseo
18	4/10/2014	10,531.00	10,653.00	40	Geneseo
19	4/10/2014	10,383.00	10,503.00	40	Geneseo
20	4/10/2014	10,233.00	10,353.00	40	Geneseo
21	4/10/2014	10,083.00	10,203.00	40	Geneseo
22	4/10/2014	9,933.00	10,053.00	40	Geneseo
23	4/11/2014	9,783.00	9,903.00	40	Geneseo
24	4/11/2014	9,633.00	9,753.00	40	Geneseo
24.1 (Re-Perf)	4/11/2014	9,608.00	9,653.00	32	Geneseo
25	4/12/2014	9,456.00	9,576.00	40	Geneseo
26	4/12/2014	9,306.00	9,426.00	40	Geneseo
27	4/12/2014	9,156.00	9,276.00	40	Geneseo
28	4/12/2014	9,006.00	9,121.00	40	Geneseo
29	4/13/2014	8,853.00	8,974.00	40	Geneseo
29.1 (Re-Perf)	4/13/2014	8,833.00	8,878.00	32	Geneseo
30	4/13/2014	8,706.00	8,826.00	40	Geneseo
30.1 (Re-Perf)	4/13/2014	8,666.00	8,711.00	32	Geneseo
31	4/13/2014	8,516.00	8,636.00	40	Geneseo
32	4/14/2014	8,366.00	8,486.00	40	Geneseo
33	4/14/2014	8,216.00	8,336.00	40	Geneseo
34	4/14/2014	8,066.00	8,182.00	40	Geneseo
35	4/14/2014	7,916.00	8,036.00	40	Geneseo
36	4/14/2014	7,766.00	7,886.00	40	Geneseo
37	4/14/2014	7,616.00	7,736.00	40	Geneseo
38	4/15/2014	7,466.00	7,582.00	40	Geneseo

513725 - Stimulated Stages

API-47-103-02901

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	4/6/2014	19.00	7,792.00	NA	3,927	NA	999	0
1	4/6/2014	90.00	8,653.00	6,752.00	4,148	200,480	5,033	0
2	4/7/2014	90.00	8,506.00	8,308.00	4,329	198,880	5,113	0
3	4/7/2014	91.00	8,444.00	7,693.00	4,274	200,660	5,194	0
4	4/7/2014	90.00	8,328.00	7,428.00	4,356	202,190	5,200	0
5	4/7/2014	89.00	8,531.00	6,970.00	4,356	201,050	5,379	0
6	4/7/2014	89.00	8,611.00	7,637.00	4,256	201,070	5,068	0
7	4/8/2014	86.00	8,684.00	8,451.00	4,689	201,070	5,081	0
8	4/8/2014	85.00	8,622.00	7,943.00	5,014	203,550	5,236	0
9	4/8/2014	87.00	8,690.00	6,995.00	4,377	200,800	5,167	0
10	4/8/2014	93.00	8,655.00	6,412.00	4,367	201,340	5,199	0
11	4/9/2014	95.00	8,535.00	6,602.00	4,616	199,230	5,100	0
12	4/9/2014	88.00	8,684.00	6,512.00	4,256	200,200	5,172	0
13	4/9/2014	88.00	8,708.00	6,487.00	4,249	200,490	5,099	0
14	4/9/2014	86.00	8,812.00	6,584.00	4,302	200,470	5,105	0
15	4/9/2014	92.00	8,471.00	6,988.00	4,313	200,260	5,161	0
16	4/9/2014	96.00	8,385.00	4,960.00	4,295	202,070	5,103	0
17	4/10/2014	95.00	8,473.00	6,223.00	4,376	201,020	5,153	0
18	4/10/2014	88.00	8,514.00	7,160.00	4,760	200,750	5,122	0
19	4/10/2014	90.10	8,756.00	7,550.00	6,069	200,300	5,210	0
20	4/10/2014	92.60	8,807.00	6,917.00	5,615	200,090	4,892	0
21	4/10/2014	84.00	8,937.00	7,346.00	6,866	200,260	5,206	0
22	4/10/2014	92.00	8,613.00	6,959.00	6,427	201,940	5,124	0
23	4/11/2014	90.50	8,380.00	7,321.00	5,661	199,990	6,090	0
24	4/11/2014	78.00	8,281.00	6,906.00	6,030	39,340	2,542	0
24.1 (Re-Perf)	4/12/2014	87.00	8,132.00	NA	4,942	162,540	4,672	0
25	4/12/2014	96.00	8,776.00	6,766.00	5,600	201,050	4,672	0
26	4/12/2014	97.10	8,772.00	6,387.00	4,370	199,920	4,672	0
27	4/12/2014	98.00	8,333.00	6,588.00	4,560	201,440	5,116	0
28	4/13/2014	95.80	8,487.00	6,977.00	4,317	202,360	5,075	0
29	4/13/2014	41.50	8,507.00	7,954.00	5,540	3,500	3,370	0
29.1 (Re-Perf)	4/13/2014	46.00	8,267.00	NA	5,740	1,500	2,407	0
30	4/13/2014	85.30	8,884.00	6,708.00	5,153	104,890	4,771	0
30.1 (Re-Perf)	4/13/2014	95.00	8,401.00	NA	4,606	294,900	9,269	0
31	4/14/2014	91.00	8,541.00	7,353.00	4,460	201,570	6,060	0
32	4/14/2014	95.00	8,377.00	7,070.00	4,678	201,120	5,131	0
33	4/14/2014	93.20	8,847.00	7,600.00	4,342	201,720	4,889	0
34	4/14/2014	95.80	8,419.00	7,585.00	4,334	201,240	5,066	0
35	4/14/2014	88.50	8,896.00	6,459.00	4,313	200,840	5,107	0
36	4/14/2014	95.00	8,176.00	7,521.00	4,671	204,980	6,973	0
37	4/15/2014	96.00	8,277.00	7,195.00	4,638	198,440	5,296	0
38	4/15/2014	100.00	7,656.00	7,993.00	4,460	191,260	5,380	0

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	4/6/2014
Job End Date:	4/15/2014
State:	West Virginia
County:	Wetzel
API Number:	47-103-02901-00-00
Operator Name:	EQT Production
Well Name and Number:	BIG57 - 513725
Longitude:	-80.52754100
Latitude:	39.55274000
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,120
Total Base Water Volume (gal):	8,848,308
Total Base Non Water Volume:	392,168



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	USWS	Carrier	H2O	7732-18-5	100.00000	90.02234	
Sand	USWS	Proppant	Crystalline Silica	14808-60-7	100.00000	9.31995	
MX-5	Halliburton	Biocide	Sodium Nitrate	7631-99-4	60.00000	0.06269	
Hydrochloric Acid 15%	USWS	Acidizing	Hydrochloric Acid	7647-01-0	15.00000	0.04424	
WFRA-40Se	USWS	Reduces Friction	Hydrotreated Petroleum Distillates	64742-47-8	20.00000	0.02010	
			Sodium Chloride	7647-14-5	20.00000	0.02010	
SI-1100	USWS	Prevents Scale	Ethylene Glycol	107-21-1	40.00000	0.01130	
MX-8	Halliburton	Biocide	Bacteria Culture	000-00-0	100.00000	0.01067	
LGC-15	USWS	Adds Viscosity	Petroleum Distillates	64742-47-8	60.00000	0.00921	
AI-301	USWS	Acid Inhibitor	Diethylene Glycol	111-46-6	30.00000	0.00016	

			Methenamine	100-97-0	20.00000	0.00011	
			Hydrogen Chloride	7647-01-0	10.00000	0.00005	
			Polyethlenepolyamine	68603-67-8	10.00000	0.00005	
			Coco Amine	61791-14-8	5.00000	0.00003	
AP One	USWS	Gel Breaker					
			Ammonium Persulfate	7727-54-0	100.00000	0.00028	
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

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

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

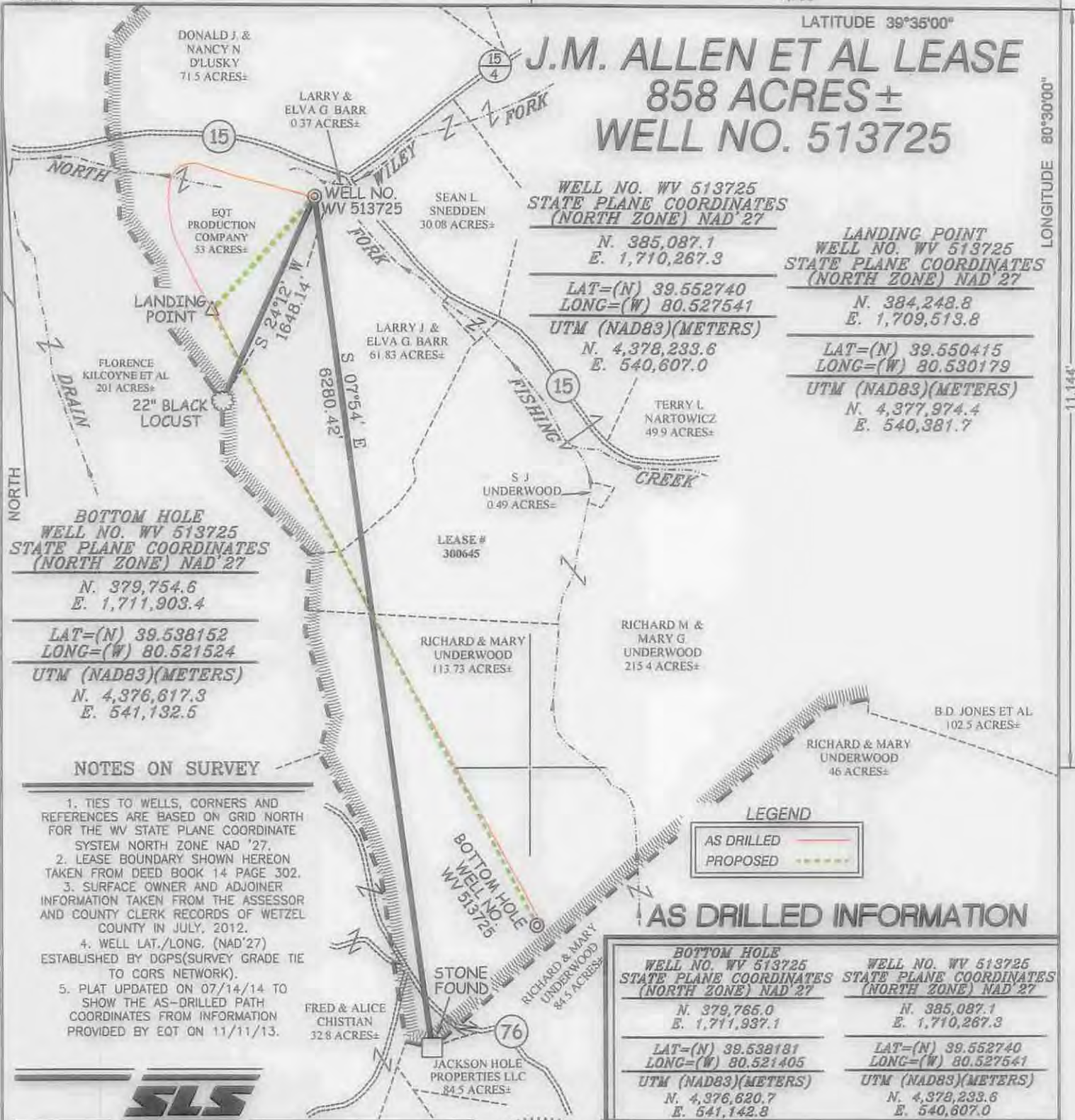
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

103-02901

J.M. ALLEN ET AL LEASE 858 ACRES± WELL NO. 513725

LONGITUDE 80°30'00"

11,144'



**WELL NO. WV 513725
STATE PLANE COORDINATES
(NORTH ZONE) NAD '27**

N. 385,087.1
E. 1,710,267.3

LAT=(N) 39.552740
LONG=(W) 80.527541

UTM (NAD83)(METERS)
N. 4,378,233.6
E. 540,607.0

**LANDING POINT
WELL NO. WV 513725
STATE PLANE COORDINATES
(NORTH ZONE) NAD '27**

N. 384,248.8
E. 1,709,513.8

LAT=(N) 39.550415
LONG=(W) 80.530179

UTM (NAD83)(METERS)
N. 4,377,974.4
E. 540,381.7

**BOTTOM HOLE
WELL NO. WV 513725
STATE PLANE COORDINATES
(NORTH ZONE) NAD '27**

N. 379,754.6
E. 1,711,903.4

LAT=(N) 39.538152
LONG=(W) 80.521524

UTM (NAD83)(METERS)
N. 4,376,617.3
E. 541,132.5

NOTES ON SURVEY

1. TIES TO WELLS, CORNERS AND REFERENCES ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 14 PAGE 302.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF WETZEL COUNTY IN JULY, 2012.
4. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SURVEY GRADE TIE TO CORS NETWORK).
5. PLAT UPDATED ON 07/14/14 TO SHOW THE AS-DRILLED PATH COORDINATES FROM INFORMATION PROVIDED BY EQT ON 11/11/13.

LEGEND

AS DRILLED ———

PROPOSED - - - - -

AS DRILLED INFORMATION

BOTTOM HOLE WELL NO. WV 513725 STATE PLANE COORDINATES (NORTH ZONE) NAD '27	WELL NO. WV 513725 STATE PLANE COORDINATES (NORTH ZONE) NAD '27
N. 379,765.0 E. 1,711,937.1	N. 385,087.1 E. 1,710,267.3
LAT=(N) 39.538181 LONG=(W) 80.521405	LAT=(N) 39.552740 LONG=(W) 80.527541
UTM (NAD83)(METERS) N. 4,376,620.7 E. 541,142.8	UTM (NAD83)(METERS) N. 4,378,233.6 E. 540,607.0



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 APRIL 3 , 20 13

REVISED DATE JULY 14 , 20 14

OPERATORS WELL NO. WV 513725

API WELL NO. 47 - 103 - 02901

STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 6242ASDRILLED513725

PROVEN SOURCE OF ELEVATION 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: ELEVATION 919' (PAD ELEVATION) WATERSHED NORTH FORK FISHING CREEK

DISTRICT GRANT COUNTY WETZEL QUADRANGLE BIG RUN 7.5'

SURFACE OWNER EQT PRODUCTION COMPANY ACREAGE 53±

ROYALTY OWNER J.M. ALLEN ESTATE ET AL LEASE ACREAGE 858± LEASE NO. 300645

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 GENESE0 ESTIMATED DEPTH _____

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT REX C. RAY

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

COUNTY WME PERMIT

10/31/2014