

# Noble Energy

CO, Weld County (NAD 83 NZ)  
Sec 8 Twn 4 N Rng 66 W  
Five Rivers K09-66-1AHN Original Hole  
05-123-39479  
H&P 330



A Schlumberger Company

## Final Survey Report

17-Sep-2014

Well Coordinates: NAD83 Colorado State Plane, Northern Zone

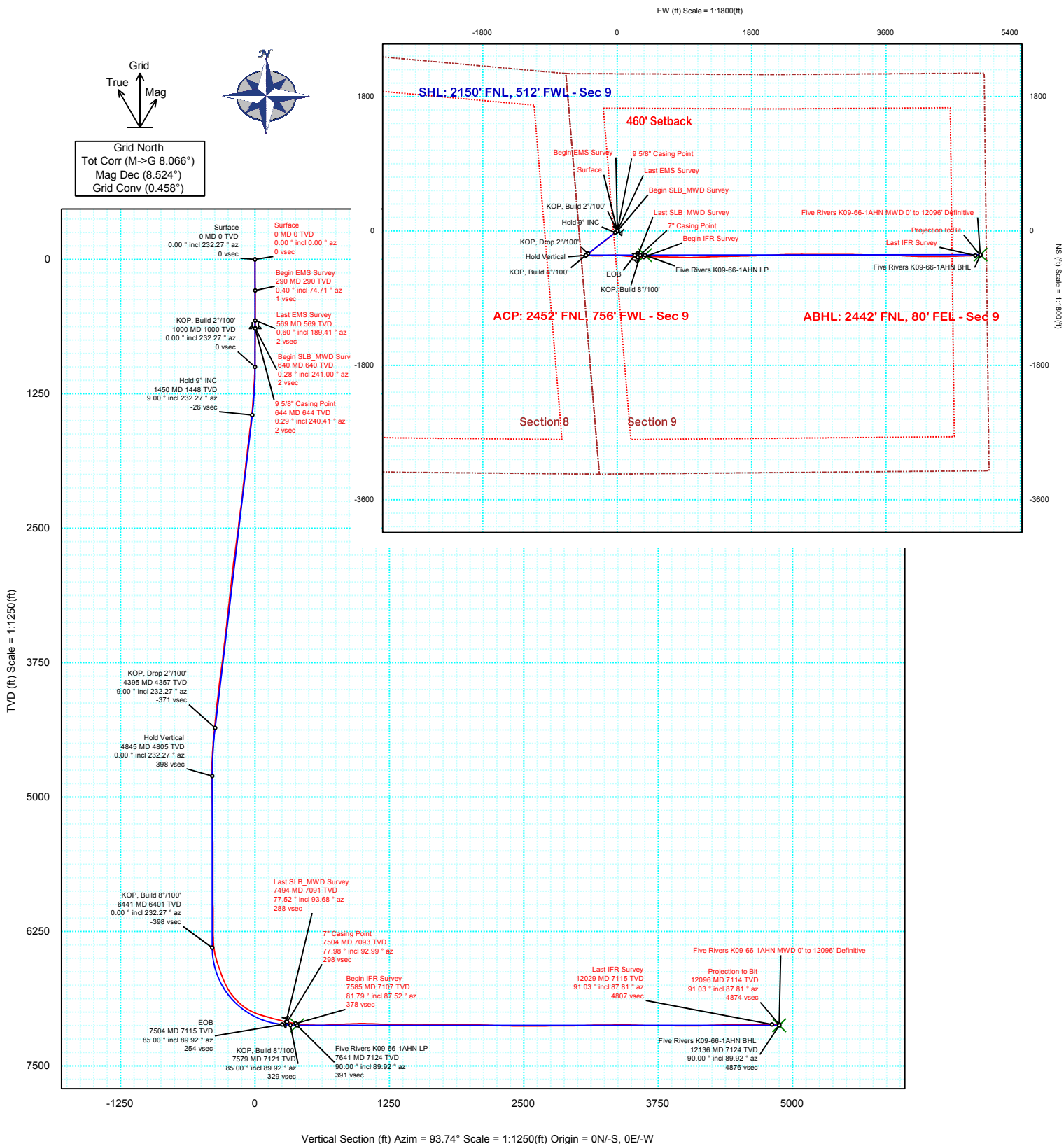
N 40° 19' 39.79200"	W 104° 47' 27.60000"
1363041.32 usFt	3197672.09 usFt

Ground Level:	4699.00 ft MSL
TVD Reference:	KB 30ft @ 4729.00 ft MSL
Local Coordinate Origin:	Five Rivers K09-66-1AHN well head
Vertical Section Azimuth:	93.740 ° (Grid North)
North Reference:	Grid North

DOX Version: 2.8

<b>Borehole:</b> Original Hole	<b>Well:</b> Five Rivers K09-66-1AHN	<b>Field:</b> CO, Weld County (NAD 83 NZ)	<b>Structure:</b> 08-04N-66W (Five Rivers K08-K09 Pad) - H&P 330
<b>Gravity &amp; Magnetic Parameters</b> Model: BGGM 2014 Dip: 66.869° Date: 16-Sep-2014 MagDec: 8.524° FS: 52645.134nT Gravity FS: 999.024mgn (9.80665 Based)		<b>Surface Location</b> NAD83 Colorado State Plane, Northern Zone, US Feet Lat: N 40 19 39.79 Northing: 1363019.46ftU Grid Conv: 0.4581° Lon: W 104 47 27.60 Easting: 3197672.27ftU Scale Fact: 0.99995775	
		<b>Miscellaneous</b> Slot: Five Rivers K09-66-1AHN TVD Ref: KB 30ft(4729ft above MSL) Plan: Five Rivers K09-66-1AHN MWD+IFR 0' to 12096' Definitive	

PvA



## Report

(Def Survey)

**Report Date:** September 17, 2014 - 11:53 AM  
**Client:** Noble Energy  
**Field:** CO, Weld County (NAD 83 NZ)  
**Structure / Slot:** Noble 08-04N-66W (Five Rivers K08-K09 Pad) - H&P 330 / Five Rivers K09-66-1AHN  
**Well:** Five Rivers K09-66-1AHN  
**Borehole:** Original Hole  
**UWI / API#:** Unknown / Unknown  
**Survey Name:** Five Rivers K09-66-1AHN MWD+IFR 0' to 12096' Definitive  
**Survey Date:** September 16, 2014  
**Tort / AHD / DDI / ERD Ratio:** 216.762 ° / 5839.099 ft / 6.332 / 0.819  
**Coordinate Reference System:** NAD83 Colorado State Plane, Northern Zone, US Feet  
**Location Lat / Long:** N 40° 19' 39.79200", W 104° 47' 27.60000"  
**Location Grid N/E Y/X:** N 1363019.461 ftUS, E 3197672.267 ftUS  
**CRS Grid Convergence Angle:** 0.4581 °  
**Grid Scale Factor:** 0.99995775  
**Version / Patch:** 2.8.551.0

**Survey / DLS Computation:** Minimum Curvature / Lubinski  
**Vertical Section Azimuth:** 93.740 ° (Grid North)  
**Vertical Section Origin:** 0.000 ft, 0.000 ft  
**TVD Reference Datum:** KB 30ft  
**TVD Reference Elevation:** 4729.000 ft above MSL  
**Seabed / Ground Elevation:** 4699.000 ft above MSL  
**Magnetic Declination:** 8.524 °  
**Total Gravity Field Strength:** 999.0239mgn (9.80665 Based)  
**Gravity Model:** GARM  
**Total Magnetic Field Strength:** 52645.134 nT  
**Magnetic Dip Angle:** 66.869 °  
**Declination Date:** September 16, 2014  
**Magnetic Declination Model:** BGGM 2014  
**North Reference:** Grid North  
**Grid Convergence Used:** 0.4581 °  
**Total Corr Mag North->Grid North:** 8.0659 °  
**Local Coord Referenced To:** Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	1363019.46	3197672.27	N 40 19 39.79	W 104 47 27.60
Begin EMS	290.00	0.40	74.71	290.00	0.96	0.27	0.98	0.14	1363019.73	3197673.24	N 40 19 39.79	W 104 47 27.59
Survey												
Last EMS	569.00	0.60	189.41	568.99	1.73	-0.92	1.68	0.30	1363018.54	3197673.94	N 40 19 39.78	W 104 47 27.58
Survey												
Begin												
SLB_MWD	640.00	0.28	240.99	639.99	1.55	-1.37	1.46	0.67	1363018.09	3197673.73	N 40 19 39.78	W 104 47 27.58
Survey												
9 5/8" Casing	644.00	0.29	240.41	643.99	1.53	-1.38	1.45	0.14	1363018.08	3197673.71	N 40 19 39.78	W 104 47 27.58
Point												
	731.00	0.40	231.33	730.99	1.12	-1.68	1.02	0.14	1363017.78	3197673.28	N 40 19 39.78	W 104 47 27.59
	825.00	0.49	242.98	824.99	0.53	-2.07	0.40	0.14	1363017.39	3197672.67	N 40 19 39.77	W 104 47 27.60
	919.00	0.89	229.90	918.98	-0.34	-2.72	-0.52	0.46	1363016.74	3197671.75	N 40 19 39.77	W 104 47 27.61
	1013.00	1.77	230.77	1012.95	-1.93	-4.11	-2.21	0.93	1363015.35	3197670.06	N 40 19 39.75	W 104 47 27.63
	1106.00	3.77	240.32	1105.84	-5.53	-6.53	-5.97	2.19	1363012.93	3197666.29	N 40 19 39.73	W 104 47 27.68
	1197.00	4.58	232.70	1196.60	-10.77	-10.21	-11.46	1.08	1363009.25	3197660.81	N 40 19 39.69	W 104 47 27.75
	1290.00	5.88	229.43	1289.21	-16.97	-15.56	-18.03	1.44	1363003.90	3197654.24	N 40 19 39.64	W 104 47 27.83
	1383.00	6.70	229.69	1381.65	-24.28	-22.17	-25.79	0.89	1362997.29	3197646.48	N 40 19 39.57	W 104 47 27.94
	1475.00	8.67	233.59	1472.82	-33.45	-29.76	-35.46	2.21	1362989.70	3197636.81	N 40 19 39.50	W 104 47 28.06
	1568.00	9.51	234.59	1564.65	-44.76	-38.38	-47.37	0.93	1362981.09	3197624.90	N 40 19 39.42	W 104 47 28.22
	1661.00	8.35	230.93	1656.52	-55.68	-47.09	-58.88	1.39	1362972.38	3197613.39	N 40 19 39.33	W 104 47 28.37
	1755.00	9.32	234.81	1749.40	-66.61	-55.78	-70.40	1.21	1362963.69	3197601.87	N 40 19 39.25	W 104 47 28.51
	1849.00	8.83	230.13	1842.23	-77.75	-64.79	-82.16	0.95	1362954.67	3197590.12	N 40 19 39.16	W 104 47 28.67
	1942.00	10.08	230.89	1933.96	-88.89	-74.50	-93.95	1.36	1362944.97	3197578.32	N 40 19 39.06	W 104 47 28.82
	2036.00	9.46	228.32	2026.60	-100.34	-84.82	-106.10	0.81	1362934.64	3197566.17	N 40 19 38.96	W 104 47 28.98
	2131.00	7.87	225.88	2120.51	-110.18	-94.54	-116.60	1.71	1362924.92	3197555.67	N 40 19 38.87	W 104 47 29.12
	2226.00	8.60	231.21	2214.53	-119.78	-103.52	-126.80	1.11	1362915.95	3197545.47	N 40 19 38.78	W 104 47 29.25
	2322.00	10.20	232.95	2309.24	-131.51	-113.14	-139.18	1.69	1362906.33	3197533.09	N 40 19 38.69	W 104 47 29.41
	2417.00	9.45	233.71	2402.85	-143.85	-122.82	-152.18	0.80	1362896.64	3197520.09	N 40 19 38.59	W 104 47 29.58
	2512.00	9.26	232.80	2496.59	-155.59	-132.06	-164.56	0.26	1362887.41	3197507.72	N 40 19 38.50	W 104 47 29.74
	2607.00	9.62	234.31	2590.30	-167.50	-141.31	-177.09	0.46	1362878.16	3197495.18	N 40 19 38.41	W 104 47 29.90
	2702.00	10.22	233.85	2683.88	-180.09	-150.91	-190.34	0.63	1362868.56	3197481.93	N 40 19 38.32	W 104 47 30.07
	2797.00	10.57	233.41	2777.32	-193.20	-161.08	-204.14	0.38	1362858.39	3197468.13	N 40 19 38.22	W 104 47 30.25
	2892.00	8.97	231.53	2870.94	-205.34	-170.88	-216.94	1.71	1362848.59	3197455.33	N 40 19 38.12	W 104 47 30.42
	2988.00	8.66	233.31	2965.80	-216.38	-179.86	-228.60	0.43	1362839.61	3197443.68	N 40 19 38.03	W 104 47 30.57
	3083.00	8.86	233.55	3059.70	-227.41	-188.48	-240.22	0.21	1362830.99	3197432.06	N 40 19 37.95	W 104 47 30.72
	3178.00	7.93	229.04	3153.68	-237.66	-197.12	-251.05	1.20	1362822.35	3197421.23	N 40 19 37.86	W 104 47 30.86
	3273.00	8.86	232.20	3247.66	-247.79	-205.90	-261.78	1.09	1362813.57	3197410.50	N 40 19 37.78	W 104 47 31.00
	3368.00	7.58	231.13	3341.68	-257.88	-214.31	-272.44	1.36	1362805.16	3197399.84	N 40 19 37.70	W 104 47 31.14
	3463.00	9.43	234.81	3435.63	-268.54	-222.73	-283.68	2.03	1362796.74	3197388.60	N 40 19 37.61	W 104 47 31.29
	3558.00	7.96	238.16	3529.54	-279.95	-230.69	-295.63	1.64	1362788.79	3197376.65	N 40 19 37.54	W 104 47 31.44
	3653.00	9.65	224.91	3623.43	-290.54	-239.80	-306.84	2.77	1362779.67	3197365.44	N 40 19 37.45	W 104 47 31.59
	3748.00	9.66	229.11	3717.08	-301.46	-250.65	-318.48	0.74	1362768.82	3197353.80	N 40 19 37.34	W 104 47 31.74
	3844.00	10.30	228.67	3811.63	-313.24	-261.59	-331.01	0.67	1362757.88	3197341.27	N 40 19 37.23	W 104 47 31.90
	3939.00	9.86	232.58	3905.16	-325.37	-272.14	-343.85	0.85	1362747.33	3197328.43	N 40 19 37.13	W 104 47 32.07
	4034.00	9.49	232.34	3998.81	-337.37	-281.87	-356.51	0.39	1362737.60	3197315.77	N 40 19 37.03	W 104 47 32.23
	4129.00	8.65	232.40	4092.62	-348.60	-291.01	-368.37	0.89	1362728.46	3197303.91	N 40 19 36.95	W 104 47 32.39
	4224.00	8.38	231.57	4186.58	-359.10	-299.67	-379.45	0.31	1362719.80	3197292.83	N 40 19 36.86	W 104 47 32.53
	4320.00	8.10	228.82	4281.59	-369.07	-308.47	-390.02	0.50	1362711.00	3197282.26	N 40 19 36.77	W 104 47 32.67
	4415.00	7.26	235.14	4375.74	-378.50	-316.31	-399.99	1.25	1362703.16	3197272.30	N 40 19 36.70	W 104 47 32.80
	4510.00	6.72	230.75	4470.03	-387.26	-323.26	-409.21	0.80	1362696.22	3197263.07	N 40 19 36.63	W 104 47 32.92
	4605.00	4.66	229.08	4564.56	-394.07	-329.31	-416.44	2.17	1362690.17	3197255.85	N 40 19 36.57	W 104 47 33.01
	4700.00	2.98	236.94	4659.34	-398.80	-333.18	-421.43	1.85	1362686.29	3197250.86	N 40 19 36.53	W 104 47 33.08
	4795.00	1.43	187.79	4754.28	-400.86	-335.70	-423.66	2.43	1362683.77	3197248.63	N 40 19 36.51	W 104 47 33.10
	4889.00	1.07	137.73	4848.26	-400.31	-337.52	-423.22	1.18	1362681.96	3197249.06	N 40 19 36.49	W 104 47 33.10
	4984.00	0.84	95.72	4943.24	-398.98	-338.24	-421.94	0.75	1362681.24	3197250.35	N 40 19 36.48	W 104 47 33.08
	5079.00	0.94	96.16	5038.23	-397.50	-338.39	-420.47	0.11	1362681.08	3197251.82	N 40 19 36.48	W 104 47 33.06
	5174.00	0.90	105.00	5133.22	-395.99	-338.67	-418.98	0.16	1362680.81	3197253.31	N 40 19 36.48	W 104 47 33.04
	5270.00	0.72	113.23	5229.21	-394.69	-339.10	-417.70	0.22	1362680.37	3197254.59	N 40 19 36.47	W 104 47 33.03
	5365.00	0.80	131.99	5324.20	-393.60	-339.78	-416.65	0.27	1362679.69	3197255.63	N 40 19 36.47	W 104 47 33.01
	5460.00	0.35	356.86	5419.20	-393.12	-339.94	-416.18	1.13	1362679.54	3197256.11	N 40 19 36.47	W 104 47 33.01
	5555.00	0.42	26.15	5514.20	-393.02	-339.34	-416.04	0.21	1362680.14	3197256.24	N 40 19 36.47	W 104 47 33.01
	5650.00	0.32	28.38	5609.20	-392.78	-338.80	-415.76	0.10	1362680.68	3197256.52	N 40 19 36.48	W 104 47 33.00
	5746.00	0.15	71.89	5705.20	-392.56	-338.53	-415.52	0.24	1362680.95	3197256.76	N 40 19 36.48	W 104 47 33.00
	5840.00	0.29	108.16	5799.20	-392.21	-338.56	-415.18	0.21	1362680.91	3197257.10	N 40 19 36.48	W 104 47 33.00
	5936.00	0.24	115.05	5895.19	-391.79	-338.72	-414.77	0.06	1362680.75	3197257.52	N 40 19 36.48	W 104 47 32.99
	6031.00	0.40	106.52	5990.19	-391.27	-338.90	-414.26	0.17	1362680.57	3197258.02	N 40 19 36.48	W 104 47 32.98
	6126.00	0.40	86.89	6085.19	-390.62	-338.98	-413.61	0.14	1362680.49	3197258.67	N 40 19 36.48	W 104 47 32.98
	6221.00	0.33	82.82	6180.19	-390.02	-338.93	-413.01	0.08	1362680.55	3197259.27	N 40 19 36.48	W 104 47 32.97
	6296.00	0.42	93.99	6255.19	-389.54	-338.92	-412.52	0.16	1362680.55	3197259.76	N 40 19 36.48	W 104 47 32.96
	6312.00	0.19	106.53	6271.19	-389.45	-338.93	-412.44	1.49	1362680.54	3197259.85	N 40 19 36.48	W 104 47 32.96
	6408.00	4.60	63.30	6367.08	-385.97	-337.25	-408.84	4.65	1362682.23	3197263.45	N 40 19 36.49	W 104 47 32.91
	6503.00	12										

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7359.00	74.50	95.43	7057.54	157.56	-337.04	135.87	1.19	1362682.44	3197908.13	N 40 19 36.45	W 104 47 25.88
	7454.00	76.23	96.04	7081.54	249.42	-346.22	227.32	1.92	1362673.25	3197899.58	N 40 19 36.35	W 104 47 24.70
Last SLB_MWD Survey	7494.00	77.52	93.68	7090.62	288.37	-349.52	266.13	6.59	1362669.96	3197938.39	N 40 19 36.32	W 104 47 24.20
7" Casing Point Begin IFR Survey	7504.00	77.98	92.99	7092.74	298.14	-350.09	275.89	8.14	1362669.39	3197948.14	N 40 19 36.31	W 104 47 24.07
	7585.00	81.79	87.52	7106.98	377.68	-350.43	355.58	8.14	1362669.05	3198027.84	N 40 19 36.30	W 104 47 23.05
	7680.00	85.32	88.03	7117.64	471.56	-346.76	449.90	3.75	1362672.71	3198122.14	N 40 19 36.33	W 104 47 21.83
	7775.00	88.42	90.68	7122.83	566.12	-345.70	544.73	4.29	1362673.78	3198216.97	N 40 19 36.33	W 104 47 20.60
	7870.00	92.92	91.48	7121.71	660.98	-347.49	639.68	4.81	1362671.99	3198311.92	N 40 19 36.31	W 104 47 19.38
	7966.00	93.92	91.03	7115.99	756.72	-349.59	735.49	1.14	1362669.89	3198407.72	N 40 19 36.28	W 104 47 18.14
	8061.00	92.10	91.93	7111.00	851.51	-352.04	830.32	2.14	1362667.44	3198502.55	N 40 19 36.25	W 104 47 16.92
	8156.00	91.55	91.63	7107.97	946.41	-354.99	925.22	0.66	1362664.49	3198597.45	N 40 19 36.21	W 104 47 15.69
	8251.00	88.18	88.23	7108.20	1041.17	-354.87	1020.20	5.04	1362664.61	3198692.42	N 40 19 36.33	W 104 47 14.46
	8346.00	88.18	87.94	7111.22	1135.66	-351.70	1115.09	0.31	1362667.78	3198787.31	N 40 19 36.23	W 104 47 13.24
	8442.00	88.25	87.13	7114.21	1231.05	-347.57	1210.96	0.85	1362671.91	3198883.17	N 40 19 36.26	W 104 47 12.00
	8537.00	90.07	88.62	7115.60	1325.54	-344.05	1305.88	2.48	1362675.43	3198978.09	N 40 19 36.29	W 104 47 10.78
	8632.00	91.17	88.97	7114.57	1420.18	-342.05	1400.85	1.22	1362677.42	3199073.05	N 40 19 36.30	W 104 47 9.55
	8727.00	89.93	87.86	7113.66	1514.76	-339.42	1495.80	1.75	1362680.05	3199168.00	N 40 19 36.32	W 104 47 8.32
	8822.00	88.63	89.66	7114.85	1609.39	-337.37	1590.77	2.34	1362682.11	3199262.96	N 40 19 36.33	W 104 47 7.10
	8917.00	88.80	88.64	7116.98	1704.06	-335.96	1685.73	1.09	1362683.52	3199357.92	N 40 19 36.34	W 104 47 5.87
	9013.00	89.24	87.99	7118.62	1799.61	-333.14	1781.68	0.82	1362686.34	3199453.86	N 40 19 36.36	W 104 47 4.63
	9108.00	91.07	88.67	7118.37	1894.18	-330.37	1876.63	2.05	1362689.11	3199548.81	N 40 19 36.38	W 104 47 3.40
	9203.00	90.62	89.05	7116.97	1988.83	-328.48	1971.60	0.62	1362691.00	3199643.78	N 40 19 36.39	W 104 47 2.18
	9298.00	87.46	87.01	7118.56	2083.33	-325.22	2066.51	3.96	1362694.26	3199738.69	N 40 19 36.41	W 104 47 0.95
	9393.00	87.46	86.82	7122.77	2177.56	-320.11	2161.28	0.20	1362699.37	3199833.46	N 40 19 36.46	W 104 46 59.73
	9488.00	88.56	87.78	7126.07	2271.90	-315.64	2256.12	1.54	1362703.84	3199928.29	N 40 19 36.49	W 104 46 58.50
	9583.00	88.45	89.58	7128.55	2366.50	-313.45	2351.06	1.90	1362706.03	3200023.22	N 40 19 36.51	W 104 46 57.28
	9679.00	89.42	89.84	7130.33	2462.24	-312.96	2447.04	1.05	1362706.51	3200119.20	N 40 19 36.50	W 104 46 56.04
	9774.00	90.45	90.74	7130.44	2557.07	-313.44	2542.03	1.44	1362706.03	3200214.19	N 40 19 36.49	W 104 46 54.81
	9869.00	90.79	90.22	7129.41	2651.91	-314.24	2637.02	0.65	1362705.24	3200309.18	N 40 19 36.48	W 104 46 53.59
	9964.00	90.62	90.22	7128.24	2746.72	-314.60	2732.02	0.18	1362704.87	3200404.16	N 40 19 36.47	W 104 46 52.36
	10059.00	90.10	89.43	7127.64	2841.50	-314.31	2827.01	1.00	1362705.16	3200499.16	N 40 19 36.46	W 104 46 51.13
	10154.00	90.72	90.36	7126.96	2936.28	-314.14	2922.01	1.18	1362705.34	3200594.15	N 40 19 36.46	W 104 46 49.91
	10249.00	91.27	90.14	7125.31	3031.09	-314.55	3016.99	0.62	1362704.92	3200689.13	N 40 19 36.44	W 104 46 48.68
	10344.00	91.93	90.62	7122.66	3125.89	-315.18	3111.95	0.86	1362704.29	3200784.08	N 40 19 36.43	W 104 46 47.45
	10439.00	90.03	91.41	7121.04	3220.76	-316.87	3206.92	2.17	1362702.61	3200879.05	N 40 19 36.41	W 104 46 46.23
	10534.00	90.86	91.37	7120.30	3315.68	-319.17	3301.89	0.87	1362700.30	3200974.01	N 40 19 36.38	W 104 46 45.00
	10630.00	90.52	90.59	7119.14	3411.56	-320.81	3397.87	0.89	1362698.66	3201069.98	N 40 19 36.35	W 104 46 43.76
	10725.00	87.77	91.78	7120.56	3506.44	-322.78	3492.82	3.15	1362696.70	3201164.94	N 40 19 36.32	W 104 46 42.54
	10820.00	88.28	91.49	7123.84	3601.32	-325.49	3587.73	0.62	1362693.99	3201259.84	N 40 19 36.29	W 104 46 41.31
	10915.00	89.59	91.25	7125.60	3696.22	-327.76	3682.68	1.40	1362691.72	3201354.79	N 40 19 36.26	W 104 46 40.09
	11011.00	90.48	91.58	7125.54	3792.14	-330.13	3778.65	0.99	1362689.35	3201450.75	N 40 19 36.23	W 104 46 38.85
	11105.00	88.63	93.21	7126.27	3886.10	-334.05	3872.56	2.62	1362685.42	3201544.66	N 40 19 36.18	W 104 46 37.64
	11201.00	89.38	92.02	7127.94	3982.07	-338.43	3968.44	1.47	1362681.04	3201640.54	N 40 19 36.13	W 104 46 36.40
	11296.00	90.58	91.72	7127.97	4077.02	-341.53	4063.39	1.30	1362677.94	3201735.48	N 40 19 36.09	W 104 46 35.17
	11391.00	91.58	89.73	7126.18	4171.86	-342.74	4158.36	2.34	1362676.74	3201830.44	N 40 19 36.07	W 104 46 33.95
	11486.00	92.34	89.41	7122.93	4266.55	-342.02	4253.30	0.87	1362677.45	3201925.38	N 40 19 36.07	W 104 46 32.72
	11581.00	91.61	89.91	7119.66	4361.26	-341.46	4348.24	0.93	1362678.02	3202020.32	N 40 19 36.07	W 104 46 31.50
	11676.00	89.79	88.31	7118.50	4455.93	-339.98	4443.22	2.55	1362679.49	3202115.29	N 40 19 36.08	W 104 46 30.27
	11771.00	90.48	88.14	7118.27	4550.49	-337.04	4538.17	0.75	1362682.44	3202210.24	N 40 19 36.10	W 104 46 29.04
	11867.00	90.62	88.40	7117.35	4646.05	-334.14	4634.12	0.31	1362685.33	3202306.18	N 40 19 36.12	W 104 46 27.80
	11962.00	90.82	88.00	7116.16	4740.60	-331.16	4729.07	0.47	1362688.32	3202401.13	N 40 19 36.14	W 104 46 26.58
Last IFR Survey	12029.00	91.03	87.81	7115.08	4807.24	-328.71	4796.01	0.42	1362690.77	3202468.07	N 40 19 36.16	W 104 46 25.71
Projection to Bit	12096.00	91.03	87.81	7113.87	4873.87	-326.15	4862.95	0.00	1362693.33	3202535.01	N 40 19 36.18	W 104 46 24.85

Survey Type: Def Survey

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

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EQU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
Surface	1	0.000	30.000	1/98.425	13.750	9.625	SLB_EMS-STD-Depth Only	Original Hole / Five Rivers K09-66-1AHN MWD+IFR 0' to 12096'
Surface	1	30.000	569.000	Act Stns	13.750	9.625	SLB_EMS-STD	Original Hole / Five Rivers K09-66-1AHN MWD+IFR 0' to 12096'
Intermediate	1	569.000	731.000	Act Stns	8.750	7.000	SLB_INC_ONLY<10	Original Hole / Five Rivers K09-66-1AHN MWD+IFR 0' to 12096'
Intermediate	1	731.000	6312.000	Act Stns	8.750	7.000	SLB_MWD-STD	Original Hole / Five Rivers K09-66-1AHN MWD+IFR 0' to 12096'
Intermediate	1	6312.000	7504.000	Act Stns	8.750	7.000	SLB_MWD+DMAG	Original Hole / Five Rivers K09-66-1AHN MWD+IFR 0' to 12096'
* Lateral	1	7504.000	12029.000	Act Stns	6.125	4.500	SLB_MWD+IFR+DMAG	Original Hole / Five Rivers K09-66-1AHN MWD+IFR 0' to 12096'
Bit Projection	1	12029.000	12096.000	Act Stns	6.125	4.500	SLB_BLIND+TREND	Original Hole / Five Rivers K09-66-1AHN MWD+IFR 0' to 12096'

\* SLB\_MWD+IFR+DMAG =  
MWD+IFR1+MS\_WY