

JR

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

API 47 - 051 - 01685 County Marshall District Sandhill
Quad Valley Grove Pad Name SHL25 Field/Pool Name NA
Farm name David Rutherford Well Number SHL25 EHS
Operator (as registered with the OOG) Noble Energy, Inc.
Address 333 Technology Drive, Suite 116 City Canonsburg State PA Zip 15317

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4427952.32 Easting 538167.73
Landing Point of Curve Northing 4427862.07 Easting 537761.52
Bottom Hole Northing 4429612.01 Easting 536493.53

Elevation (ft) 1344.44 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 Based

Date permit issued 11/18/2013 Date drilling commenced 3/7/2014 Date drilling ceased 5/18/2014
Date completion activities began 9/14/2014 Date completion activities ceased 9/28/2014
Verbal plugging (Y/N) N Date permission granted _____ Granted by _____

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

Freshwater depth(s) ft 213 Open mine(s) (Y/N) depths N
Salt water depth(s) ft None noted for Offsets Void(s) encountered (Y/N) depths N
Coal depth(s) ft 810', 866' Pittsburgh Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) Y, Shoemaker Mine 866'

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Reviewed by: _____

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API 47- 051 - 01685 Farm name David Rutherford Well number SHL25 EHS

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
		PLEASE SEE ATTACHED PERFORATION RECORD			

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)
		PLEASE SEE ATTACHED STIMULATION STAGE ATTACHMENT						

Please insert additional pages as applicable.

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API 47-051 - 01685 Farm name David Rutherford Well number SHL25 EHS

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	40	N			
Surface	24	20	417.9	N	J-55 94#		Y
Coal							
Intermediate 1	17 1/2	13 3/8	1265.20	N	J-55 54.5#		Y
Intermediate 2	12 1/4	9 5/8	3265.20	N	K-55 36#		Y
Intermediate 3							
Production	8 3/4	5 1/2	14545.69	N	P-110 20#		Y
Tubing							
Packer type and depth set							

Comment Details Surface Casing 4 centralizer and 2 baskets, Intermediate 1 11 Centralizers, Intermediate 2 42 Centralizers, Production 228 Centek Rigid

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							
Surface	Type I	487	15.60	1.19	106.0	0	8
Coal							
Intermediate 1	Class A	1033	12.00	1.16	50.0	0	8
Intermediate 2	Class A	1170	12.50	1.09	227.0	0	8
Intermediate 3							
Production	Class A	2302	14.80	1.25	562.0	3000	8
Tubing							

Drillers TD (ft) 14,580 Loggers TD (ft) 14,555

Deepest formation penetrated Marcellus Plug back to (ft) Not a Pilot Hole

Plug back procedure Not a Pilot Hole

Kick off depth (ft) 6310

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 _____

4 Centralizers on Surface (1 every 3rd joint) and 2 baskets 11 Centralizers on Intermediate 1 (1 every 3rd joint) 42 Centralizers on Intermediate 2 (1 every 3rd joint)
228 Centralizers on Production (1 every 3rd to Curve, then 1 every joint to TD)

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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Perforation Record

API: 47-051-01685

Farm name: _____

David & Joy
Rutherford ET AL

Well Name: SHL-25E-HS

Stage No.	Stim Date	Top Perf	Bottom Perf	# of Perfs	Formation
Toe Sleeve	8/13/2014	14442	14446		
Toe Prep Inj Test	9/14/2014			-	Marcellus
1	9/14/2014	14291	14418	50	Marcellus
2	9/15/2014	14139	14266	50	Marcellus
3	9/15/2014	13987	14114	50	Marcellus
4	9/15/2014	13835	13962	50	Marcellus
5	9/15/2014	13683	13810	50	Marcellus
6	9/16/2014	13531	13658	50	Marcellus
7	9/16/2014	13379	13506	50	Marcellus
8	9/16/2014	13227	13352	50	Marcellus
9	9/16/2014	13075	13202	50	Marcellus
10	9/16/2014	12923	13050	50	Marcellus
11	9/17/2014	12771	12898	50	Marcellus
12	9/17/2014	12619	12746	50	Marcellus
13	9/17/2014	12467	12594	50	Marcellus
14	9/17/2014	12315	12442	50	Marcellus
15	9/17/2014	12163	12290	50	Marcellus
15B (Reperf)	9/18/2014	12158	12198	48	Marcellus
16	9/18/2014	12011	12136	50	Marcellus
17	9/18/2014	11859	11986	50	Marcellus
18	9/18/2014	11707	11831	50	Marcellus
19	9/18/2014	11555	11682	50	Marcellus
20	9/19/2014	11403	11530	50	Marcellus
21	9/19/2014	11251	11376	50	Marcellus
21B (Reperf)	9/19/2014	11257	11329	48	Marcellus
21C (Commingled)	9/19/2014	11099	11226	50	Marcellus
22	9/19/2014	10947	11075	50	Marcellus
23	9/20/2014	10795	10922	50	Marcellus
24	9/20/2014	10643	10768	50	Marcellus
25	9/20/2014	10491	10613	50	Marcellus
26	9/20/2014	10339	10466	50	Marcellus
27	9/20/2014	10187	10314	50	Marcellus
28	9/21/2014	10035	10162	50	Marcellus
29	9/21/2014	9883	10010	50	Marcellus
30	9/21/2014	9731	9856	50	Marcellus
31	9/21/2014	9579	9701	50	Marcellus
32	9/21/2014	9427	9554	50	Marcellus
33	9/22/2014	9275	9402	50	Marcellus
34	9/22/2014	9123	9250	50	Marcellus
35	9/22/2014	8971	9096	50	Marcellus
36	9/22/2014	8819	8944	50	Marcellus

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Perforation Record

API: 47-051-01685

Farm name: David & Joy
Rutherford ET AL

Well Name: SHL-25E-HS

Stage No.	Stim Date	Top Perf	Bottom Perf	# of Perfs	Formation
37	9/22/2014	8667	8794	50	Marcellus
38	9/22/2014	8515	8642	50	Marcellus
39	9/23/2014	8363	8490	50	Marcellus
40	9/23/2014	8211	8338	50	Marcellus
41	9/23/2014	8059	8186	50	Marcellus
42	9/23/2014	7907	8034	50	Marcellus
43	9/23/2014	7755	7882	50	Marcellus
44	9/23/2014	7603	7730	50	Marcellus
45	9/24/2014	7451	7578	50	Marcellus
46	9/24/2014	7299	7426	50	Marcellus
47	9/24/2014	7147	7274	50	Marcellus

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DEC 15 2014

01/16/2015

STIMULATION INFORMATION PER STAGE

API: 47-051-01685

Farm name:

David & Joy Rutherford ET

AL

Well Name: SHL-25E-HS

Stage No.	Stim Date	Avg Rate (bpm)	ATP (psi)	Max BD Pressure	ISIP (psi)	Proppant (lbs)	Water (BBLs)	Amount of N ² / other (units)
Toe Prep Inj Test	9/14/2014	15.5	7,265	-	3,982	-	471.62	
1	9/14/2014	86.7	7,453	4,662	3,118	300,880	10,155.85	
2	9/15/2014	84.4	7,851	6,085	3,843	302,625	7,921.20	
3	9/15/2014	86.2	7,575	5,826	4,338	301,752	7,644.72	
4	9/15/2014	87.4	7,641	5,798	3,982	299,873	7,578.48	
5	9/15/2014	81.4	7,793	5,604	4,299	302,071	7,994.97	
6	9/16/2014	83.7	7,701	5,920	4,284	301,669	7,890.58	
7	9/16/2014	85.9	7,582	5,621	4,590	300,876	7,611.70	
8	9/16/2014	84.5	7,632	5,569	4,087	301,822	7,528.81	
9	9/16/2014	87.8	7,602	5,259	4,352	299,759	7,682.86	
10	9/16/2014	85.4	7,530	5,373	4,422	301,671	7,771.43	
11	9/17/2014	83.6	7,480	5,054	4,848	301,617	7,862.87	
12	9/17/2014	87.8	7,370	5,119	4,200	300,878	7,378.10	
13	9/17/2014	88	7,561	5,361	4,488	299,561	7,486.33	
14	9/17/2014	87	7,600	5,735	4,498	301,099	7,302.02	
15	9/17/2014	33.9	7,866	5,533	6,971	5,350	3,712.24	
15B (Reperf)	9/18/2014	67.7	8,024	7,411	4,223	299,072	14,157.37	
16	9/18/2014	77.6	7,505	6,048	4,302	301,780	8,036.36	
17	9/18/2014	83.2	7,496	5,759	4,544	301,878	7,326.52	
18	9/18/2014	83.7	7,425	5,605	4,479	300,030	7,443.00	
19	9/18/2014	85.8	7,419	5,457	4,269	300,002	7,508.35	
20	9/19/2014	83.8	7,371	5,382	4,479	301,751	7,392.83	
21	9/19/2014	35.8	8,402	5,775	6,749	5,490	3,420.31	
21B (Reperf)	9/19/2014	49.2	8,737	7,072	6,698	9,409	5,156.75	
21C (Commingled)	9/19/2014	85.9	7,101	5,473	4,375	601,046	12,684.52	
22	9/19/2014	83.2	7,245	6,088	4,694	302,047	7,241.23	
23	9/20/2014	85.3	7,208	5,740	4,180	298,658	8,654.70	
24	9/20/2014	85.8	7,154	5,293	4,518	307,479	7,213.90	
25	9/20/2014	80.9	6,985	5,721	4,259	302,603	9,849.05	
26	9/20/2014	85.7	7,041	5,667	4,663	298,115	7,223.61	
27	9/20/2014	86.1	7,149	5,742	4,348	302,285	7,367.19	
28	9/21/2014	85.7	6,858	5,489	4,423	300,651	7,327.59	
29	9/21/2014	81.5	7,068	5,596	4,164	301,586	8,055.00	
30	9/21/2014	85.6	6,809	5,712	4,553	299,430	7,150.86	
31	9/21/2014	85.2	6,862	6,081	4,570	301,298	6,993.97	
32	9/21/2014	86.4	6,838	5,969	4,449	301,422	7,243.74	
33	9/22/2014	85.3	6,730	5,964	4,483	299,632	7,222.33	
34	9/22/2014	85.2	6,801	6,026	4,310	303,455	7,199.75	
35	9/22/2014	84.1	6,814	6,364	4,270	305,106	7,086.52	
36	9/22/2014	84.8	6,686	6,599	4,294	301,948	7,075.70	
37	9/22/2014	84.8	6,758	6,109	4,579	303,592	7,095.86	

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DEC 15 2014

01/16/2015

STIMULATION INFORMATION PER STAGE

API: 47-051-01685

Farm name:

David & Joy Rutherford ET

AL

Well Name: SHL-25E-HS

Stage No.	Stim Date	Avg Rate (bpm)	ATP (psi)	Max BD Pressure	ISIP (psi)	Proppant (lbs)	Water (BBLs)	Amount of N ² / other (units)
38	9/22/2014	87.2	6,743	5,748	4,398	304,106	7,136.76	
39	9/23/2014	89.5	6,778	6,184	4,742	302,217	7,057.54	
40	9/23/2014	85.7	6,612	5,872	4,472	301,723	6,955.14	
41	9/23/2014	86	6,719	6,242	4,552	303,686	6,934.11	
42	9/23/2014	85.6	6,538	5,866	4,508	300,288	6,927.05	
43	9/23/2014	87.6	6,568	5,801	4,469	300,408	7,044.06	
44	9/23/2014	87.6	6,525	6,113	4,398	301,425	7,116.85	
45	9/24/2014	87.2	6,663	6,673	4,552	296,483	6,954.44	
46	9/24/2014	85.8	6,577	6,526	4,527	299,932	6,857.58	
47	9/24/2014	83	6,984	7,284	4,137	349,534	10,257.13	

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DEC 15 2014

01/16/2015

API 47- 051 - 01685 Farm name David Rutherford Well number SHL25 DHS

PRODUCING FORMATION(S) DEPTHS
Marcellus 6,667 TVD 14,580 MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

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

OPEN FLOW Gas Oil NGL Water GAS MEASURED BY
 6683 mcfpd 53 bpd 534 bpd 773 bpd 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	

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	0		0		
	PLEASE SEE ATTACHED FORMATION SHEET				
					Received Office of Oil & Gas DEC 15 2014

Please insert additional pages as applicable.

Drilling Contractor Nomac Drilling Company
Address 171 Locust Avenue Ext. City Mt. Morris State PA Zip 15349

Logging Company _____
Address _____ City _____ State _____ Zip _____

Cementing Company Schlumberger
Address 4600 J Barry Court, Suite 200 City Canonsburg State PA Zip 15317

Stimulating Company Halliburton Energy SRCS
Address 121 Champion Way, Suite 110 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Regina A. Logue Telephone 724-820-3559
Signature *Regina A. Logue* Title Regulatory Analyst Date 12/10/14

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

SHL25 EHS
47-051-01685

Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale	0	812	0	812	
Pittsburgh Coal	812	822	812	822	
Shale and Sandstone	822	1420	822	1420	
Gas Sand	1420	1473	1420	1473	
Shale	1473	1517	1473	1517	
1st Salt Sand	1517	1595	1517	1595	
2nd Salt Sand	1595	1606	1595	2944	
3rd Salt Sand	1606	1665	1606	2977	
Shale	1665	1700	1665	3364	
Maxton Sand	1700	1838	1700	3388	
Shale	1838	1860	1838	4281	
Big Lime	1860	1946	1860	4295	
Big Injun	1946	2126	1946	5211	
Price	2126	2465	2126	5282	
Murrysville	2465	2488	2465	5326	
Shale and Sandstone	2488	2715	2488	5959	
50' Sand	2715	2728	2715	3388	
Shale	2728	2814	2728	4281	
Gordon Stray	2814	2821	2814	4295	
Shale	2821	2836	2821	5211	
Gordon	2836	2854	2836	5282	
Shale	2854	2944	2854	5326	
Fifth Sand	2944	2977	2944	2977	
Shale	2977	3363	2977	3364	
Speechley Sand	3363	3387	3364	3388	
Shale	3387	4271	3388	4281	
Warren Sand	4271	4285	4281	4295	
Shale	4285	5192	4295	5211	
Java Shale	5192	5262	5211	5282	
Pipe Creek Shale	5262	5306	5282	5326	
Angola Shale	5306	5932	5326	5959	
Rhinestreet	5932	6346	5959	6404	
Cashaqua	6346	6438	6404	6533	
Middlesex	6438	6475	6533	6597	
West River	6475	6516	6597	6684	
Burkett	6516	6549	6684	6774	Gas
Tully Limestone	6549	6577	6774	not encountered	
Hamilton	6577	6691	not encountered	not encountered	
Marcellus	6691		not encountered	not encountered	

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01/16/2015

Hydraulic Fracturing Fluid Product Component Information Disclosure

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DEC 15 2014



51-01685

Job Start Date:	9/14/2014
Job End Date:	9/24/2014
State:	West Virginia
County:	Marshall
API Number:	47-051-01685-00-00
Operator Name:	Noble Energy, Inc.
Well Name and Number:	SHL 25 E
Longitude:	-80.55306100
Latitude:	40.00821000
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,667
Total Base Water Volume (gal):	15,975,181
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
Fresh Water	Operator	Base Fluid					
			Fresh Water	7732-18-5	100.00000	89.43721	Density = 8.550
PREMIUM WHITE 40/70	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	7.61177	
Premium White 100 Mesh	Halliburton	Proppant					
			Crystalline silica, quartz	14808-60-7	100.00000	1.91221	
HYDROCHLORIC ACID 5-10%	Halliburton	Solvent					
			Hydrochloric acid	7647-01-0	10.00000	0.08823	
FR-66	Halliburton	Friction Reducer					
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01966	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive					
			Acetic anhydride	108-24-7	100.00000	0.00475	
			Acetic acid	64-19-7	60.00000	0.00285	
HYDROCHLORIC ACID 10-30%	Halliburton	Solvent					
			Hydrochloric acid	7647-01-0	30.00000	0.00527	
BE-9	Halliburton	Biocide					

			Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00387	
LGC-36 UC	Halliburton	Liquid Gel Concentrate					
			Guar gum	9000-30-0	60.00000	0.00135	
			Naphtha, hydrotreated heavy	64742-48-9	60.00000	0.00135	
LP-65	Halliburton	Scale Inhibitor					
			Ammonium chloride	12125-02-9	10.00000	0.00233	
LCA-1	Halliburton	Solvent					
			Paraffinic solvent	Confidential	100.00000	0.00205	Denise Tuck, Halliburton 3000 N. Sam Houston Pkwy E., Houston, TX 77032 281-871-6226
LoSurf-300D	Halliburton	Non-ionic Surfactant					
			Ethanol	64-17-5	60.00000	0.00096	
			Heavy aromatic petroleum naphtha	64742-94-5	30.00000	0.00048	
			Naphthalene	91-20-3	5.00000	0.00008	
			Poly(oxy-1,2-ethanediyl), alpha-(4-nonylphenyl)-omega-hydroxy-, branched	127087-87-0	5.00000	0.00008	
			1,2,4 Trimethylbenzene	95-63-6	1.00000	0.00002	
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
			Methanol	67-56-1	60.00000	0.00047	
			Propargyl alcohol	107-19-7	10.00000	0.00008	
SP BREAKER	Halliburton	Breaker					
			Sodium persulfate	7775-27-1	100.00000	0.00004	
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.							
		Other Ingredient(s)					
			Water	7732-18-5		0.99180	
		Other Ingredient(s)					
			Polyacrylamide copolymer	Confidential		0.01966	
		Other Ingredient(s)					
			Organic phosphonate	Confidential		0.01398	
		Other Ingredient(s)					
			Fatty acid tall oil amide	Confidential		0.00328	
		Other Ingredient(s)					
			Alcohols, C12-16, ethoxylated	68551-12-2		0.00328	
		Other Ingredient(s)					
			Sodium chloride	7647-14-5		0.00328	
		Other Ingredient(s)					
			Ammonium chloride	12125-02-9		0.00328	
		Other Ingredient(s)					
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8		0.00066	
Receiver		Other Ingredient(s)					

51.01685

		Sorbitan monooleate polyoxyethylene derivative	9005-65-6		0.00066
	Other Ingredient(s)				
		Oxyalkylated phenolic resin	Confidential		0.00048
	Other Ingredient(s)				
		Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1		0.00024
	Other Ingredient(s)				
		Alcohols, C14-C15, ethoxylated	68951-67-7		0.00024
	Other Ingredient(s)				
		Fatty acids, tall oil	Confidential		0.00024
	Other Ingredient(s)				
		Formaldehyde	50-00-0		0.00023
	Other Ingredient(s)				
		Oxyalkylated phenolic resin	Confidential		0.00016
	Other Ingredient(s)				
		Quaternary ammonium compounds, bis(hydrogenated tallow alkyl) dimethyl, salts with bentonite	68953-58-2		0.00011
	Other Ingredient(s)				
		Olefins	Confidential		0.00004
	Other Ingredient(s)				
		Olefins	Confidential		0.00004
	Other Ingredient(s)				
		Fatty alcohol polyglycol ether surfactant	9043-30-5		0.00002
	Other Ingredient(s)				
		Olefins	Confidential		0.00001
	Other Ingredient(s)				
		Olefins	Confidential		0.00001
	Other Ingredient(s)				
		Crystalline silica, quartz	14808-60-7		0.00000
	Other Ingredient(s)				
		Sodium sulfate	7757-82-6		0.00000

51-01685

* 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.

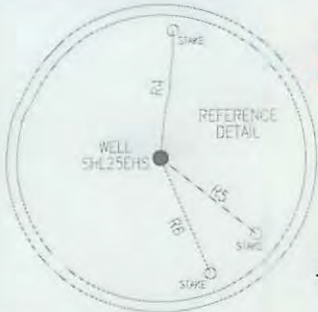
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

Received
Office of Oil & Gas

DEC 15 2014

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AS DRILLED PLAT



LINE	BEARING	DISTANCE
R1	N 81°37'52" E	2122.50'
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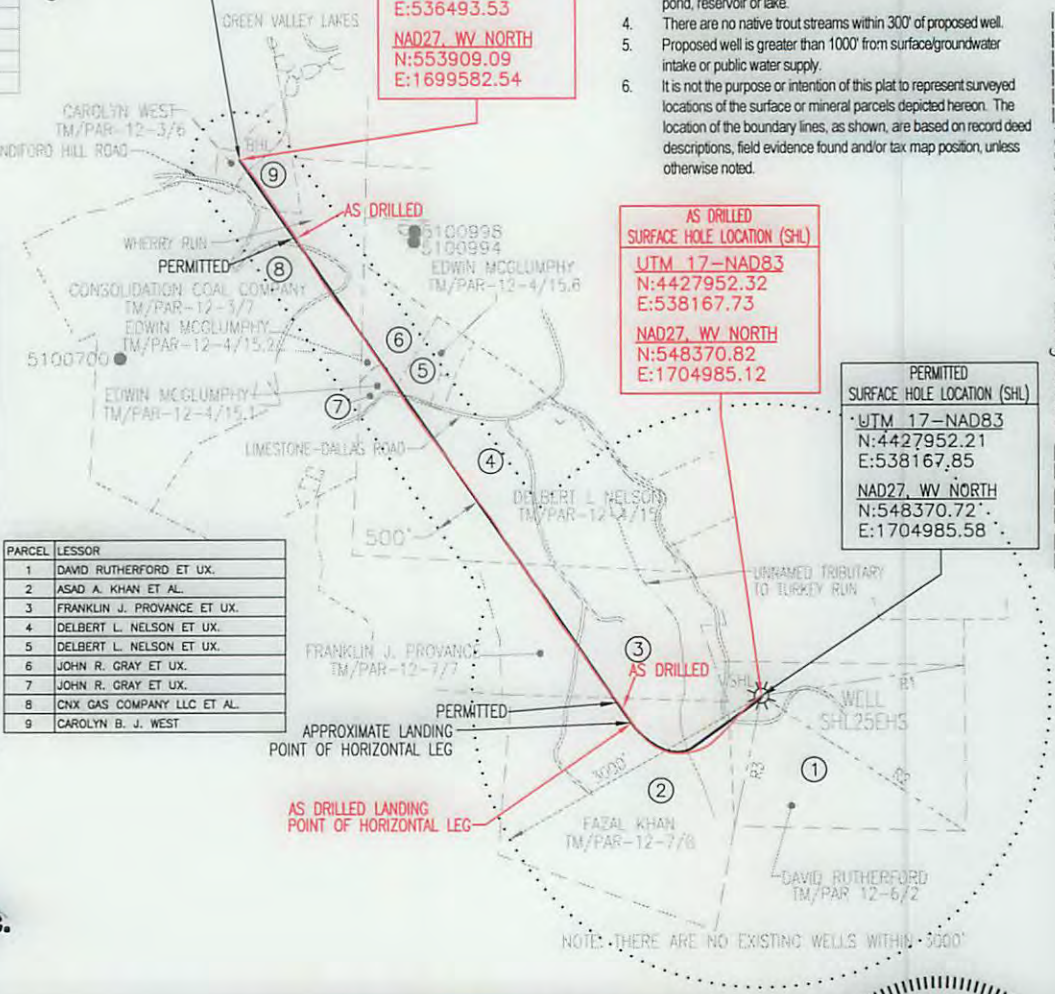
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- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
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9	CAROLYN B. J. WEST



Blue Mountain Inc.
 10125 MASON DIXON HIGHWAY
 BURTON, WV 26562
 PHONE: (304) 662-6486

Well is located on topo map 3,167' feet west of Longitude: 80° 32' 30"

FILE #: SHL25EHS-AS DRILLED
 DRAWING #: SHL25EHS-AS DRILLED
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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.

Signed: *[Signature]*
 R.P.E.: _____ L.L.S.: P.S. No. 2000

GEORGE D. SIX
 LICENSED
 No. 2000
 STATE OF
 WEST VIRGINIA
 PROFESSIONAL SURVEYOR

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304



DATE: DECEMBER 8, 2014
 OPERATOR'S WELL #: SHL25EHS-AS DRILLED
 API WELL #: 47 51 01685
 STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: WHEELING CREEK ELEVATION: 1344.44'

COUNTY/DISTRICT: MARSHALL / SAND HILL QUADRANGLE: VALLEY GROVE, WV 7.5'

SURFACE OWNER: DAVID RUTHERFORD ACREAGE: 95.912±

OIL & GAS ROYALTY OWNER: DAVID RUTHERFORD ET UX. ACREAGE: 600.056±

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,823'± TMD: 14,652'±

WELL OPERATOR NOBLE ENERGY, INC. DESIGNATED AGENT STEVEN M. GREEN
 Address 333 TECHNOLOGY DRIVE, SUITE 116 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590
 City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

01/16/2015

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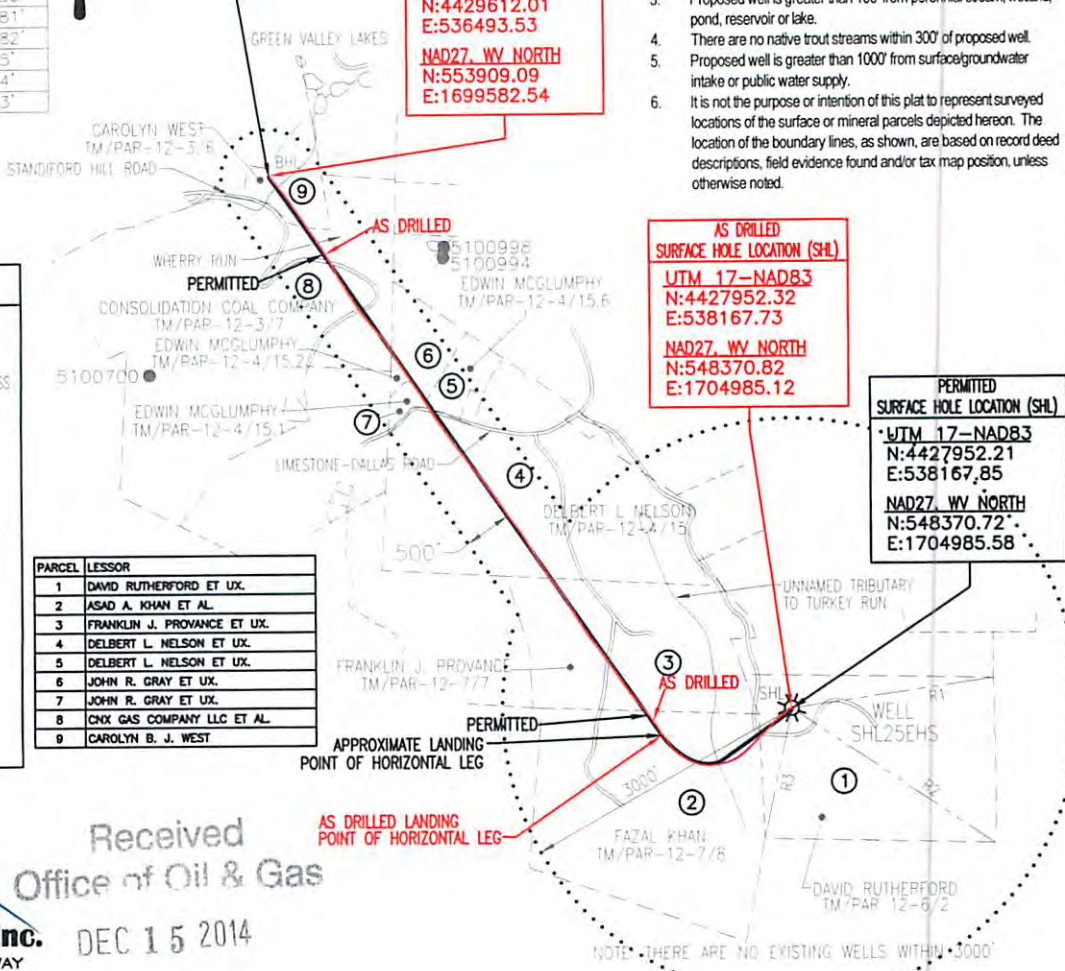
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