WR-35
Rev (9-11)

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

Date: 11/4/2013
API: 47-051-01363

Farm Name: Riggle, Patrick Shane_____ Operator Well No: SHL-3E-HS

LOCATION: Sand Hill Elevation: 1,289.18' Quadrangle: Majorsville

District: SAND HILL County: MARSHALL
Latitude: _____ Feet South of _____Deg._____Min._____Sec. 39.97114300
Longitude: _____ Feet South of _____Deg._____Min._____Sec. -80.55694900

Company: CNX Gas Company LLC	Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. Ft.
Address: 200 Evergreene Drive Waynesburg, PA 15370	20	48	48	Grouted In
Agent: Ryan Morgan	13 3/8	995	995	587 sxs to surface
Inspector: Bill Hendershot	9 5/8	3129	3129	Cemented to surface 1034 sxs – 37 bbls return
Date Permit Issued: 11/1/2010	5 ½	12496.4	12496.4	2145 sxs (497 bbls) Class A
Date Well Work Commenced: 6/11/2011				
Date Well Work Completed: 6/24/2012				
Verbal Plugging:				
Date Permission granted on: 6/11/2011				
Rotary Cable Rig X				
Total Vertical Depth (ft): Original Hole – 6589.87'				
Total Measured Depth (ft): 12,511'				
Fresh Water Depth (ft): N/A				
Salt Water Depth (ft):N/A				
Is coal being mined in the area (N/Y)? Y				
Coal Depths (ft.): 660'-665'				
Void(s) encountered (N/Y) Depth(s) N/A				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus_____ Pay zone depth (ft) 6612'____
Gas: Initial open flow 5821___MCF/d Oil: Initial open flow 26_____ Bbl/d
Final open flow 0_____ MCF/d Final open flow 0 _____Bbl/d
Time of open flow between initial and final tests 24 _____ Hours
Static rock Pressure 2700___ psig (surface pressure) after __ 24____Hours

Second producing formation _____ Pay zone depth (ft)_____
Gas: Initial open flow _____MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow_____Bbl/d
Time of open flow between initial and final tests_____ Hours
Static rock Pressure _____ psig (surface pressure) after _____Hours

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

1-27-14

Signature Date

Laura L. Adkins, Noble Energy Inc. 1/21/14 04/04/2014

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Were core samples taken? Yes__ No_x__ Were cuttings caught during drilling? Yes_x_ No___

Were Electrical, Mechanical or Geophyisical logs recorded on this well? If yes, please list: MWD Gamma Ray _____

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing or Stimulating: Please See Attached

Plug Back Details including Plug Type and Depth(s): Please See Attached

Surface:

Formations Encountered: Please See Attached

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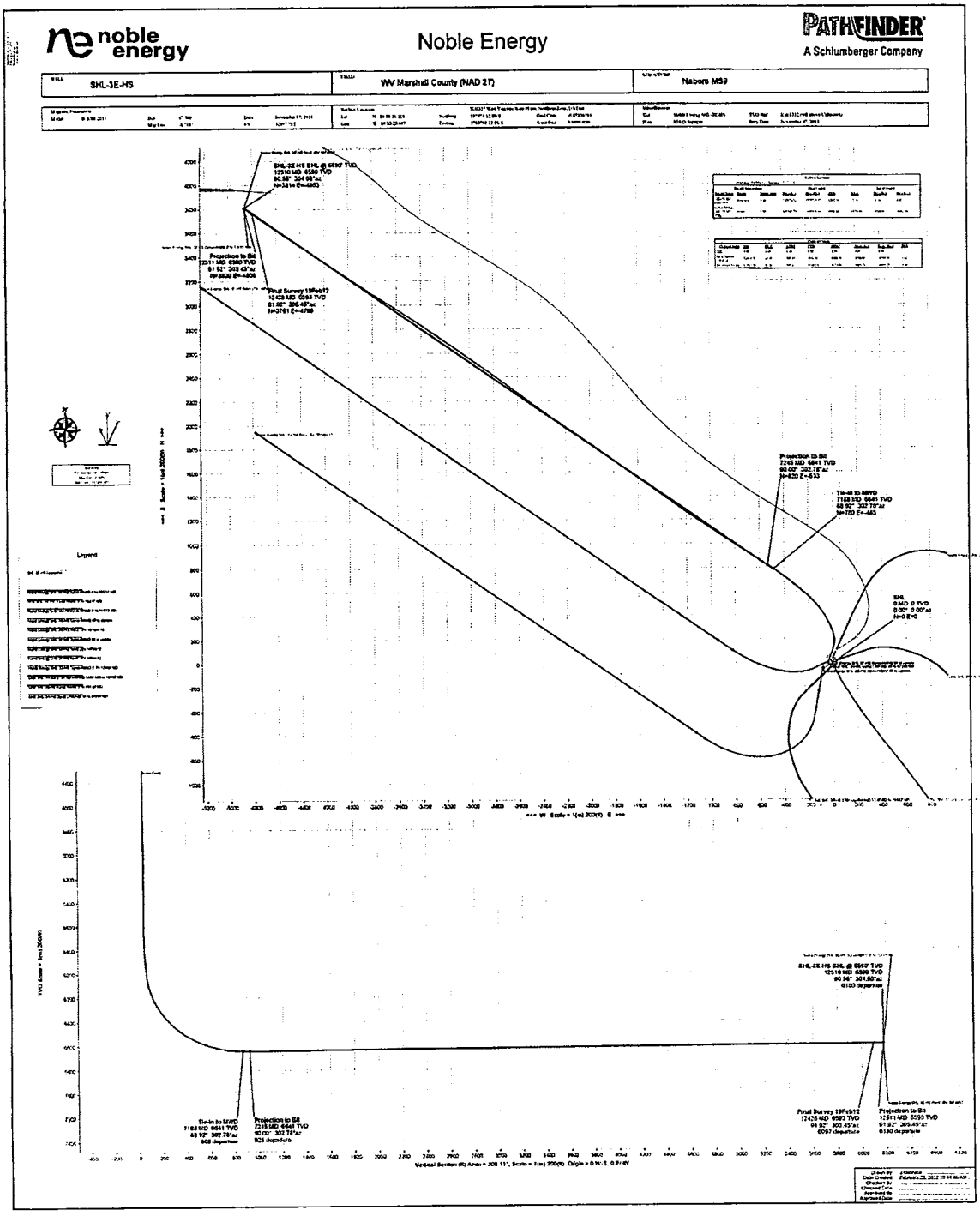
noble energy
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PATHFINDER
A Schlumberger Company
SHL-3E-HS
WV Marshall County (NAD 27)
Nabors M59

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SHL 3E
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Stage #	Plug Type	Plug Depth
1	No Plug	No Plug
2	Composite Frac Plug	12,173
3	Composite Frac Plug	11,873
4	Composite Frac Plug	11,573
5	Composite Frac Plug	11,273
6	Composite Frac Plug	10,973
7	Composite Frac Plug	10,673
8	Composite Frac Plug	10,373
9	Composite Frac Plug	10,073
10	Composite Frac Plug	9,773
11	Composite Frac Plug	9,473
12	Composite Frac Plug	9,173
13	Composite Frac Plug	8,873
14	Composite Frac Plug	8,573
15	Composite Frac Plug	8,273
16	Composite Frac Plug	7,973
17	Composite Frac Plug	7,673
18	Composite Frac Plug	7,373
19	Composite Frac Plug	7,073

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Stimulation Summary

Date	Stage #	Formation	Frac Type	Top Perf	Bottom Perf	# of Perfs	BD Press (psi)	ATP (psi)	Avg Rate (bpm)	ISIP (psi)	Frac Gradient	Sand (lbs)	Acid (gals)	Water (gals)
6/11/2012	1	Marcellus	Slickwater	12,197	12,379	45	4,970	7,523	67.3	4,282	1.08	342,395	2,000	310,842
6/16/2012	2	Marcellus	Slickwater	11,897	12,149	40	5,490	7,970	75.2	4,330	1.09	346,907	2,000	347,340
6/16/2012	3	Marcellus	Slickwater	11,597	11,849	40	5,408	7,861	82.0	4,167	1.06	355,963	2,000	340,452
6/16/2012	4	Marcellus	Slickwater	11,297	11,549	40	5,397	7,684	82.2	4,322	1.09	350,097	2,000	336,378
6/16/2012	5	Marcellus	Slickwater	10,997	11,249	40	5,269	7,696	70.0	4,500	1.11	350,034	2,000	359,142
6/17/2012	6	Marcellus	Slickwater	10,697	10,949	40	5,331	8,159	64.3	4,224	1.08	338,039	2,000	321,006
6/17/2012	7	Marcellus	Slickwater	10,397	10,649	40	5,369	7,883	70.2	4,110	1.06	360,198	2,000	329,112
6/17/2012	8	Marcellus	Slickwater	10,097	10,349	40	5,561	7,420	76.2	4,046	1.04	350,603	2,000	337,554
6/18/2012	9	Marcellus	Slickwater	9,797	10,049	40	5,520	7,162	74.1	4,200	1.07	345,063	2,000	317,814
6/20/2012	10	Marcellus	Slickwater	9,497	9,749	40	5,053	7,617	80.8	3,614	0.98	350,725	2,000	327,180
6/20/2012	11	Marcellus	Slickwater	9,197	9,449	40	5,529	7,347	83.2	3,892	1.02	350,777	2,000	327,012
6/21/2012	12	Marcellus	Slickwater	8,897	9,149	40	5,438	7,517	74.0	4,190	1.07	353,745	2,000	324,282
6/21/2012	13	Marcellus	Slickwater	8,597	8,849	40	5,652	7,300	86.8	4,026	1.04	350,794	2,000	331,296
6/22/2012	14	Marcellus	Slickwater	8,297	8,549	40	6,014	7,345	85.5	4,041	1.04	350,936	2,000	330,120
6/22/2012	15	Marcellus	Slickwater	7,997	8,249	40	6,577	7,244	78.7	4,173	1.06	345,967	2,000	338,394
6/23/2012	16	Marcellus	Slickwater	7,697	7,949	40	7,082	7,130	83.8	4,282	1.08	350,953	2,000	326,760
6/23/2012	17	Marcellus	Slickwater	7,397	7,649	40	5,389	7,246	73.8	3,823	1.01	351,110	2,000	324,534
6/24/2012	18	Marcellus	Slickwater	7,097	7,349	40	5,840	7,536	75.3	4,049	1.04	351,089	2,000	322,308
6/24/2012	19	Marcellus	Slickwater	6,897	7,049	36	6,763	7,184	85.6	4,189	1.07	360,014	2,000	326,802

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Formations	Top TVD	Base TVD	Top MD	Base MD	Fluid
Shale	0	660	0	660	
Pittsburgh Coal	660	665	660	665	
Shale and Sandstone	665	1222	665	1222	
Dunkard Sand	1222	1233	1222	1233	
Shale	1233	1404	1233	1404	
Gas Sand	1404	1443	1404	2397	
Shale	1443	1535	1443	2594	
1st Salt Sand	1535	1559	1535	2596	
Shale	1559	1568	1559	2649	
2nd Salt Sand	1568	1613	1568	2658	
Shale	1613	1696	1613	2700	
Maxton Sand	1696	1708	1696	2715	
Shale	1708	1751	1708	2751	
Big Lime	1751	1831	1751	2764	
Big Injun	1831	2025	1831	2860	
Price	2025	2383	2025	3300	
Murrysville	2383	2397	2383	3328	
Shale	2397	2594	2397	4337	
50' Sand	2594	2596	2594	2596	
Shale	2596	2649	2596	2649	
30' Sand	2649	2658	2649	2658	
Shale	2658	2700	2658	2700	
Gordon Stray	2700	2715	2700	2715	
Shale	2715	2751	2715	2751	
Gordon	2751	2764	2751	2764	
Shale	2764	2860	2764	2860	
Fifth Sand	2860	2894	2860	2894	
Shale	2894	3300	2894	3300	
Speechley Sand	3300	3328	3300	3328	
Shale	3328	4336	3328	4337	
Warren Sand	4336	4345	4337	4346	
Shale	4345	5003	4346	5004	
Java Shale	5003	5174	5004	5175	
Pipe Creek Shale	5174	5231	5175	5232	
Angola Shale	5231	5856	5232	5859	
Rhinestreet	5856	6272	5859	6330	
Cashaqua	6272	6363	6330	6450	
Middlesex	6363	6398	6450	6499	
West River	6398	6450	6499	6578	
Burkett	6450	6473	6578	6616	
Tully Limestone	6473	6503	6616	6670	
Hamilton	6503	6614	6670	6957	
Marcellus	6614	6664	6957	not encountered	Gas
Onondaga	6664	not encountered	not encountered	not encountered	

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Schlumberger

noble energy

Noble Energy SHL-3E-HS Gyros+MWD 0ft to Update Survey Report

(Non-Def Survey)

Report Date:	February 18, 2012 - 07:31 PM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	Noble Energy	Vertical Section Azimuth:	308.107 ° (Grid North)
Field:	WV Marshall County (NAD 27)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	CNX/Noble Energy SHL-3 Pad / Noble Energy SHL-3E-HS	TVD Reference Datum:	KB
Well:	SHL-3E-HS	TVD Reference Elevation:	1312.090 ft above Unknown
Borehole:	Original Borehole	Seabed / Ground Elevation:	1289.180 ft above Unknown
UWI / API#:	Unknown / Unknown	Magnetic Declination:	-8.748 °
Survey Name:	Noble Energy SHL-3E-HS Gyros+MWD 0ft to Update	Total Field Strength:	52897.715 nT
Survey Date:	November 07, 2011	Magnetic Dip Angle:	67.569 °
Tort / AHD / DDI / ERD Ratio:	159.942 ° / 6353.745 ft / 6.282 / 0.957	Declination Date:	November 07, 2011
Coordinate Reference System:	NAD27 West Virginia State Plane, Northern Zone, US Feet	Magnetic Declination Model:	BGGM 2011
Location Lat / Long:	N 39° 58' 16.11756", W 80° 33' 25.00749"	North Reference:	Grid North
Location Grid N/E Y/X:	N 537574.115 ftUS, E 1703769.317 ftUS	Grid Convergence Used:	-0.674 °
CRS Grid Convergence Angle:	-0.67409194 °	Total Corr Mag North->Grid North:	-8.074 °
Grid Scale Factor:	0.99995885	Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	0.00	0.00	-1312.09	0.00	0.00	0.00	N/A	537574.12	1703769.32	N 39 58 16.12	W 80 33 25.01
	123.00	0.41	174.87	123.00	-1189.09	-0.30	-0.44	0.04	0.33	537573.68	1703769.36	N 39 58 16.11	W 80 33 25.01
	223.00	0.58	192.21	223.00	-1089.09	-0.77	-1.29	-0.04	0.22	537572.83	1703769.28	N 39 58 16.10	W 80 33 25.01
	323.00	0.33	152.06	322.99	-989.10	-1.25	-2.04	-0.01	0.39	537572.08	1703769.31	N 39 58 16.10	W 80 33 25.01
	423.00	0.32	144.18	422.99	-889.10	-1.78	-2.52	0.29	0.05	537571.60	1703769.61	N 39 58 16.09	W 80 33 25.00
	523.00	0.30	142.76	522.99	-789.10	-2.30	-2.95	0.61	0.02	537571.16	1703769.93	N 39 58 16.09	W 80 33 25.00
	623.00	0.30	205.38	622.99	-689.10	-2.62	-3.40	0.66	0.31	537570.72	1703769.98	N 39 58 16.08	W 80 33 25.00
	723.00	0.22	174.20	722.99	-589.10	-2.81	-3.83	0.57	0.16	537570.29	1703769.88	N 39 58 16.08	W 80 33 25.00
	823.00	0.28	164.47	822.99	-489.10	-3.14	-4.25	0.65	0.07	537569.86	1703769.97	N 39 58 16.08	W 80 33 25.00
	923.00	0.13	332.36	922.99	-389.10	-3.23	-4.39	0.66	0.41	537569.73	1703769.98	N 39 58 16.07	W 80 33 25.00
	1023.00	0.22	111.85	1022.99	-289.10	-3.31	-4.36	0.79	0.33	537569.76	1703770.11	N 39 58 16.07	W 80 33 25.00
	1123.00	0.28	178.96	1122.98	-189.11	-3.65	-4.67	0.97	0.28	537569.44	1703770.29	N 39 58 16.07	W 80 33 24.99
	1223.00	0.37	283.50	1222.98	-89.11	-3.51	-4.84	0.66	0.52	537569.27	1703769.98	N 39 58 16.07	W 80 33 25.00
	1323.00	0.57	250.52	1322.98	10.89	-2.95	-4.93	-0.12	0.33	537569.18	1703769.20	N 39 58 16.07	W 80 33 25.01
	1423.00	0.74	269.85	1422.97	110.88	-2.18	-5.10	-1.24	0.28	537569.01	1703768.09	N 39 58 16.07	W 80 33 25.02
	1523.00	0.87	301.23	1522.96	210.87	-0.92	-4.71	-2.53	0.45	537569.41	1703766.79	N 39 58 16.07	W 80 33 25.04
	1623.00	0.72	301.02	1622.96	310.87	0.46	-3.99	-3.72	0.15	537570.12	1703765.60	N 39 58 16.08	W 80 33 25.05
	1723.00	0.39	279.04	1722.95	410.86	1.38	-3.62	-4.59	0.39	537570.49	1703764.72	N 39 58 16.08	W 80 33 25.07
	1823.00	0.13	244.41	1822.95	510.86	1.72	-3.62	-5.03	0.29	537570.49	1703764.28	N 39 58 16.08	W 80 33 25.07
	1923.00	0.19	189.57	1922.95	610.86	1.70	-3.83	-5.16	0.16	537570.28	1703764.15	N 39 58 16.08	W 80 33 25.07
	2023.00	0.21	20.13	2022.95	710.86	1.67	-3.83	-5.13	0.40	537570.29	1703764.19	N 39 58 16.08	W 80 33 25.07
	2123.00	0.12	12.88	2122.95	810.86	1.77	-3.55	-5.04	0.09	537570.56	1703764.28	N 39 58 16.08	W 80 33 25.07
	2223.00	0.28	234.48	2222.95	910.86	1.89	-3.59	-5.22	0.38	537570.52	1703764.10	N 39 58 16.08	W 80 33 25.07
	2323.00	0.10	29.10	2322.95	1010.86	1.97	-3.66	-5.37	0.37	537570.46	1703763.94	N 39 58 16.08	W 80 33 25.08
	2423.00	0.40	295.38	2422.95	1110.86	2.33	-3.43	-5.65	0.42	537570.66	1703763.67	N 39 58 16.08	W 80 33 25.08
	2523.00	0.24	206.42	2522.95	1210.86	2.62	-3.47	-6.05	0.46	537570.65	1703763.26	N 39 58 16.08	W 80 33 25.08
	2623.00	0.44	305.26	2622.94	1310.85	2.96	-3.44	-6.46	0.53	537570.68	1703762.86	N 39 58 16.08	W 80 33 25.09
	2723.00	0.51	272.56	2722.94	1410.85	3.71	-3.19	-7.22	0.28	537570.92	1703762.10	N 39 58 16.09	W 80 33 25.10
	2823.00	0.42	344.76	2822.94	1510.85	4.37	-2.82	-7.76	0.55	537571.29	1703761.56	N 39 58 16.09	W 80 33 25.11
	2923.00	0.26	246.89	2922.94	1610.85	4.77	-2.56	-8.07	0.52	537571.56	1703761.25	N 39 58 16.09	W 80 33 25.11
	2983.00	0.49	301.44	2982.94	1670.85	5.09	-2.48	-8.41	0.67	537571.64	1703760.91	N 39 58 16.09	W 80 33 25.12
	3103.00	0.73	309.76	3102.93	1790.84	6.36	-1.72	-9.44	0.21	537572.40	1703759.88	N 39 58 16.10	W 80 33 25.13
	3196.00	2.12	327.72	3195.90	1883.81	8.58	0.11	-10.81	1.55	537574.23	1703758.51	N 39 58 16.12	W 80 33 25.15
	3291.00	4.11	334.72	3290.75	1978.66	13.28	4.68	-13.20	2.13	537578.79	1703756.12	N 39 58 16.16	W 80 33 25.18
	3386.00	4.65	331.61	3385.48	2073.39	19.85	11.14	-16.49	0.62	537585.26	1703752.83	N 39 58 16.23	W 80 33 25.22
	3478.00	3.95	329.03	3477.22	2165.13	26.23	17.14	-19.89	0.79	537591.26	1703749.43	N 39 58 16.28	W 80 33 25.27
	3573.00	1.48	312.48	3572.10	2260.01	30.51	20.78	-22.48	2.70	537594.89	1703746.84	N 39 58 16.32	W 80 33 25.30
	3602.00	1.28	306.15	3601.10	2289.01	31.21	21.22	-23.02	0.87	537595.34	1703746.30	N 39 58 16.32	W 80 33 25.31
	3698.00	1.03	307.85	3695.08	2382.99	33.10	22.35	-24.53	0.27	537596.47	1703744.78	N 39 58 16.34	W 80 33 26.33
	3791.00	0.96	310.46	3790.06	2477.97	34.75	23.39	-25.82	0.09	537597.51	1703743.50	N 39 58 16.35	W 80 33 25.34
	3886.00	0.82	283.03	3885.05	2572.96	36.16	24.06	-27.08	0.47	537598.18	1703742.24	N 39 58 16.35	W 80 33 25.36
	3981.00	0.70	281.04	3980.04	2667.95	37.29	24.33	-28.31	0.13	537598.44	1703741.00	N 39 58 16.35	W 80 33 25.37
	4076.00	0.49	298.20	4075.04	2762.95	38.21	24.63	-29.24	0.29	537598.75	1703740.08	N 39 58 16.36	W 80 33 25.39
	4170.00	0.21	283.87	4169.04	2856.95	38.78	24.86	-29.76	0.31	537598.98	1703739.55	N 39 58 16.36	W 80 33 25.39
	4265.00	0.22	261.55	4264.04	2951.95	39.05	24.88	-30.11	0.09	537598.99	1703739.20	N 39 58 16.36	W 80 33 25.40
	4359.00	0.10	163.53	4358.03	3045.94	39.11	24.77	-30.27	0.27	537598.89	1703739.05	N 39 58 16.35	W 80 33 25.40
	4454.00	0.23	270.57	4453.03	3140.94	39.19	24.70	-30.44	0.29	537598.81	1703738.88	N 39 58 16.36	W 80 33 25.40
	4548.00	0.31	249.70	4547.03	3234.94	39.47	24.61	-30.86	0.13	537598.72	1703738.45	N 39 58 16.36	W 80 33 25.41
	4643.00	0.24	253.97	4642.03	3329.94	39.72	24.47	-31.30	0.08	537598.58	1703738.02	N 39 58 16.36	W 80 33 25.41
	4737.00	0.26	260.98	4736.03	3423.94	39.98	24.38	-31.70	0.04	537598.49	1703737.62	N 39 58 16.35	W 80 33 25.42
	4831.00	0.38	257.98	4830.03	3517.94	40.33	24.28	-32.21	0.13	537598.39	1703737.11	N 39 58 16.35	W 80 33 25.42
	4926.00	0.34	292.96	4925.03	3612.94	40.80	24.32	-32.78	0.23	537598.44	1703736.54	N 39 58 16.35	W 80 33 25.43
	5021.00	0.17	300.06	5020.03	3707.94	41.21	24.50	-33.16	0.18	537598.62	1703736.16	N 39 58 16.36	W 80 33 25.44
	5115.00	0.26	292.91	5114.03	3801.94	41.56	24.66	-33.48	0.10	537598.77	1703735.84	N 39 58 16.36	W 80 33 25.44
	5210.00	0.29	282.87	5209.03	3896.94	41.98	24.79	-33.91	0.06	537598.91	1703735.41	N 39 58 16.36	W 80 33 25.45
	5304.00	0.38	290.27	5303.02	3990.93	42.50	24.96	-34.43	0.11	537599.07	1703734.89	N 39 58 16.36	W 80 33 25.45
	5399.00	0.40	300.83	5398.02	4085.93	43.12	25.23	-35.01	0.08	537599.35	1703734.30	N 39 58 16.36	W 80 33 25.46
	5493.00	0.32	264.07	5492.02	4179.93	43.64	25.38	-35.56	0.25	537599.49	1703733.76	N 39 58 16.36	W 80 33 25.47
	5588.00	0.35	295.84	5587.02	4274.93	44.11	25.47	-36.08	0.20	537599.59	1703733.24	N 39 58 16.37	W 80 33 25.47
	5645.00	0.33	310.92	5644.02	4331.93	44.45	25.66	-36.36	0.16	537599.77	1703732.96	N 39 58 16.37	W 80 33 25.48
	5674.00	0.20	308.06	5673.02	4360.93	44.58	25.74	-36.47	0.45	537599.86	1703732.85	N 39 58 16.37	W 80 33 25.48
	5721.00	0.73	348.60	5720.02	4407.93	44.89	26.08	-36.59	1.27	537600.20	1703732.73	N 39 58 16.37	W 80 33 25.48
	6767.00	5.39	15.39	5765.94	4453.85	48.95	28.48	-36.08	10.33	537602.57	1703733.24	N 39 58 16.39	W 80 33 25.46
	5816.00	11.11	22.27	5814.41	4502.32	48.13	35.05	-33.57	11.83	537609.16	1703735.54	N 39 58 16.46	W 80 33 25.45
	5863.00	14.44	22.75	5860.24	4548.15	50.92	44.85	-29.89	7.09	537618.76	1703739.53	N 39 58 16.56	W 80 33 25.40
	5910.00	16.47	22.22	5905.54	4593.45	54.29	56.22	-24.91	4.33	537630.33	1703744.41	N 39 58 16.67	W 80 33 25.34
	5958.00	18.14	21.06	5951.37	4639.28	58.35	69.49	-19.65	3.55	537643.60	1703749.67	N 39 58 16.80	W 80 33 25.27
	6005.00	22.39	21.00	5995.45	4683.36	63.13	84.68	-13.81	9.04	537658.80	1703755.51	N 39 58 16.95	W 80 33 25.20
	6053.00	27.12	20.85	6039.02	4726.93	69.06	103.45	-6.63	9.86	537677.56	1703762.68	N 39 58 17.14	W 80 33 25.11
	6100.00	29.40	18.79	6080.42	4768.33	76.44	124.51	0.51	5.34	537698.62	1703769.83	N 39 58 17.35	W 80 33 25.02
	6148.00	30.55	9.21	6122.02	4809.93	86.02	147.84	8.87	8.24	537721.95	1703775.19	N 39 58 17.58	W 80 33 24.95
	6195.00	33.01	3.49	6161.98	4849.89	99.67	172.42	8.56	8.27	537746.53	1703777.88	N 39 58 17.82	W 80 33 24.92
	6242.00	35.05	355.75	6200.94	4888.85	116.04	198.68	8.34	10.18	537772.78	1703777.66	N 39 58 18.08	W 80 33 24.93
	6289.00	35.66	350.22	6239.29	4927.20	135.31	225.64	5.82	6.53	537799.75	1703774.33	N 39 58 18.35	W 80 33 24.98
	6337.00	37.79	344.05	6277.77	4965.68	157.60	253.88	-1.41	8.87	537827.69	1703767.91	N 39 58 18.62	W 80 33 25.06
	6384.00	39.50	339.40	6314.48	5002.39	182.04	281.43	-10.62	7.17	537855.53	1703758.69	N 39 58 18.90	W 80 33 25.19
	6432.00	43.62	335.89	6350.40	5038.31	209.75	310.85	-22.77	9.86	537884.95	1703746.55	N 39 58 19.19	W 80 33 25.35
	6479.00	45.59	333.62	6383.86	5071.77	239.25	340.89	-36.85	6.39	537914.79	1703732.47	N 39 58 19.48	W 80 33 25.53
	6527.00	46.95	331.57	6417.04	5104.95	270.91	371.48	-52.82	4.19	537945.57	1703716.50	N 39 58 19.78	W 80 33 25.74
	6574.00	51.21	328.86	6447.82	5135.73	303.71	402.27	-70.48	10.06	537976.37	1703698.84	N 39 58 20.08	W 80 33 25.97
	6621.00	54.95	326.21	6476.06	5163.97	339.25	433.77	-90.94	10.09	538007.86	1703678.38	N 39 58 20.39	W 80 33 26.24
	6668.00	57.98	322.79	6502.02	5189.93	376.92	465.45	-113.97	7.74	538039.54	1703655.35	N 39 58 20.70	W 80 33 26.54
	6716.00	60.96	320.51	6526.41	5214.32	417.11	497.86	-139.63	7.43	538071.95	1703629.69	N 39 58 21.02	W 80 33 26.88
	6763.00	64.21	317.24	6548.05	5235.96	458.09	529.26	-167.07	9.27	538103.35	1703602.25	N 39 58 21.33	W 80 33 27.23
	6810.00	67.05	313.66	6567.44	5255.35	500.54	559.75	-197.11	9.20	538133.84	1703572.22	N 39 58 21.63	W 80 33 27.62
	6857.00	70.69	312.36	6584.39	5272.30	544.21	589.65	-229.16	8.16	538163.74	1703540.16	N 39 58 21.92	W 80 33 28.04
	6905.00	71.95	309.55	6599.76	5287.67	589.62	619.44	-263.50	6.14	538193.53	1703505.82	N 39 58 22.21	W 80 33 28.49
	6952.00	75.87	309.65	6612.78	5300.69	634.75	648.22	-298.29	8.34	538222.31	1703471.04	N 39 58 22.49	W 80 33 28.94
	6999.00	78.01	310.23	6623.41	5311.32	680.51	677.62	-333.39	4.71	538251.70	1703435.94	N 39 58 22.77	W 80 33 29.39
	7046.00	81.44	307.94	6631.79	5319.70	726.74	706.76	-369.28	8.73	538280.85	1703400.05	N 39 58 23.06	W 80 33 29.86
	7094.00	85.82	306.68	6637.11	5325.02	774.43	735.67	-407.22	9.49	538309.75	1703362.12	N 39 58 23.34	W 80 33 30.35
	7141.00	89.00	304.16	6639.65	5327.56	821.30	762.86	-445.46	7.08	538336.94	1703323.88	N 39 58 23.60	W 80 33 30.84
	7188.00	88.92	302.78	6640.91	5328.82	868.13	788.77	-484.65	3.53	538362.85	1703284.69	N 39 58 23.86	W 80 33 31.35
	7229.00	89.69	303.42	6641.41	5329.32	908.97	811.16	-518.99	2.44	538385.24	1703250.35	N 39 58 24.07	W 80 33 31.80
	7322.00	90.21	303.29	6641.49	5329.40	1001.65	862.29	-598.67	0.58	538436.37	1703172.67	N 39 58 24.57	W 80 33 32.80

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Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7418.00	90.55	303.36	6640.85	5328.76	1097.31	915.03	-676.89	0.36	538489.11	1703092.46	N 39 58 25.08	W 80 33 33.84
	7513.00	90.58	303.42	6639.91	5327.82	1191.09	967.31	-756.20	0.07	538541.39	1703013.15	N 39 58 25.59	W 80 33 34.87
	7608.00	90.65	303.25	6638.90	5326.81	1286.85	1019.52	-835.57	0.19	538593.59	1702933.79	N 39 58 26.09	W 80 33 35.89
	7702.00	90.86	303.30	6637.66	5325.57	1380.31	1071.08	-914.15	0.23	538645.15	1702853.21	N 39 58 26.60	W 80 33 36.91
	7797.00	91.07	303.67	6636.06	5323.97	1474.99	1123.49	-993.37	0.45	538697.56	1702775.99	N 39 58 27.10	W 80 33 37.94
	7890.00	90.82	303.91	6634.52	5322.43	1567.71	1175.21	-1070.65	0.37	538749.27	1702698.71	N 39 58 27.61	W 80 33 38.94
	7987.00	91.07	304.24	6632.92	5320.83	1664.46	1229.55	-1150.99	0.43	538803.61	1702618.38	N 39 58 28.13	W 80 33 39.98
	8081.00	91.10	304.93	6631.14	5319.05	1758.26	1282.69	-1228.36	0.73	538856.95	1702541.01	N 39 58 28.65	W 80 33 40.98
	8175.00	90.58	305.78	6629.76	5317.67	1852.14	1337.28	-1305.02	1.06	538911.34	1702464.36	N 39 58 29.18	W 80 33 41.97
	8270.00	90.79	306.10	6628.63	5316.54	1947.07	1393.03	-1381.92	0.40	538967.09	1702387.45	N 39 58 29.72	W 80 33 42.97
	8365.00	90.69	306.14	6627.40	5315.31	2042.00	1449.03	-1458.66	0.11	539023.08	1702310.72	N 39 58 30.27	W 80 33 43.96
	8459.00	90.24	305.78	6626.64	5314.55	2135.93	1504.23	-1534.74	0.61	539078.28	1702234.64	N 39 58 30.80	W 80 33 44.95
	8554.00	90.07	305.95	6626.38	5314.29	2230.86	1559.88	-1611.73	0.25	539133.93	1702157.66	N 39 58 31.34	W 80 33 45.94
	8649.00	89.79	305.99	6626.50	5314.41	2325.79	1615.68	-1688.61	0.30	539189.73	1702080.78	N 39 58 31.89	W 80 33 46.94
	8743.00	89.18	305.71	6627.34	5315.25	2419.72	1670.73	-1764.80	0.71	539244.78	1702004.59	N 39 58 32.42	W 80 33 47.93
	8838.00	89.52	305.39	6628.42	5316.33	2514.61	1726.96	-1842.09	0.49	539300.00	1701927.31	N 39 58 32.96	W 80 33 48.93
	8933.00	90.10	305.35	6628.74	5316.65	2609.50	1780.95	-1919.56	0.61	539354.99	1701849.84	N 39 58 33.49	W 80 33 49.93
	9027.00	90.14	305.18	6628.54	5316.45	2703.39	1835.23	-1996.31	0.19	539409.26	1701773.10	N 39 58 34.02	W 80 33 50.93
	9122.00	90.14	305.22	6628.31	5316.22	2798.27	1889.99	-2073.93	0.04	539464.02	1701695.47	N 39 58 34.55	W 80 33 51.93
	9217.00	90.24	304.86	6627.99	5315.90	2893.13	1944.53	-2151.71	0.39	539518.56	1701617.70	N 39 58 35.08	W 80 33 52.94
	9311.00	90.14	305.12	6627.68	5315.59	2986.99	1998.43	-2228.72	0.30	539572.46	1701540.69	N 39 58 35.61	W 80 33 53.94
	9406.00	90.45	305.33	6627.19	5315.10	3081.87	2053.23	-2306.33	0.39	539627.25	1701463.09	N 39 58 36.14	W 80 33 54.94
	9501.00	90.96	305.66	6626.02	5313.93	3176.76	2108.40	-2383.66	0.65	539682.42	1701385.76	N 39 58 36.67	W 80 33 55.94
	9595.00	91.13	306.29	6624.31	5312.22	3270.68	2163.52	-2459.71	0.67	539737.54	1701309.72	N 39 58 37.21	W 80 33 56.93
	9690.00	90.93	306.23	6622.60	5310.51	3365.62	2219.80	-2536.30	0.22	539793.82	1701233.13	N 39 58 37.76	W 80 33 57.92
	9784.00	90.38	306.15	6621.53	5309.44	3459.56	2275.30	-2612.16	0.59	539849.31	1701157.27	N 39 58 38.30	W 80 33 58.90
	9878.00	90.69	306.16	6620.65	5308.56	3553.50	2330.77	-2688.04	0.33	539904.78	1701081.39	N 39 58 38.84	W 80 33 59.89
	9973.00	90.55	306.18	6619.62	5307.53	3648.44	2386.84	-2764.72	0.15	539960.85	1701004.72	N 39 58 39.38	W 80 34 0.88
	10067.00	90.55	306.87	6618.72	5306.63	3742.37	2442.13	-2840.74	0.33	540018.13	1700928.70	N 39 58 39.92	W 80 34 1.88
	10162.00	90.34	305.47	6617.98	5305.89	3837.29	2497.52	-2917.91	0.48	540071.53	1700851.53	N 39 58 40.46	W 80 34 2.86
	10256.00	90.45	305.24	6617.33	5305.24	3931.17	2551.91	-2994.57	0.27	540125.92	1700774.87	N 39 58 40.99	W 80 34 3.86
	10351.00	90.62	305.05	6616.44	5304.35	4026.04	2606.59	-3072.25	0.27	540180.60	1700697.20	N 39 58 41.52	W 80 34 4.86
	10445.00	90.82	305.00	6615.43	5303.34	4119.90	2660.54	-3149.22	0.05	540234.54	1700620.23	N 39 58 42.04	W 80 34 5.86
	10540.00	90.62	304.45	6614.48	5302.39	4214.73	2714.65	-3227.30	0.59	540288.65	1700542.16	N 39 58 42.57	W 80 34 6.87
	10634.00	90.55	304.31	6613.60	5301.51	4308.53	2767.73	-3304.88	0.15	540341.73	1700464.58	N 39 58 43.08	W 80 34 7.87
	10728.00	90.69	304.15	6612.50	5300.50	4402.31	2820.60	-3382.59	0.23	540394.60	1700386.87	N 39 58 43.59	W 80 34 8.88
	10823.00	90.62	303.49	6611.30	5299.41	4497.04	2873.48	-3461.81	0.70	540447.47	1700307.96	N 39 58 44.11	W 80 34 9.90
	10917.00	90.69	303.04	6610.43	5298.34	4590.69	2925.03	-3540.10	0.48	540499.02	1700229.37	N 39 58 44.61	W 80 34 10.92
	11011.00	90.72	302.60	6609.27	5297.18	4684.29	2975.98	-3619.09	0.47	540549.96	1700150.38	N 39 58 45.10	W 80 34 11.94
	11107.00	91.17	302.55	6607.69	5295.60	4779.83	3027.66	-3699.98	0.47	540601.64	1700069.50	N 39 58 45.60	W 80 34 12.99
	11202.00	91.34	302.67	6605.61	5293.52	4874.37	3078.84	-3779.98	0.22	540652.82	1699989.50	N 39 58 46.10	W 80 34 14.02
	11296.00	91.24	303.17	6603.49	5291.40	4967.96	3128.91	-3858.87	0.54	540703.89	1699910.62	N 39 58 46.60	W 80 34 15.05
	11391.00	91.00	303.15	6601.63	5289.54	5062.59	3181.87	-3938.39	0.25	540755.85	1699831.11	N 39 58 47.10	W 80 34 16.08
	11486.00	90.65	303.52	6600.27	5288.18	5157.25	3234.07	-4017.74	0.54	540808.04	1699751.75	N 39 58 47.61	W 80 34 17.10
	11580.00	90.17	303.34	6599.59	5287.50	5250.93	3285.85	-4096.19	0.55	540859.83	1699673.31	N 39 58 48.11	W 80 34 18.12
	11675.00	89.73	303.88	6599.69	5287.59	5345.64	3338.51	-4175.26	0.82	540912.48	1699594.24	N 39 58 48.62	W 80 34 19.14
	11770.00	89.66	304.27	6600.18	5288.09	5440.41	3391.80	-4253.90	0.31	540965.77	1699515.60	N 39 58 49.14	W 80 34 20.18
	11864.00	90.31	304.47	6600.21	5288.12	5534.21	3444.87	-4331.49	0.72	541018.83	1699438.01	N 39 58 49.65	W 80 34 21.16
	11959.00	90.14	304.22	6599.83	5287.74	5629.01	3498.46	-4409.93	0.32	541072.43	1699359.58	N 39 58 50.17	W 80 34 22.18
	12054.00	90.10	303.90	6599.63	5287.54	5723.77	3551.67	-4488.63	0.34	541125.63	1699280.86	N 39 58 50.69	W 80 34 23.20
	12148.00	90.65	303.71	6599.02	5286.93	5817.50	3603.97	-4566.73	0.62	541177.93	1699202.76	N 39 58 51.20	W 80 34 24.21
	12243.00	91.10	303.85	6597.57	5285.48	5912.22	3656.78	-4645.69	0.50	541230.74	1699123.83	N 39 58 51.71	W 80 34 25.23
	12337.00	91.55	304.21	6595.39	5283.30	6005.96	3709.37	-4723.57	0.81	541283.33	1699045.95	N 39 58 52.22	W 80 34 26.24
	12428.00	91.92	305.45	6592.64	5280.55	6096.76	3761.32	-4798.23	1.42	541335.27	1698971.29	N 39 58 52.72	W 80 34 27.21
Proj to TD	12511.00	91.92	305.45	6589.86	5277.77	6179.63	3809.43	-4865.81	0.00	541383.38	1698903.72	N 39 58 53.19	W 80 34 28.08

Survey Type: Non-Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Survey Tool Type	Borehole / Survey
	0.000	22.910	Act Stns	SLB_NSG+MSHOT-Depth Only	Original Borehole / Noble Energy SHL-3E-HS Gyros+MWD 0ft to Update
	22.910	22.910	Act Stns	SLB_NSG+MSHOT-Depth Only	Original Borehole / Noble Energy SHL-3E-HS Gyros+MWD 0ft to Update
	22.910	2983.000	Act Stns	SLB_NSG+MSHOT	Original Borehole / Noble Energy SHL-3E-HS Gyros+MWD 0ft to Update
	2983.000	3573.000	Act Stns	SLB_NSG+SSHOT	Original Borehole / Noble Energy SHL-3E-HS Gyros+MWD 0ft to Update
	3573.000	5721.000	Act Stns	SLB_MWD-INC_ONLY	Original Borehole / Noble Energy SHL-3E-HS Gyros+MWD 0ft to Update
	5721.000	7188.000	Act Stns	SLB_MWD+DMAG	Original Borehole / Noble Energy SHL-3E-HS Gyros+MWD 0ft to Update
	7188.000	12511.000	Act Stns	SLB_MWD-STD	Original Borehole / Noble Energy SHL-3E-HS Gyros+MWD 0ft to Update

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