

Synergy Resources

Well Name: **SRC Kiehn C-4NHZ**

Surface Location: SRC Kiehn Pad Sec.4-T4N-R68W

North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

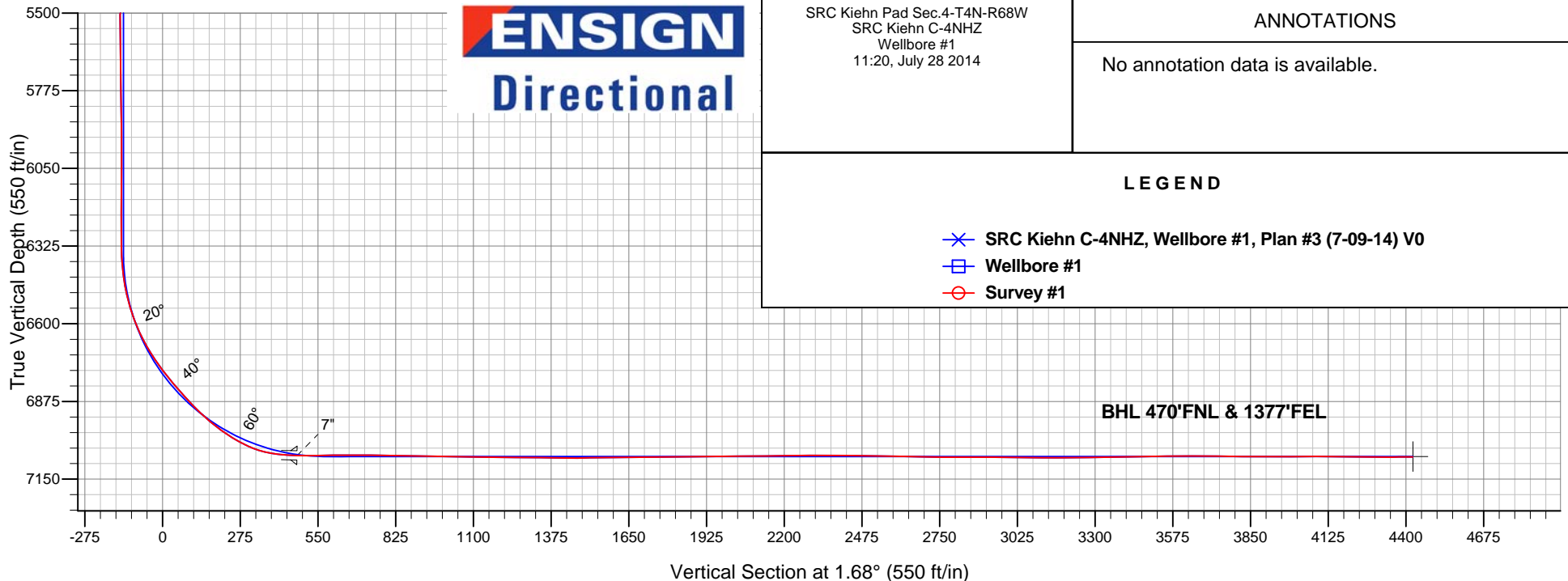
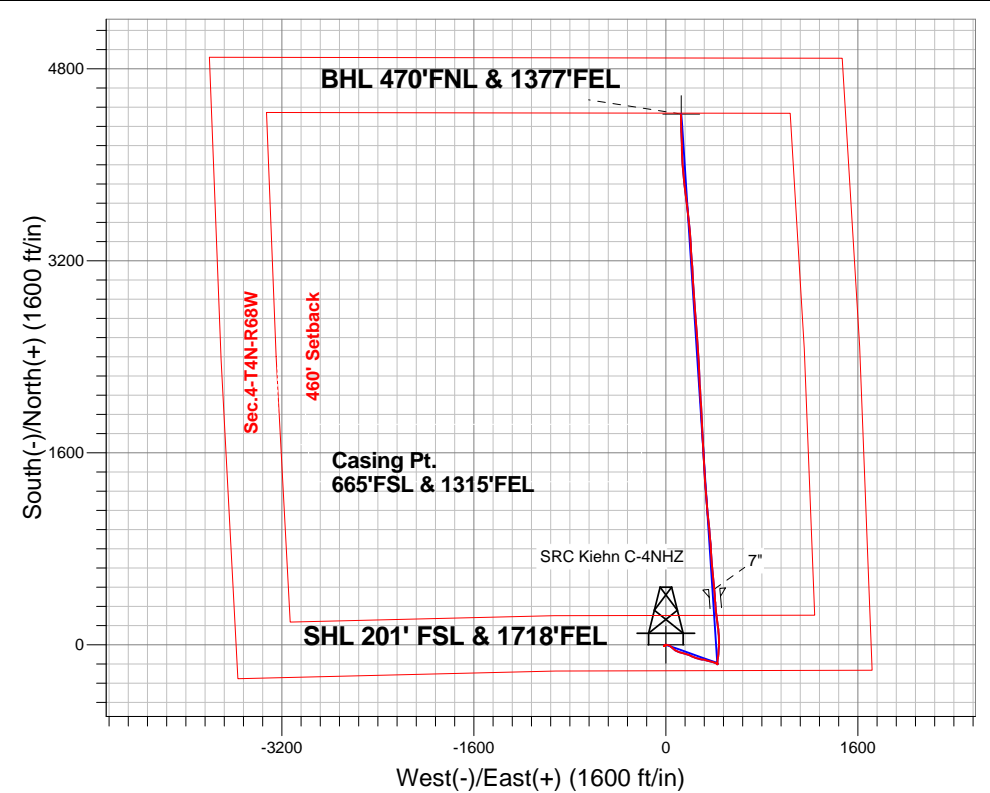
Ground Elevation: 5064.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1365561.73	3137974.04	40.335811	-105.005066	

Ensign 131 RKB - 13.5' WELL @ 5077.5ft (Ensign 131 RKB - 13.5')

FINAL SURVEY

Projected Bottom Hole Location
11389'MD 7071'TVD 4422'N & 125'E of SHL
90.5 degree Incl @ 357.7 degree AZM



SRC Kiehn Pad Sec.4-T4N-R68W
SRC Kiehn C-4NHZ
Wellbore #1
11:20, July 28 2014

ANNOTATIONS

No annotation data is available.

LEGEND

- ✕ SRC Kiehn C-4NHZ, Wellbore #1, Plan #3 (7-09-14) V0
- Wellbore #1
- Survey #1



Synergy Resources

SEC.4-T4N-R68W

SRC Kiehn Pad Sec.4-T4N-R68W

SRC Kiehn C-4NHZ

Wellbore #1

Survey: Survey #1

Standard Survey Report

28 July, 2014

Company:	Synergy Resources	Local Co-ordinate Reference:	Well SRC Kiehn C-4NHZ
Project:	SEC.4-T4N-R68W	TVD Reference:	WELL @ 5077.5ft (Ensign 131 RKB - 13.5')
Site:	SRC Kiehn Pad Sec.4-T4N-R68W	MD Reference:	WELL @ 5077.5ft (Ensign 131 RKB - 13.5')
Well:	SRC Kiehn C-4NHZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.4-T4N-R68W, Weld, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	SRC Kiehn Pad Sec.4-T4N-R68W				
Site Position:		Northing:	1,365,561.75ft	Latitude:	40.335811
From:	Lat/Long	Easting:	3,137,974.04ft	Longitude:	-105.005066
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.32 °

Well	SRC Kiehn C-4NHZ					
Well Position	+N/-S	0.0 ft	Northing:	1,365,561.73 ft	Latitude:	40.335811
	+E/-W	0.0 ft	Easting:	3,137,974.04 ft	Longitude:	-105.005066
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,064.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/10/2014	8.57	66.85	52,747

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	1.68	

Survey Program		Date	7/28/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
169.0	11,389.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
1.0	0.01	270.90	1.0	0.0	0.0	0.0	1.12	1.12	0.00	
SHL 201' FSL & 1718'FEL										
169.0	1.90	270.90	169.0	0.0	-2.8	0.0	1.12	1.12	0.00	
264.0	1.30	249.20	263.9	-0.3	-5.4	-0.5	0.89	-0.63	-22.84	
358.0	1.10	244.00	357.9	-1.1	-7.2	-1.3	0.24	-0.21	-5.53	
451.0	0.50	162.90	450.9	-1.9	-7.9	-2.1	1.22	-0.65	-87.20	
526.0	0.70	201.40	525.9	-2.6	-7.9	-2.8	0.58	0.27	51.33	
634.0	1.50	254.30	633.9	-3.6	-9.5	-3.9	1.12	0.74	48.98	
728.0	2.20	161.20	727.8	-5.6	-10.2	-5.9	2.90	0.74	-99.04	
822.0	1.50	59.20	821.8	-6.7	-8.5	-7.0	3.09	-0.74	-108.51	
917.0	2.60	236.80	916.8	-7.3	-9.2	-7.5	4.31	1.16	186.95	
1,012.0	1.40	242.40	1,011.7	-9.0	-12.1	-9.3	1.28	-1.26	5.89	

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Well:	SRC Kiehn C-4NHZ	North Reference:	True
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Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,110.0	0.40	325.00	1,109.7	-9.3	-13.3	-9.6	1.43	-1.02	84.29
1,202.0	1.10	277.90	1,201.7	-8.9	-14.4	-9.3	0.95	0.76	-51.20
1,293.0	0.60	89.30	1,292.7	-8.7	-14.8	-9.2	1.86	-0.55	188.35
1,385.0	1.40	35.30	1,384.7	-7.8	-13.7	-8.2	1.25	0.87	-58.70
1,478.0	1.80	61.00	1,477.7	-6.2	-11.7	-6.5	0.87	0.43	27.63
1,570.0	3.50	65.70	1,569.6	-4.3	-7.9	-4.6	1.86	1.85	5.11
1,661.0	3.60	62.20	1,660.4	-1.9	-2.8	-1.9	0.26	0.11	-3.85
1,754.0	4.00	78.70	1,753.2	0.1	2.9	0.2	1.25	0.43	17.74
1,846.0	4.00	104.40	1,845.0	0.0	9.2	0.2	1.93	0.00	27.93
1,938.0	5.20	110.00	1,936.7	-2.3	16.2	-1.8	1.39	1.30	6.09
2,030.0	5.90	105.80	2,028.2	-5.0	24.7	-4.2	0.88	0.76	-4.57
2,123.0	6.90	120.60	2,120.7	-9.1	34.1	-8.1	2.07	1.08	15.91
2,216.0	9.00	135.70	2,212.8	-17.2	44.0	-15.9	3.17	2.26	16.24
2,308.0	9.70	131.10	2,303.6	-27.4	54.8	-25.8	1.11	0.76	-5.00
2,400.0	9.20	128.70	2,394.3	-37.1	66.4	-35.1	0.69	-0.54	-2.61
2,493.0	9.40	125.50	2,486.1	-46.2	78.4	-43.9	0.60	0.22	-3.44
2,585.0	10.30	111.80	2,576.7	-53.6	92.2	-50.9	2.72	0.98	-14.89
2,677.0	9.10	107.10	2,667.4	-58.8	106.8	-55.6	1.56	-1.30	-5.11
2,769.0	8.70	110.20	2,758.3	-63.3	120.2	-59.8	0.68	-0.43	3.37
2,861.0	9.00	107.20	2,849.2	-67.8	133.6	-63.9	0.60	0.33	-3.26
2,953.0	9.10	101.40	2,940.1	-71.4	147.6	-67.1	1.00	0.11	-6.30
3,042.0	7.50	102.80	3,028.1	-74.1	160.2	-69.4	1.81	-1.80	1.57
3,131.0	7.70	110.60	3,116.4	-77.5	171.5	-72.4	1.18	0.22	8.76
3,220.0	8.30	107.20	3,204.5	-81.5	183.2	-76.1	0.86	0.67	-3.82
3,309.0	8.60	113.70	3,292.5	-86.0	195.4	-80.3	1.12	0.34	7.30
3,399.0	10.00	116.20	3,381.3	-92.2	208.6	-86.1	1.62	1.56	2.78
3,488.0	11.10	113.20	3,468.8	-99.0	223.4	-92.4	1.38	1.24	-3.37
3,577.0	11.70	112.00	3,556.1	-105.7	239.6	-98.7	0.72	0.67	-1.35
3,666.0	12.00	105.30	3,643.2	-111.6	256.9	-104.0	1.58	0.34	-7.53
3,756.0	11.00	104.80	3,731.4	-116.2	274.2	-108.2	1.12	-1.11	-0.56
3,845.0	8.60	106.00	3,819.1	-120.2	288.9	-111.7	2.71	-2.70	1.35
3,934.0	7.50	93.30	3,907.2	-122.4	301.1	-113.5	2.34	-1.24	-14.27
4,023.0	5.90	89.60	3,995.6	-122.7	311.4	-113.5	1.86	-1.80	-4.16
4,113.0	6.10	107.20	4,085.1	-124.1	320.6	-114.7	2.05	0.22	19.56
4,202.0	7.50	111.30	4,173.5	-127.6	330.6	-117.9	1.66	1.57	4.61
4,291.0	7.40	108.60	4,261.7	-131.5	341.4	-121.5	0.41	-0.11	-3.03
4,380.0	7.00	102.50	4,350.0	-134.5	352.1	-124.2	0.97	-0.45	-6.85
4,469.0	5.80	99.80	4,438.5	-136.5	361.8	-125.8	1.39	-1.35	-3.03
4,558.0	6.50	100.00	4,527.0	-138.1	371.2	-127.2	0.79	0.79	0.22
4,647.0	6.40	103.30	4,615.4	-140.1	381.0	-128.9	0.43	-0.11	3.71
4,736.0	6.20	116.50	4,703.9	-143.4	390.2	-131.9	1.64	-0.22	14.83
4,825.0	5.00	115.70	4,792.4	-147.2	398.0	-135.5	1.35	-1.35	-0.90
4,914.0	5.80	105.30	4,881.1	-150.1	405.8	-138.2	1.42	0.90	-11.69
5,003.0	4.70	106.00	4,969.7	-152.3	413.6	-140.1	1.24	-1.24	0.79
5,092.0	3.30	111.80	5,058.5	-154.3	419.5	-141.9	1.64	-1.57	6.52
5,181.0	2.80	123.20	5,147.3	-156.4	423.7	-143.9	0.88	-0.56	12.81
5,271.0	1.80	128.70	5,237.3	-158.5	426.7	-145.9	1.14	-1.11	6.11
5,360.0	1.40	145.40	5,326.2	-160.3	428.4	-147.7	0.69	-0.45	18.76
5,449.0	0.70	195.80	5,415.2	-161.7	428.8	-149.1	1.23	-0.79	56.63
5,539.0	0.80	233.10	5,505.2	-162.6	428.2	-150.0	0.54	0.11	41.44
5,628.0	1.70	67.00	5,594.2	-162.4	428.9	-149.8	2.79	1.01	-186.63
5,717.0	1.20	34.30	5,683.2	-161.2	430.6	-148.5	1.06	-0.56	-36.74
5,806.0	0.70	339.40	5,772.2	-159.9	431.0	-147.2	1.10	-0.56	-61.69
5,896.0	0.80	344.70	5,862.1	-158.8	430.6	-146.1	0.14	0.11	5.89

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Well:	SRC Kiehn C-4NHZ	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,984.0	0.50	331.90	5,950.1	-157.8	430.3	-145.2	0.38	-0.34	-14.55
6,074.0	0.40	259.10	6,040.1	-157.5	429.8	-144.9	0.60	-0.11	-80.89
6,163.0	0.60	239.20	6,129.1	-157.8	429.1	-145.2	0.29	0.22	-22.36
6,252.0	0.90	221.80	6,218.1	-158.6	428.2	-146.0	0.42	0.34	-19.55
6,341.0	0.60	341.90	6,307.1	-158.7	427.6	-146.1	1.47	-0.34	134.94
6,430.0	4.70	6.30	6,396.0	-154.6	427.8	-142.0	4.68	4.61	27.42
6,519.0	11.70	7.70	6,484.0	-142.0	429.5	-129.4	7.87	7.87	1.57
6,608.0	19.20	7.70	6,569.8	-118.5	432.6	-105.8	8.43	8.43	0.00
6,697.0	27.00	5.60	6,651.6	-83.9	436.6	-71.1	8.81	8.76	-2.36
6,786.0	34.30	4.90	6,728.1	-38.7	440.7	-25.8	8.21	8.20	-0.79
6,875.0	39.70	0.90	6,799.1	14.7	443.3	27.7	6.64	6.07	-4.49
6,964.0	42.40	355.80	6,866.3	73.1	441.5	86.0	4.83	3.03	-5.73
7,053.0	47.90	353.50	6,929.0	135.9	435.6	148.6	6.44	6.18	-2.58
7,142.0	55.60	352.10	6,984.1	205.2	426.8	217.6	8.74	8.65	-1.57
7,232.0	63.80	354.00	7,029.5	282.2	417.5	294.3	9.29	9.11	2.11
7,321.0	79.80	356.60	7,057.2	366.2	410.6	378.1	18.19	17.98	2.92
7,390.0	86.90	355.40	7,065.2	434.6	405.9	446.2	10.43	10.29	-1.74
7,420.0	88.33	355.01	7,066.4	464.4	403.3	476.0	4.96	4.78	-1.31
7"									
7,482.0	91.30	354.20	7,066.6	526.1	397.5	537.5	4.96	4.78	-1.30
7,571.0	90.30	354.20	7,065.4	614.7	388.5	625.8	1.12	-1.12	0.00
7,660.0	89.60	356.10	7,065.4	703.3	381.0	714.2	2.28	-0.79	2.13
7,749.0	89.40	356.80	7,066.2	792.2	375.5	802.8	0.82	-0.22	0.79
7,839.0	88.30	355.20	7,068.0	881.9	369.2	892.3	2.16	-1.22	-1.78
7,928.0	89.30	355.20	7,069.9	970.6	361.8	980.8	1.12	1.12	0.00
8,018.0	89.30	353.80	7,071.0	1,060.2	353.1	1,070.0	1.56	0.00	-1.56
8,106.0	89.30	354.70	7,072.1	1,147.7	344.3	1,157.3	1.02	0.00	1.02
8,196.0	89.40	354.40	7,073.1	1,237.3	335.8	1,246.6	0.35	0.11	-0.33
8,285.0	89.30	355.80	7,074.1	1,326.0	328.2	1,335.0	1.58	-0.11	1.57
8,374.0	89.40	357.20	7,075.1	1,414.8	322.7	1,423.6	1.58	0.11	1.57
8,463.0	91.20	357.50	7,074.6	1,503.7	318.6	1,512.4	2.05	2.02	0.34
8,552.0	90.70	357.20	7,073.2	1,592.6	314.5	1,601.1	0.66	-0.56	-0.34
8,641.0	90.20	357.00	7,072.5	1,681.5	310.0	1,689.8	0.61	-0.56	-0.22
8,731.0	90.70	357.00	7,071.8	1,771.4	305.3	1,779.5	0.56	0.56	0.00
8,820.0	91.10	356.60	7,070.4	1,860.2	300.3	1,868.2	0.64	0.45	-0.45
8,909.0	90.40	357.40	7,069.2	1,949.1	295.7	1,956.9	1.19	-0.79	0.90
8,998.0	90.10	355.80	7,068.8	2,037.9	290.4	2,045.5	1.83	-0.34	-1.80
9,087.0	90.70	356.80	7,068.2	2,126.7	284.7	2,134.1	1.31	0.67	1.12
9,176.0	91.00	358.10	7,066.9	2,215.6	280.7	2,222.9	1.50	0.34	1.46
9,266.0	90.00	356.80	7,066.1	2,305.5	276.7	2,312.6	1.82	-1.11	-1.44
9,355.0	89.50	356.30	7,066.5	2,394.4	271.3	2,401.3	0.79	-0.56	-0.56
9,444.0	89.20	356.30	7,067.5	2,483.2	265.6	2,489.9	0.34	-0.34	0.00
9,533.0	89.00	355.80	7,068.9	2,572.0	259.5	2,578.4	0.61	-0.22	-0.56
9,622.0	88.80	354.90	7,070.6	2,660.6	252.3	2,666.9	1.04	-0.22	-1.01
9,712.0	89.50	355.40	7,071.9	2,750.3	244.6	2,756.3	0.96	0.78	0.56
9,801.0	90.30	357.00	7,072.1	2,839.1	238.7	2,844.9	2.01	0.90	1.80
9,890.0	89.50	355.90	7,072.2	2,927.9	233.2	2,933.5	1.53	-0.90	-1.24
9,979.0	89.20	356.80	7,073.2	3,016.7	227.6	3,022.1	1.07	-0.34	1.01
10,068.0	89.40	356.80	7,074.3	3,105.6	222.6	3,110.8	0.22	0.22	0.00
10,157.0	90.70	355.40	7,074.2	3,194.4	216.5	3,199.4	2.15	1.46	-1.57
10,246.0	90.70	355.90	7,073.2	3,283.1	209.8	3,287.9	0.56	0.00	0.56
10,336.0	91.00	356.10	7,071.8	3,372.9	203.5	3,377.4	0.40	0.33	0.22
10,425.0	91.00	355.20	7,070.3	3,461.6	196.8	3,465.9	1.01	0.00	-1.01
10,514.0	90.60	354.50	7,069.0	3,550.3	188.8	3,554.3	0.91	-0.45	-0.79

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10,603.0	90.10	353.10	7,068.5	3,638.7	179.2	3,642.4	1.67	-0.56	-1.57
10,693.0	89.70	353.00	7,068.6	3,728.1	168.3	3,731.4	0.46	-0.44	-0.11
10,782.0	88.70	352.60	7,069.9	3,816.4	157.1	3,819.3	1.21	-1.12	-0.45
10,871.0	90.20	354.90	7,070.7	3,904.8	147.4	3,907.5	3.09	1.69	2.58
10,959.0	90.70	355.80	7,070.0	3,992.5	140.3	3,994.9	1.17	0.57	1.02
11,047.0	89.90	357.90	7,069.6	4,080.4	135.5	4,082.6	2.55	-0.91	2.39
11,137.0	89.20	358.80	7,070.3	4,170.3	132.9	4,172.4	1.27	-0.78	1.00
11,226.0	89.30	358.10	7,071.5	4,259.3	130.5	4,261.3	0.79	0.11	-0.79
11,315.0	90.10	358.10	7,071.9	4,348.3	127.5	4,350.1	0.90	0.90	0.00
11,339.0	90.50	357.70	7,071.8	4,372.2	126.6	4,374.1	2.36	1.67	-1.67
11,389.0	90.50	357.70	7,071.4	4,422.2	124.6	4,424.0	0.00	0.00	0.00
BHL 470'FNL & 1372'FEL									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,420.0	7,066.4	7"	7	7-1/2

Checked By: _____ Approved By: _____ Date: _____