

Synergy Resources

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

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

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

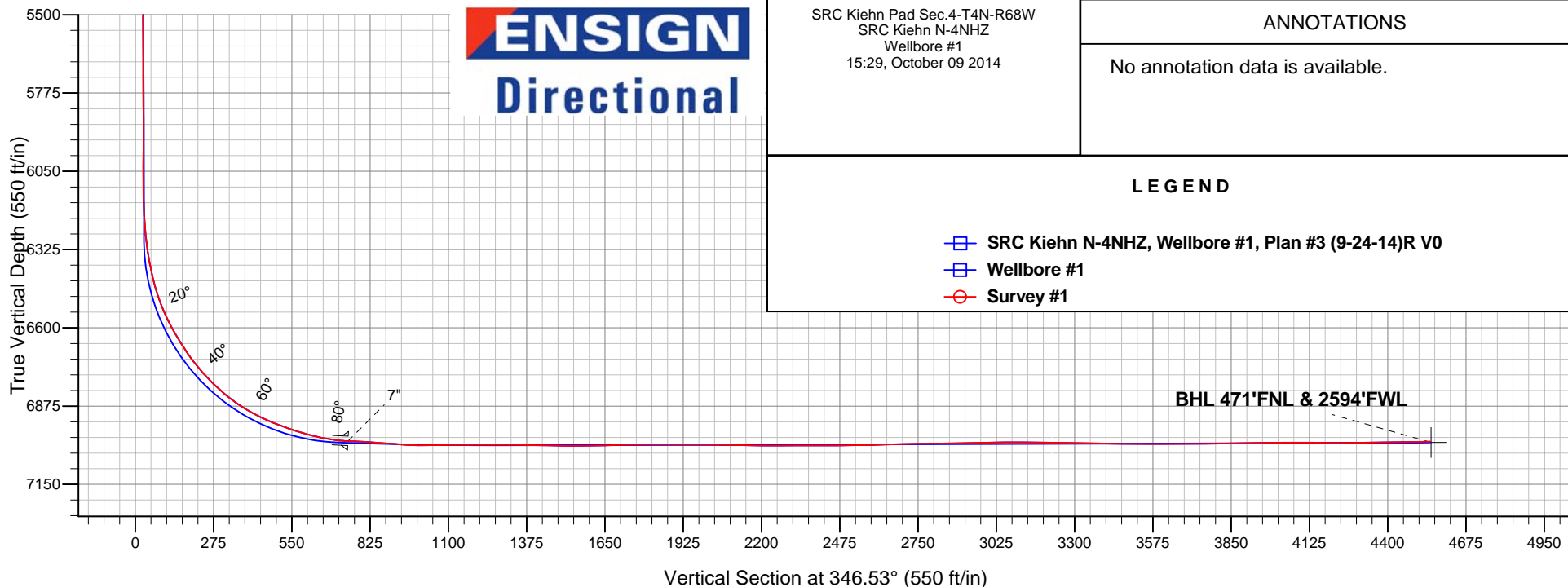
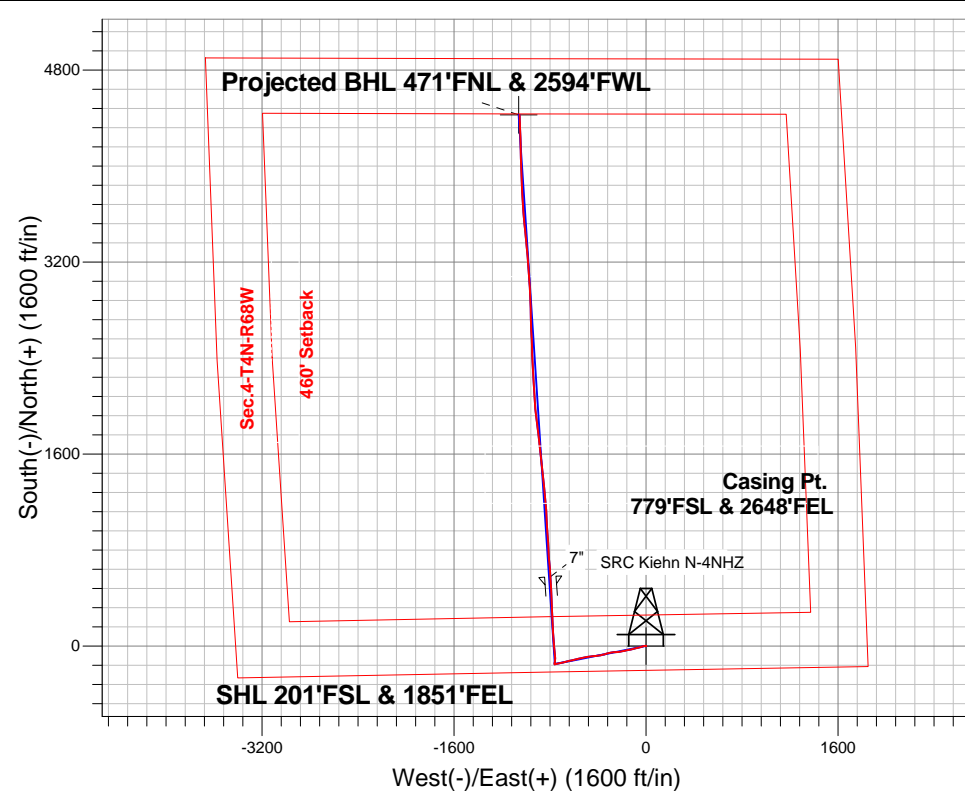
Ground Elevation: 5064.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1365558.81	3137841.64	40.335805	-105.005541	

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

FINAL SURVEY

Projected Bottom Hole Location
11321'MD 7000'TVD 4427'N & 1053'W of
SHL 90.8 degree Incl @ 357.7 degree AZM



SRC Kiehn Pad Sec.4-T4N-R68W
SRC Kiehn N-4NHZ
Wellbore #1
15:29, October 09 2014

ANNOTATIONS

No annotation data is available.

LEGEND

- SRC Kiehn N-4NHZ, Wellbore #1, Plan #3 (9-24-14)R V0
- Wellbore #1
- Survey #1



Synergy Resources

SEC.4-T4N-R68W

SRC Kiehn Pad Sec.4-T4N-R68W

SRC Kiehn N-4NHZ

Wellbore #1

Survey: Survey #1

Standard Survey Report

09 October, 2014

Company:	Synergy Resources	Local Co-ordinate Reference:	Well SRC Kiehn N-4NHZ
Project:	SEC.4-T4N-R68W	TVD Reference:	WELL @ 5077.5ft (Ensign Rig #131 - RKB-13.5')
Site:	SRC Kiehn Pad Sec.4-T4N-R68W	MD Reference:	WELL @ 5077.5ft (Ensign Rig #131 - RKB-13.5')
Well:	SRC Kiehn N-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:	1,365,561.75 ft	Latitude:	40.335811
From:	Lat/Long	Easting:	3,137,974.04 ft	Longitude:	-105.005066
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.32 °

Well	SRC Kiehn N-4NHZ					
Well Position	+N-S	0.0 ft	Northing:	1,365,558.81 ft	Latitude:	40.335805
	+E-W	0.0 ft	Easting:	3,137,841.64 ft	Longitude:	-105.005541
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	9/24/2014	8.55	66.85	52,725

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	346.53	

Survey Program	Date	10/9/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
169.0	11,321.0	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	206.30	1.0	0.0	0.0	0.0	0.53	0.53	0.00
SHL 201'FSL & 1851'FEL									
169.0	0.90	206.30	169.0	-1.2	-0.6	-1.0	0.53	0.53	0.00
264.0	0.40	197.50	264.0	-2.2	-1.0	-1.9	0.54	-0.53	-9.26
358.0	0.40	62.00	358.0	-2.3	-0.8	-2.1	0.79	0.00	-144.15
453.0	0.90	88.90	453.0	-2.2	0.2	-2.2	0.60	0.53	28.32
547.0	0.90	71.30	547.0	-1.9	1.6	-2.2	0.29	0.00	-18.72
635.0	0.90	76.20	635.0	-1.5	3.0	-2.2	0.09	0.00	5.57
730.0	0.50	40.50	730.0	-1.0	4.0	-1.9	0.60	-0.42	-37.58
824.0	0.60	341.00	823.9	-0.3	4.1	-1.2	0.59	0.11	-63.30

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Site:	SRC Kiehn Pad Sec.4-T4N-R68W	MD Reference:	WELL @ 5077.5ft (Ensign Rig #131 - RKB-13.5')
Well:	SRC Kiehn N-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)
919.0	1.20	306.50	918.9	0.8	3.1	0.1	0.82	0.63	-36.32
1,014.0	1.00	264.80	1,013.9	1.3	1.5	0.9	0.85	-0.21	-43.89
1,109.0	1.90	272.60	1,108.9	1.3	-0.9	1.5	0.97	0.95	8.21
1,201.0	1.20	255.90	1,200.9	1.2	-3.4	1.9	0.90	-0.76	-18.15
1,293.0	0.10	69.20	1,292.8	0.9	-4.2	1.9	1.41	-1.20	188.37
1,385.0	4.00	265.50	1,384.8	0.7	-7.4	2.4	4.45	4.24	-177.94
1,477.0	4.90	250.20	1,476.5	-0.9	-14.2	2.5	1.61	0.98	-16.63
1,569.0	5.00	258.70	1,568.2	-3.0	-21.9	2.2	0.80	0.11	9.24
1,661.0	4.80	261.10	1,659.8	-4.4	-29.6	2.7	0.31	-0.22	2.61
1,753.0	6.50	249.50	1,751.4	-6.8	-38.3	2.3	2.22	1.85	-12.61
1,845.0	6.20	253.90	1,842.8	-10.0	-47.9	1.5	0.62	-0.33	4.78
1,938.0	7.30	255.20	1,935.2	-12.9	-58.5	1.1	1.19	1.18	1.40
2,030.0	7.10	256.00	2,026.4	-15.7	-69.7	0.9	0.24	-0.22	0.87
2,122.0	8.80	261.70	2,117.6	-18.1	-82.1	1.5	2.03	1.85	6.20
2,214.0	9.00	251.00	2,208.5	-21.5	-95.9	1.4	1.81	0.22	-11.63
2,306.0	9.80	255.20	2,299.2	-25.8	-110.3	0.6	1.14	0.87	4.57
2,399.0	10.70	261.10	2,390.7	-29.2	-126.5	1.1	1.49	0.97	6.34
2,491.0	10.30	258.20	2,481.2	-32.2	-142.9	2.0	0.72	-0.43	-3.15
2,583.0	11.90	257.80	2,571.5	-35.9	-160.3	2.4	1.74	1.74	-0.43
2,675.0	11.30	255.30	2,661.6	-40.2	-178.3	2.4	0.85	-0.65	-2.72
2,767.0	11.80	259.20	2,751.7	-44.2	-196.2	2.7	1.01	0.54	4.24
2,859.0	11.30	257.80	2,841.9	-47.9	-214.3	3.3	0.62	-0.54	-1.52
2,948.0	10.70	263.30	2,929.2	-50.7	-231.0	4.5	1.36	-0.67	6.18
3,037.0	10.30	267.10	3,016.7	-52.1	-247.2	6.9	0.90	-0.45	4.27
3,126.0	11.10	270.10	3,104.2	-52.5	-263.7	10.4	1.10	0.90	3.37
3,216.0	10.60	265.00	3,192.6	-53.2	-280.6	13.6	1.20	-0.56	-5.67
3,305.0	11.00	254.30	3,280.0	-56.2	-296.9	14.5	2.29	0.45	-12.02
3,394.0	10.50	254.50	3,367.5	-60.6	-312.9	13.9	0.56	-0.56	0.22
3,484.0	11.00	255.30	3,455.9	-65.0	-329.1	13.4	0.58	0.56	0.89
3,573.0	11.00	254.50	3,543.2	-69.4	-345.5	12.9	0.17	0.00	-0.90
3,662.0	10.90	258.00	3,630.6	-73.5	-361.9	12.9	0.76	-0.11	3.93
3,751.0	10.30	257.60	3,718.1	-76.9	-377.9	13.2	0.68	-0.67	-0.45
3,840.0	10.30	260.40	3,805.7	-79.9	-393.5	13.9	0.56	0.00	3.15
3,929.0	11.10	261.10	3,893.1	-82.6	-409.8	15.1	0.91	0.90	0.79
4,019.0	10.70	266.40	3,981.5	-84.5	-426.7	17.3	1.20	-0.44	5.89
4,108.0	11.40	263.80	4,068.9	-85.9	-443.7	19.8	0.97	0.79	-2.92
4,197.0	11.50	266.10	4,156.1	-87.5	-461.3	22.4	0.53	0.11	2.58
4,286.0	10.90	261.70	4,243.4	-89.3	-478.5	24.6	1.17	-0.67	-4.94
4,375.0	11.40	259.90	4,330.7	-92.1	-495.5	25.9	0.68	0.56	-2.02
4,464.0	12.90	257.80	4,417.7	-95.7	-513.9	26.6	1.76	1.69	-2.36
4,553.0	12.40	256.90	4,504.6	-100.0	-532.9	26.9	0.60	-0.56	-1.01
4,642.0	11.60	256.80	4,591.6	-104.2	-550.9	27.0	0.90	-0.90	-0.11
4,731.0	10.40	257.10	4,679.0	-108.0	-567.4	27.1	1.35	-1.35	0.34
4,820.0	9.30	257.50	4,766.7	-111.4	-582.3	27.3	1.24	-1.24	0.45
4,909.0	8.90	256.90	4,854.5	-114.5	-596.0	27.5	0.46	-0.45	-0.67
4,998.0	8.00	257.80	4,942.6	-117.4	-608.8	27.7	1.02	-1.01	1.01
5,088.0	7.70	256.90	5,031.7	-120.0	-620.8	27.8	0.36	-0.33	-1.00
5,177.0	7.50	256.80	5,119.9	-122.7	-632.2	27.9	0.23	-0.22	-0.11
5,266.0	6.50	258.00	5,208.3	-125.1	-642.8	28.1	1.14	-1.12	1.35
5,355.0	8.10	256.00	5,296.6	-127.7	-653.8	28.1	1.82	1.80	-2.25
5,445.0	9.80	256.00	5,385.5	-131.0	-667.4	28.0	1.89	1.89	0.00
5,534.0	9.00	253.90	5,473.3	-134.8	-681.4	27.6	0.98	-0.90	-2.36
5,623.0	9.80	257.80	5,561.1	-138.3	-695.5	27.5	1.15	0.90	4.38

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Well:	SRC Kiehn N-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)
5,713.0	8.90	258.00	5,649.9	-141.4	-709.8	27.8	1.00	-1.00	0.22
5,802.0	8.10	258.50	5,737.9	-144.1	-722.7	28.2	0.90	-0.90	0.56
5,891.0	7.20	256.90	5,826.1	-146.6	-734.3	28.5	1.04	-1.01	-1.80
5,980.0	6.90	257.50	5,914.4	-149.0	-744.9	28.6	0.35	-0.34	0.67
6,069.0	5.50	256.90	6,002.9	-151.1	-754.3	28.7	1.57	-1.57	-0.67
6,158.0	1.60	252.40	6,091.7	-152.5	-759.7	28.6	4.39	-4.38	-5.06
6,247.0	1.90	329.20	6,180.7	-151.6	-761.6	30.0	2.46	0.34	86.29
6,336.0	6.10	7.80	6,269.5	-145.6	-761.7	35.8	5.35	4.72	43.37
6,425.0	11.00	9.80	6,357.4	-132.6	-759.6	48.0	5.51	5.51	2.25
6,514.0	14.90	3.10	6,444.2	-112.8	-757.6	66.8	4.69	4.38	-7.53
6,603.0	22.50	356.40	6,528.4	-84.3	-758.0	94.6	8.86	8.54	-7.53
6,692.0	29.80	354.00	6,608.3	-45.3	-761.4	133.3	8.29	8.20	-2.70
6,781.0	34.00	354.70	6,683.8	1.5	-766.0	179.9	4.74	4.72	0.79
6,870.0	41.80	356.80	6,754.0	56.0	-770.0	233.8	8.88	8.76	2.36
6,960.0	48.60	355.50	6,817.4	119.7	-774.3	296.7	7.62	7.56	-1.44
7,049.0	56.50	357.80	6,871.4	190.2	-778.3	366.2	9.11	8.88	2.58
7,138.0	65.20	358.50	6,914.7	267.8	-780.8	442.3	9.80	9.78	0.79
7,227.0	70.70	357.80	6,948.1	350.2	-783.5	523.0	6.22	6.18	-0.79
7,316.0	74.70	356.80	6,974.6	435.0	-787.5	606.5	4.62	4.49	-1.12
7,406.0	82.10	356.20	6,992.7	523.0	-792.9	693.3	8.25	8.22	-0.67
7,425.0	83.40	355.90	6,995.1	541.8	-794.2	711.9	7.02	6.84	-1.58
7,461.0	86.81	355.90	6,998.2	577.5	-796.8	747.2	9.46	9.46	0.00
7"									
7,481.0	88.70	355.90	6,998.9	597.5	-798.2	767.0	9.46	9.46	0.00
7,570.0	84.90	355.00	7,003.9	686.0	-805.2	854.7	4.39	-4.27	-1.01
7,659.0	86.50	357.30	7,010.6	774.6	-811.2	942.2	3.14	1.80	2.58
7,749.0	90.60	356.60	7,012.9	864.4	-816.0	1,030.7	4.62	4.56	-0.78
7,838.0	90.70	355.90	7,011.9	953.2	-821.8	1,118.4	0.79	0.11	-0.79
7,928.0	90.40	356.90	7,011.0	1,043.0	-827.5	1,207.1	1.16	-0.33	1.11
8,017.0	89.70	356.40	7,010.9	1,131.9	-832.7	1,294.7	0.97	-0.79	-0.56
8,106.0	88.90	354.80	7,012.0	1,220.6	-839.5	1,382.6	2.01	-0.90	-1.80
8,195.0	88.70	354.00	7,013.9	1,309.2	-848.2	1,470.7	0.93	-0.22	-0.90
8,284.0	90.50	354.70	7,014.5	1,397.7	-856.9	1,558.9	2.17	2.02	0.79
8,373.0	91.00	354.80	7,013.3	1,486.3	-865.1	1,646.9	0.57	0.56	0.11
8,462.0	91.70	353.40	7,011.2	1,574.8	-874.2	1,735.1	1.76	0.79	-1.57
8,551.0	90.50	353.30	7,009.5	1,663.2	-884.5	1,823.5	1.35	-1.35	-0.11
8,641.0	89.10	352.60	7,009.8	1,752.5	-895.6	1,912.9	1.74	-1.56	-0.78
8,730.0	89.80	353.10	7,010.7	1,840.8	-906.6	2,001.4	0.97	0.79	0.56
8,819.0	89.30	353.30	7,011.4	1,929.2	-917.2	2,089.8	0.61	-0.56	0.22
8,908.0	88.30	356.20	7,013.2	2,017.8	-925.3	2,177.8	3.45	-1.12	3.26
8,998.0	91.00	357.50	7,013.8	2,107.7	-930.3	2,266.4	3.33	3.00	1.44
9,086.0	89.30	356.10	7,013.6	2,195.5	-935.2	2,353.0	2.50	-1.93	-1.59
9,176.0	91.10	357.30	7,013.2	2,285.4	-940.4	2,441.5	2.40	2.00	1.33
9,265.0	90.00	356.60	7,012.4	2,374.2	-945.1	2,529.1	1.46	-1.24	-0.79
9,354.0	91.40	358.20	7,011.3	2,463.1	-949.1	2,616.5	2.39	1.57	1.80
9,443.0	92.20	357.70	7,008.5	2,552.0	-952.3	2,703.6	1.06	0.90	-0.56
9,532.0	90.00	357.50	7,006.8	2,640.9	-956.0	2,791.0	2.48	-2.47	-0.22
9,622.0	91.40	357.70	7,005.7	2,730.8	-959.8	2,879.3	1.57	1.56	0.22
9,711.0	90.80	358.90	7,004.0	2,819.8	-962.4	2,966.4	1.51	-0.67	1.35
9,800.0	91.00	358.90	7,002.6	2,908.8	-964.2	3,053.3	0.22	0.22	0.00
9,889.0	89.10	355.90	7,002.5	2,997.6	-968.2	3,140.7	3.99	-2.13	-3.37
9,969.3	89.19	355.72	7,003.7	3,077.7	-974.1	3,219.9	0.25	0.11	-0.22

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Well:	SRC Kiehn N-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)
WP #1 (N-4NHZ)									
9,978.0	89.20	355.70	7,003.8	3,086.4	-974.7	3,228.5	0.25	0.11	-0.22
10,067.0	89.20	355.40	7,005.1	3,175.1	-981.6	3,316.4	0.34	0.00	-0.34
10,157.0	89.20	355.00	7,006.3	3,264.8	-989.1	3,405.4	0.44	0.00	-0.44
10,245.0	88.80	355.20	7,007.9	3,352.5	-996.7	3,492.4	0.51	-0.45	0.23
10,335.0	90.70	354.00	7,008.3	3,442.1	-1,005.1	3,581.5	2.50	2.11	-1.33
10,424.0	90.10	354.00	7,007.6	3,530.6	-1,014.4	3,669.7	0.67	-0.67	0.00
10,513.0	90.30	356.60	7,007.3	3,619.3	-1,021.7	3,757.7	2.93	0.22	2.92
10,602.0	91.30	356.20	7,006.1	3,708.1	-1,027.3	3,845.4	1.21	1.12	-0.45
10,692.0	90.40	357.70	7,004.8	3,797.9	-1,032.1	3,933.9	1.94	-1.00	1.67
10,781.0	91.10	357.10	7,003.6	3,886.8	-1,036.1	4,021.3	1.04	0.79	-0.67
10,870.0	89.10	358.20	7,003.4	3,975.8	-1,039.8	4,108.6	2.56	-2.25	1.24
10,958.0	89.80	358.90	7,004.3	4,063.7	-1,042.0	4,194.7	1.12	0.80	0.80
11,047.0	90.30	358.50	7,004.2	4,152.7	-1,044.0	4,281.7	0.72	0.56	-0.45
11,136.0	91.20	358.00	7,003.0	4,241.6	-1,046.7	4,368.8	1.16	1.01	-0.56
11,225.0	90.90	358.90	7,001.4	4,330.6	-1,049.2	4,455.9	1.07	-0.34	1.01
11,271.0	90.80	357.70	7,000.7	4,376.6	-1,050.5	4,500.9	2.62	-0.22	-2.61
11,321.0	90.80	357.70	7,000.0	4,426.5	-1,052.5	4,549.9	0.00	0.00	0.00
BHL 470'FNL & 2586'FWL									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,461.0	6,998.2	7"	7	7-1/2

Checked By: _____ Approved By: _____ Date: _____