

Noble Energy

CO, Weld County (NAD 83 NZ)
Sec 8 Twn 4 N Rng 66 W
Five Rivers K09-67-1HN Original Hole
05-123-39480
H&P 330



A Schlumberger Company

Final Survey Report

29-Oct-2014

Well Coordinates:	NAD83 CO State Plane, N Zone, US Feet
	N 40° 19' 40.69200" W 104° 47' 27.60000"
	1363041.32 usFt 3197672.09 usFt
Ground Level:	4700.00 ft MSL
TVD Reference:	KB 30ft @ 4730.00 ft MSL
Local Coordinate Origin:	Five Rivers K09-67-1HN well head
Vertical Section Azimuth:	85.727 ° (Grid North)
North Reference:	Grid North

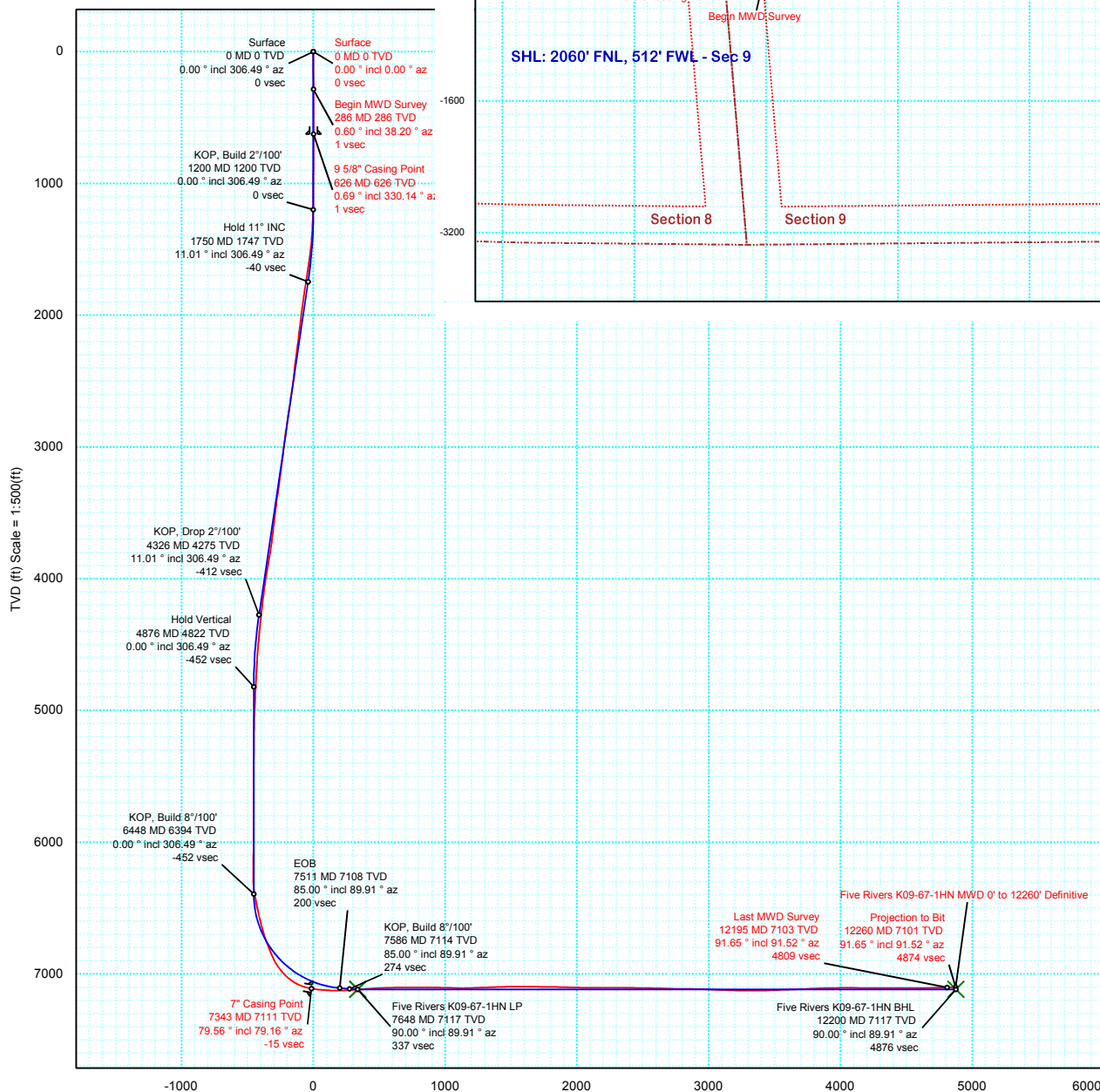
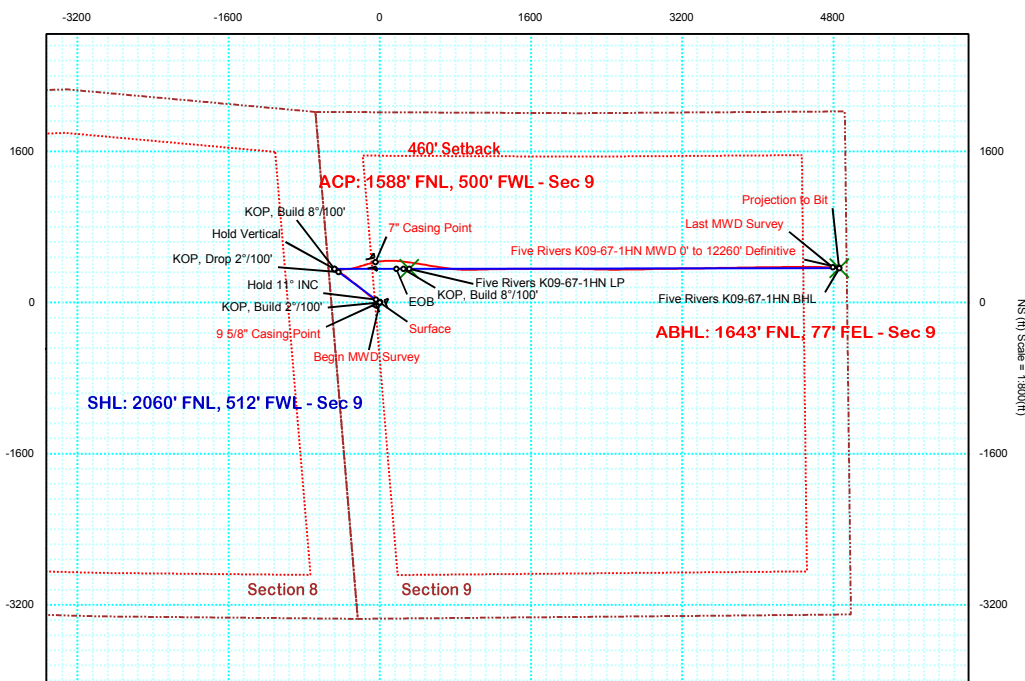
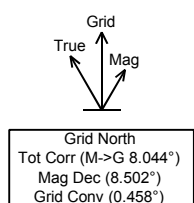
DOX Version: 2.8

Borehole: Original Hole	Well: Five Rivers K09-67-1HN	Field: CO, Weld County (NAD 83 NZ)	Structure: 08-04N-66W (Five Rivers K08-K09 Pad) - H&P 330
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Gravity & Magnetic Parameters	Surface Location	NAD83 Colorado State Plane, Northern Zone, US Feet	Miscellaneous
Model: BGGM 2013 Dip: 66.866° Date: 25-Jul-2014	Lat: N 40 19 40.69 Northing: 1363110.487ft	Grid Conv: 0.4581°	Slot: Five Rivers K09-67-1HN
MagDec: 8.502° FS: 52677.194nT Gravity FS: 999.024mgm (9.80665 Based)	Lon: W 104 47 27.67 Easting: 3197665.963ft	Scale Fact: 0.99995775	Plan: Five Rivers K09-67-1HN MWD 0' to 12260' Definitive

PvA

EW (ft) Scale = 1:800(ft)



Vertical Section (ft) Azim = 85.727° Scale = 1:500(ft) Origin = 0N/-S, 0E/-W



Five Rivers K09-67-1HN MWD+IFR 0' to 12260' Definitive Survey Geodetic Report (Def Survey)



Report Date: August 14, 2014 - 09:18 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 K09-67-1HN
Well: Five Rivers K09-67-1HN
Borehole: Original Hole
UWI / API#: Unknown / Unknown
Survey Name: Five Rivers K09-67-1HN MWD+IFR 0' to 12260' Definitive
Survey Date: July 25, 2014
Tort / AHD / DDI / ERD Ratio: 234.485 ° / 5984.610 ft / 6.383 / 0.840
Coordinate Reference System: NAD83 Colorado State Plane, Northern Zone, US Feet
Location Lat / Long: N 40° 19' 40.69200", W 104° 47' 27.67200"
Location Grid N/E Y/X: N 1363110.487 ftUS, E 3197665.963 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: 85.727 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: KB 30ft
TVD Reference Elevation: 4730.000 ft above MSL
Seabed / Ground Elevation: 4700.000 ft above MSL
Magnetic Declination: 8.502 °
Total Gravity Field Strength: 999.0238mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 52677.194 nT
Magnetic Dip Angle: 66.866 °
Declination Date: July 25, 2014
Magnetic Declination Model: BGGM 2013
North Reference: Grid North
Grid Convergence Used: 0.4581 °
Total Corr Mag North->Grid North: 8.0439 °
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	1363110.49	3197665.96	N 40 19 40.69	W 104 47 27.67
Begin EMS	286.00	0.60	38.20	285.99	1.01	1.18	0.93	0.21	1363111.66	3197666.89	N 40 19 40.70	W 104 47 27.66
Survey 9 5/8" Casing Point	626.00	0.69	330.14	625.98	1.32	4.36	1.00	0.21	1363114.85	3197666.96	N 40 19 40.74	W 104 47 27.66
Last EMS Survey Begin	630.00	0.70	329.60	629.98	1.30	4.40	0.98	0.21	1363114.89	3197666.94	N 40 19 40.74	W 104 47 27.66
SLB_MWD Survey	699.00	0.61	337.49	698.97	1.00	5.11	0.62	0.18	1363115.59	3197666.59	N 40 19 40.74	W 104 47 27.66
	793.00	0.64	340.44	792.97	0.71	6.06	0.26	0.05	1363116.55	3197666.22	N 40 19 40.75	W 104 47 27.67
	888.00	0.81	330.96	887.96	0.29	7.15	-0.25	0.22	1363117.64	3197665.71	N 40 19 40.76	W 104 47 27.67
	980.00	0.67	313.22	979.95	-0.35	8.09	-0.96	0.29	1363118.57	3197665.01	N 40 19 40.77	W 104 47 27.68
	1073.00	0.65	321.92	1072.95	-1.01	8.88	-1.68	0.11	1363119.36	3197664.29	N 40 19 40.78	W 104 47 27.69
	1165.00	0.79	318.95	1164.94	-1.68	9.77	-2.42	0.16	1363120.25	3197663.55	N 40 19 40.79	W 104 47 27.70
	1257.00	2.92	306.01	1256.89	-3.85	11.62	-4.73	2.34	1363122.11	3197661.24	N 40 19 40.81	W 104 47 27.73
	1351.00	3.83	304.13	1350.72	-8.14	14.79	-9.26	0.98	1363125.28	3197656.70	N 40 19 40.84	W 104 47 27.79
	1443.00	5.53	291.66	1442.41	-14.53	18.15	-15.93	2.14	1363128.64	3197650.04	N 40 19 40.87	W 104 47 27.88
	1536.00	7.86	285.82	1534.77	-24.53	21.54	-26.21	2.61	1363132.02	3197639.75	N 40 19 40.91	W 104 47 28.01
	1630.00	9.67	291.11	1627.67	-37.70	26.13	-39.76	2.11	1363136.62	3197626.20	N 40 19 40.95	W 104 47 28.18
	1724.00	10.41	300.14	1720.24	-51.84	33.24	-54.47	1.85	1363143.73	3197611.49	N 40 19 41.02	W 104 47 28.37
	1817.00	11.01	305.33	1811.62	-65.62	42.60	-68.98	1.22	1363153.08	3197596.98	N 40 19 41.12	W 104 47 28.56
	1910.00	9.59	302.26	1903.12	-78.69	51.87	-82.78	1.64	1363162.35	3197583.19	N 40 19 41.21	W 104 47 28.74
	2005.00	9.91	309.67	1996.75	-90.93	61.31	-95.77	1.36	1363171.80	3197570.20	N 40 19 41.31	W 104 47 28.90
	2100.00	9.22	308.96	2090.43	-102.36	71.32	-107.98	0.74	1363181.80	3197557.99	N 40 19 41.41	W 104 47 29.06
	2195.00	9.78	306.55	2184.13	-114.01	80.91	-120.38	0.72	1363191.39	3197545.59	N 40 19 41.50	W 104 47 29.22
	2290.00	10.72	311.06	2277.61	-126.33	91.52	-133.52	1.30	1363202.00	3197532.45	N 40 19 41.61	W 104 47 29.39
	2385.00	9.91	311.24	2371.08	-138.27	102.71	-146.33	0.85	1363213.19	3197519.64	N 40 19 41.72	W 104 47 29.55
	2480.00	8.75	308.66	2464.82	-149.29	112.61	-158.12	1.30	1363223.09	3197507.85	N 40 19 41.82	W 104 47 29.70
	2576.00	11.33	311.22	2559.34	-161.25	123.39	-170.92	2.73	1363233.87	3197495.05	N 40 19 41.92	W 104 47 29.87
	2671.00	12.02	309.85	2652.38	-174.89	135.88	-185.53	0.78	1363246.36	3197480.44	N 40 19 42.05	W 104 47 30.05
	2766.00	12.44	311.54	2745.22	-189.12	149.00	-200.78	0.58	1363259.48	3197465.19	N 40 19 42.18	W 104 47 30.25
	2861.00	10.70	309.54	2838.29	-202.62	161.40	-215.25	1.88	1363271.88	3197450.73	N 40 19 42.30	W 104 47 30.43
	2956.00	10.12	309.63	2931.72	-215.00	172.34	-228.48	0.61	1363282.82	3197437.50	N 40 19 42.41	W 104 47 30.60
	3051.00	9.28	309.19	3025.36	-226.57	182.50	-240.84	0.89	1363292.98	3197425.13	N 40 19 42.51	W 104 47 30.76
	3146.00	9.33	305.45	3119.11	-238.06	191.81	-253.05	0.64	1363302.29	3197412.92	N 40 19 42.61	W 104 47 30.92
	3241.00	10.16	303.55	3212.74	-250.60	200.91	-266.31	0.94	1363311.39	3197399.67	N 40 19 42.70	W 104 47 31.09
	3336.00	10.55	306.15	3306.20	-263.84	210.67	-280.31	0.64	1363321.15	3197385.66	N 40 19 42.80	W 104 47 31.27
	3431.00	10.61	307.77	3399.58	-276.95	221.16	-294.25	0.32	1363331.63	3197371.73	N 40 19 42.90	W 104 47 31.45
	3526.00	8.89	308.11	3493.20	-288.87	231.04	-306.94	1.81	1363341.52	3197359.04	N 40 19 43.00	W 104 47 31.61
	3621.00	9.14	308.87	3587.03	-299.80	240.31	-318.59	0.29	1363350.79	3197347.39	N 40 19 43.09	W 104 47 31.76
	3716.00	10.31	313.57	3680.67	-311.01	250.90	-330.62	1.49	1363361.38	3197335.35	N 40 19 43.20	W 104 47 31.91
	3811.00	11.98	310.67	3773.87	-323.70	263.19	-344.26	1.85	1363373.67	3197321.72	N 40 19 43.32	W 104 47 32.09
	3906.00	12.64	305.59	3866.69	-338.65	275.67	-360.19	1.33	1363386.14	3197305.79	N 40 19 43.44	W 104 47 32.29
	4001.00	12.18	305.00	3959.47	-354.39	287.46	-376.86	0.50	1363397.94	3197289.12	N 40 19 43.56	W 104 47 32.51
	4096.00	10.46	304.43	4052.62	-368.88	298.09	-392.18	1.81	1363408.56	3197273.80	N 40 19 43.67	W 104 47 32.70
	4192.00	8.42	300.05	4147.31	-381.49	306.54	-405.45	2.25	1363417.01	3197260.53	N 40 19 43.75	W 104 47 32.88
	4287.00	7.64	299.86	4241.38	-392.46	313.16	-416.95	0.82	1363423.64	3197249.03	N 40 19 43.82	W 104 47 33.02
	4382.00	6.77	299.36	4335.63	-402.35	319.05	-427.31	0.92	1363429.52	3197238.68	N 40 19 43.88	W 104 47 33.16
	4477.00	6.34	298.44	4430.01	-411.42	324.30	-436.80	0.47	1363434.77	3197229.18	N 40 19 43.93	W 104 47 33.28
	4572.00	6.06	300.72	4524.45	-419.94	329.36	-445.72	0.39	1363439.83	3197220.26	N 40 19 43.98	W 104 47 33.39
	4668.00	5.13	314.31	4620.00	-426.93	334.94	-453.15	1.68	1363445.41	3197212.83	N 40 19 44.04	W 104 47 33.49
	4763.00	4.59	314.01	4714.66	-432.27	340.55	-458.92	0.57	1363451.02	3197207.06	N 40 19 44.09	W 104 47 33.56
	4858.00	4.58	315.49	4809.35	-437.25	345.90	-464.32	0.12	1363456.37	3197201.67	N 40 19 44.15	W 104 47 33.63
	4953.00	4.04	314.78	4904.09	-441.90	350.96	-469.35	0.57	1363461.43	3197196.63	N 40 19 44.20	W 104 47 33.70
	5048.00	3.95	316.25	4998.85	-446.17	355.68	-473.99	0.14	1363466.15	3197192.00	N 40 19 44.24	W 104 47 33.76
	5143.00	2.79	324.72	5093.69	-449.44	359.93	-477.59	1.33	1363470.40	3197188.40	N 40 19 44.29	W 104 47 33.80
	5239.00	0.94	311.31	5189.63	-451.20	362.36	-479.53	1.97	1363472.83	3197186.46	N 40 19 44.31	W 104 47 33.83
	5334.00	0.69	306.53	5284.62	-452.17	363.21	-480.57	0.27	1363473.68	3197185.41	N 40 19 44.32	W 104 47 33.84
	5429.00	0.84	309.64	5379.62	-453.11	364.00	-481.57	0.16	1363474.47	3197184.42	N 40 19 44.33	W 104 47 33.85
	5524.00	0.28	78.52	5474.61	-453.38	364.49	-481.88	1.09	1363474.96	3197184.11	N 40 19 44.33	W 104 47 33.86
	5619.00	0.52	144.91	5569.61	-452.93	364.18	-481.40	0.51	1363474.65	3197184.58	N 40 19 44.33	W 104 47 33.85
	5715.00	1.06	177.80	5665.60	-452.74	362.94	-481.12	0.71	1363473.41	3197184.87	N 40 19 44.32	W 104 47 33.85
	5810.00	1.09	183.05	5760.59	-452.89	361.16	-481.13	0.11	1363471.63	3197184.85	N 40 19 44.30	W 104 47 33.85
	5905.00	0.88	192.79	5855.57	-453.21	359.54	-481.34	0.28	1363470.01	3197184.64	N 40 19 44.28	W 104 47 33.85
	5994.00	0.72	213.27	5944.56	-453.76	358.41	-481.80	0.37	1363468.88	3197184.18	N 40 19 44.27	W 104 47 33.86
	6089.00	0.76	208.03	6039.55	-454.46	357.35	-482.42	0.08	1363467.82	3197183.56	N 40 19 44.26	W 104 47 33.86
	6184.00	0.41	257.48	6134.55	-455.13	356.72	-483.05	0.61	1363467.20	3197182.93	N 40 19 44.26	W 104 47 33.87
	6279.00	0.85	250.73	6229.54	-456.15	356.42	-484.05	0.47	1363466.89	3197181.94	N 40 19 44.25	W 104 47 33.88
	6375.00	3.28	120.62	6325.50	-454.58	354.78	-482.36	4.04	1363465.25	3197183.63	N 40 19 44.24	W 104 47 33.86
	6422.00	8.27	96.64	6372.25	-450.16	353.71	-477.84	11.57	1363464.18	3197188.15	N 40 19 44.22	W 104 47 33.81
	6470.00	11.71	92.40	6419.52	-441.93	353.10	-469.54	7.32	1363463.57	3197196.44	N 40 19 44.22	W 104 47 33.70
	6565.00	12.48	104.51	6512.42	-422.63	350.13	-449.97	2.79	1363460.60	3197216.02	N 40 19 44.19	W 104 47 33.45
	6660.00	14.15	93.27	6604.88	-401.39	346.89	-428.43	3.23	1363457.36	3197237.55	N 40 19 44.15	W 104 47 33.17
	6755.00	17.40	81.87	6696.31	-375.70	348.24	-402.76	4.71	1363458.71	3197263.22	N 40 19 44.16	W 104 47 32.84
	6851.00	20.76	85.94	6787.03	-344.35	351.48						

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 ° ' ")
	7137.00	49.82	72.44	7026.55	-195.75	377.69	-224.52	14.85	1363488.16	3197441.46	N 40 19 44.44	W 104 47 30.53
	7232.00	63.51	73.28	7078.63	-118.55	400.98	-148.84	14.43	1363511.45	3197517.13	N 40 19 44.67	W 104 47 29.55
Last SLB_MWD Survey	7295.00	75.07	75.58	7100.88	-60.86	416.73	-92.16	18.66	1363527.20	3197573.81	N 40 19 44.82	W 104 47 28.82
7" Casing Point Begin IFR Survey	7343.00	79.56	79.16	7111.42	-14.54	426.95	-46.48	11.86	1363537.42	3197619.48	N 40 19 44.91	W 104 47 28.23
	7398.00	84.76	83.14	7118.92	39.74	435.32	7.33	11.86	1363545.78	3197673.29	N 40 19 44.99	W 104 47 27.53
	7492.00	87.38	88.87	7125.36	133.47	441.84	100.83	6.69	1363552.31	3197766.79	N 40 19 45.05	W 104 47 26.32
	7585.00	92.68	94.95	7125.31	225.85	438.74	193.70	8.67	1363549.21	3197859.66	N 40 19 45.01	W 104 47 25.13
	7678.00	93.75	97.25	7120.10	317.18	428.88	286.02	2.72	1363539.34	3197951.97	N 40 19 44.91	W 104 47 23.93
	7773.00	94.09	99.09	7113.60	409.73	415.41	379.83	1.97	1363525.88	3198045.78	N 40 19 44.77	W 104 47 22.72
	7868.00	93.06	99.77	7107.68	501.84	399.87	473.37	1.30	1363510.34	3198139.31	N 40 19 44.61	W 104 47 21.52
	7963.00	90.79	98.95	7104.49	594.11	384.43	567.04	2.54	1363494.90	3198232.98	N 40 19 44.45	W 104 47 20.31
	8058.00	91.10	98.76	7102.92	686.61	369.81	660.90	0.38	1363480.28	3198326.83	N 40 19 44.29	W 104 47 19.10
	8153.00	89.79	96.38	7102.18	779.58	357.30	755.06	2.86	1363467.77	3198420.99	N 40 19 44.16	W 104 47 17.89
	8248.00	89.35	93.57	7102.90	873.33	349.06	849.69	2.99	1363459.53	3198515.61	N 40 19 44.07	W 104 47 16.67
	8344.00	89.11	89.60	7104.19	968.80	346.41	945.62	4.14	1363456.88	3198611.54	N 40 19 44.04	W 104 47 15.43
	8439.00	87.56	87.77	7106.95	1063.63	348.58	1040.55	2.52	1363459.06	3198706.47	N 40 19 44.05	W 104 47 14.20
	8534.00	91.13	89.11	7108.03	1158.50	351.17	1135.49	4.01	1363461.64	3198801.40	N 40 19 44.07	W 104 47 12.97
	8629.00	92.65	88.90	7104.90	1253.29	352.82	1230.42	1.62	1363463.29	3198896.33	N 40 19 44.08	W 104 47 11.75
	8724.00	92.27	88.75	7100.82	1348.06	354.76	1325.31	0.43	1363465.24	3198991.22	N 40 19 44.09	W 104 47 10.52
	8820.00	91.13	90.46	7097.98	1443.80	355.43	1421.26	2.14	1363465.90	3199087.16	N 40 19 44.09	W 104 47 9.28
	8915.00	90.65	89.89	7096.50	1538.50	355.14	1516.25	0.78	1363465.61	3199182.15	N 40 19 44.08	W 104 47 8.06
	9010.00	89.42	89.44	7096.44	1633.27	355.69	1611.25	1.38	1363466.16	3199277.14	N 40 19 44.08	W 104 47 6.83
	9105.00	88.93	90.42	7097.81	1728.01	355.81	1706.24	1.15	1363466.28	3199372.12	N 40 19 44.07	W 104 47 5.61
	9200.00	89.45	90.16	7099.15	1822.69	355.33	1801.23	0.61	1363465.80	3199467.11	N 40 19 44.06	W 104 47 4.38
	9295.00	87.93	90.10	7101.32	1917.39	355.11	1896.20	1.60	1363465.58	3199562.08	N 40 19 44.05	W 104 47 3.15
	9390.00	88.80	90.09	7104.03	2012.07	354.95	1991.16	0.92	1363465.42	3199657.03	N 40 19 44.04	W 104 47 1.93
	9485.00	90.41	89.76	7104.69	2106.81	355.08	2086.15	1.73	1363465.55	3199752.02	N 40 19 44.03	W 104 47 0.70
	9581.00	89.52	91.59	7104.75	2202.45	353.95	2182.14	2.12	1363464.42	3199848.01	N 40 19 44.02	W 104 46 59.46
	9676.00	90.52	92.44	7104.72	2296.87	350.61	2277.08	1.38	1363461.08	3199942.94	N 40 19 43.98	W 104 46 58.24
	9771.00	88.69	90.32	7105.37	2391.40	348.32	2372.04	2.95	1363458.79	3200037.90	N 40 19 43.95	W 104 46 57.01
	9866.00	89.62	90.14	7106.77	2486.10	347.94	2467.03	1.00	1363458.41	3200132.88	N 40 19 43.93	W 104 46 55.78
	9961.00	88.49	89.58	7108.34	2580.83	348.17	2562.01	1.33	1363458.64	3200227.86	N 40 19 43.93	W 104 46 54.56
	10056.00	88.24	89.49	7111.05	2675.59	348.94	2656.97	0.28	1363459.41	3200322.82	N 40 19 43.93	W 104 46 53.33
	10151.00	89.28	88.95	7113.10	2770.39	350.23	2751.94	1.23	1363460.70	3200417.78	N 40 19 43.93	W 104 46 52.10
	10246.00	89.24	87.91	7114.33	2865.27	352.84	2846.89	1.10	1363463.31	3200512.73	N 40 19 43.95	W 104 46 50.88
	10342.00	88.11	88.22	7116.55	2961.16	356.08	2942.81	1.22	1363466.55	3200608.64	N 40 19 43.98	W 104 46 49.64
	10437.00	87.39	89.78	7120.28	3055.93	357.73	3037.72	1.81	1363468.20	3200703.55	N 40 19 43.99	W 104 46 48.41
	10532.00	88.07	89.65	7124.04	3150.63	358.21	3132.64	0.73	1363468.68	3200798.47	N 40 19 43.98	W 104 46 47.19
	10627.00	89.11	89.91	7126.38	3245.36	358.57	3227.61	1.13	1363469.04	3200893.43	N 40 19 43.98	W 104 46 45.96
	10723.00	90.14	89.07	7127.01	3341.15	359.43	3323.61	1.38	1363469.90	3200989.42	N 40 19 43.98	W 104 46 44.72
	10817.00	91.69	88.79	7125.51	3434.99	361.18	3417.57	1.68	1363471.65	3201083.39	N 40 19 43.99	W 104 46 43.51
	10913.00	92.69	88.18	7121.84	3530.80	363.72	3513.47	1.22	1363474.19	3201179.28	N 40 19 44.01	W 104 46 42.27
	11008.00	91.75	89.41	7118.16	3625.59	365.71	3608.37	1.63	1363476.18	3201274.18	N 40 19 44.02	W 104 46 41.05
	11103.00	92.10	88.98	7114.97	3720.36	367.05	3703.31	0.58	1363477.52	3201369.11	N 40 19 44.02	W 104 46 39.82
	11198.00	92.96	88.73	7110.78	3815.13	368.94	3798.20	0.94	1363479.41	3201463.99	N 40 19 44.03	W 104 46 38.59
	11293.00	90.86	88.98	7107.61	3909.93	370.84	3893.12	2.23	1363481.31	3201558.91	N 40 19 44.05	W 104 46 37.37
	11388.00	91.51	89.43	7105.64	4004.73	372.16	3988.09	0.83	1363482.63	3201653.88	N 40 19 44.05	W 104 46 36.14
	11483.00	88.90	89.32	7105.30	4099.53	373.19	4083.08	2.75	1363483.66	3201748.86	N 40 19 44.05	W 104 46 34.92
	11579.00	89.18	89.33	7106.91	4195.33	374.32	4179.06	0.29	1363484.79	3201844.83	N 40 19 44.06	W 104 46 33.68
	11674.00	89.62	89.20	7107.91	4290.14	375.54	4274.04	0.48	1363486.01	3201939.82	N 40 19 44.06	W 104 46 32.45
	11769.00	90.65	88.91	7107.68	4384.98	377.11	4369.03	1.13	1363487.58	3202034.80	N 40 19 44.07	W 104 46 31.22
	11864.00	89.83	90.46	7107.29	4479.75	377.63	4464.02	1.85	1363488.10	3202129.79	N 40 19 44.07	W 104 46 30.00
	11959.00	90.17	90.46	7107.29	4574.43	376.87	4559.02	0.36	1363487.34	3202224.78	N 40 19 44.05	W 104 46 28.77
	12054.00	91.03	90.99	7106.29	4669.06	375.67	4654.00	1.06	1363486.14	3202319.76	N 40 19 44.03	W 104 46 27.54
	12149.00	91.41	91.42	7104.27	4763.60	373.67	4748.96	0.60	1363484.14	3202414.71	N 40 19 44.00	W 104 46 26.32
Last IFR Survey	12195.00	91.65	91.52	7103.04	4809.36	372.49	4794.93	0.57	1363482.96	3202460.68	N 40 19 43.99	W 104 46 25.72
Projection to Bit	12260.00	91.65	91.52	7101.17	4874.00	370.77	4859.88	0.00	1363481.24	3202525.63	N 40 19 43.97	W 104 46 24.89

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)	EOU Freq (ft)	Hole Size Casing Diameter (in)	Survey Tool Type	Borehole / Survey
Surface	1	0.000	30.000	Act Stns	13.750	9.625	SLB_EMS-STD-Depth Only
Surface	1	30.000	286.000	Act Stns	13.750	9.625	SLB_EMS-STD
Surface	1	286.000	630.000	1/98.425	13.750	9.625	SLB_EMS-STD
Vert/Build	1	630.000	7295.000	Act Stns	8.750	7.000	SLB_MWD-STD
* Lateral	1	7295.000	12195.000	Act Stns	6.125	4.500	SLB_MWD+IFR+DMAG
Bit Projection	1	12195.000	12260.000	Act Stns	6.125	4.500	SLB_BLIND+TREND

* SLB_MWD+IFR+DMAG =
MWD+IFR1+MS_WY