

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Stonebraker 28V-404**

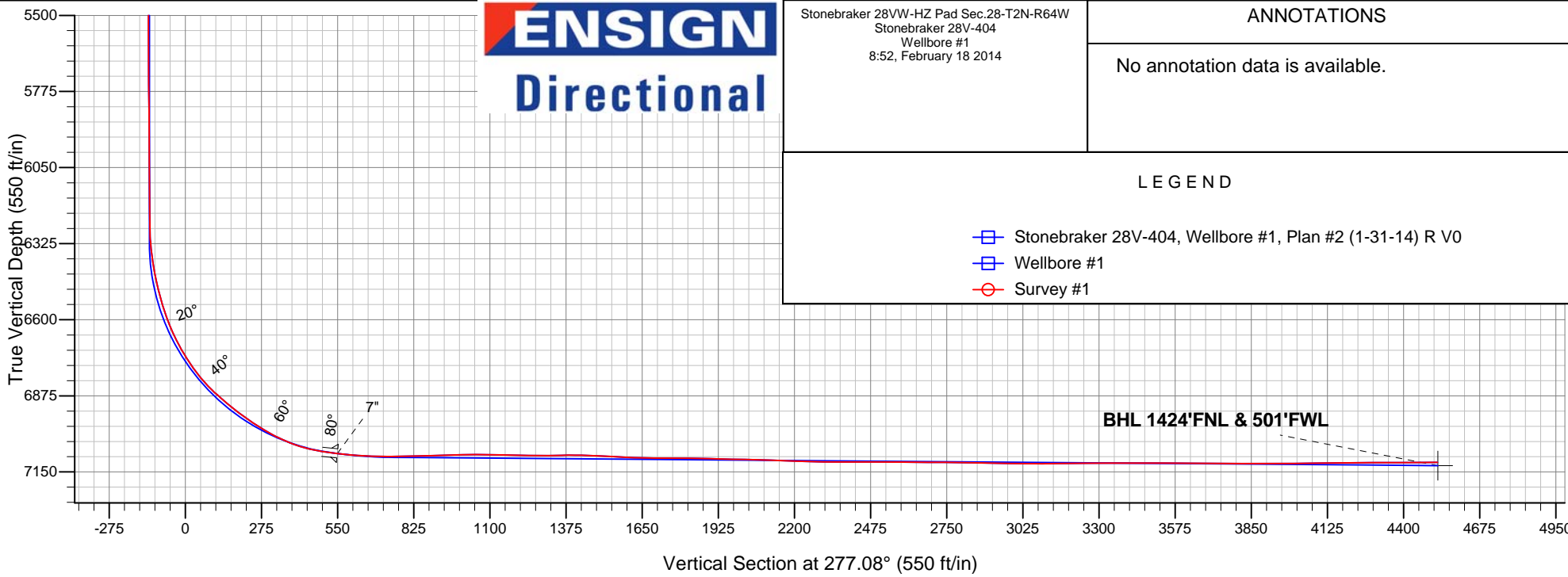
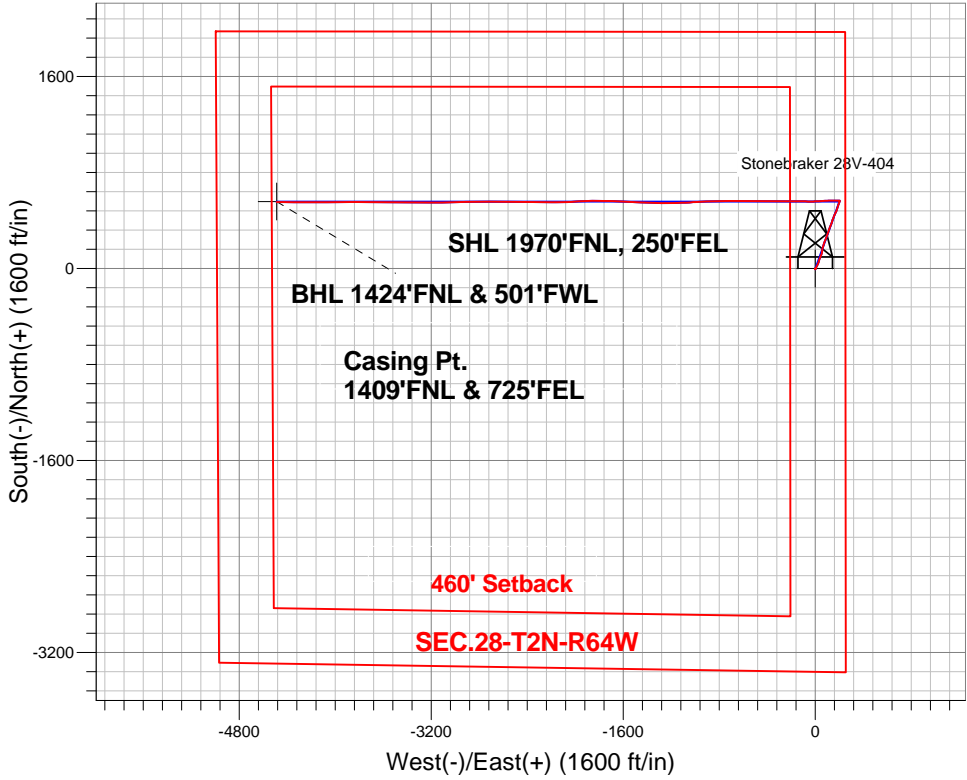
Surface Location: Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4958.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1284821.02	3266355.33	40.111300	-104.547680	
Ensign Rig #136 - RKB - 12.5' WELL @ 4971ft (Ensign Rig #136 - RKB - 13')						

FINAL SURVEY

Projected Bottom Hole Location
11488'MD 7115'TVD 554'N & 4488'W of SHL
90.8 degree Incl @ 271.0 degree AZM



Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W Stonebraker 28V-404 Wellbore #1 8:52, February 18 2014	ANNOTATIONS
	No annotation data is available.
LEGEND	
Stonebraker 28V-404, Wellbore #1, Plan #2 (1-31-14) R V0	
Wellbore #1	
Survey #1	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T2N-R64W

Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W

Stonebraker 28V-404

Wellbore #1

Survey: Survey #1

Standard Survey Report

18 February, 2014

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stonebraker 28V-404
Project:	SEC.28-T2N-R64W	TVD Reference:	WELL @ 4969.5ft (Ensign Rig #136 - RKB - 12.5')
Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4969.5ft (Ensign Rig #136 - RKB - 12.5')
Well:	Stonebraker 28V-404	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.28-T2N-R64W, Weld County, Colorado		
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	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W				
Site Position:		Northing:	1,284,762.75 ft	Latitude:	40.111140
From:	Lat/Long	Easting:	3,266,355.95 ft	Longitude:	-104.547680
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.62 °

Well	Stonebraker 28V-404					
Well Position	+N-S	0.0 ft	Northing:	1,284,821.02 ft	Latitude:	40.111300
	+E-W	0.0 ft	Easting:	3,266,355.33 ft	Longitude:	-104.547680
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,957.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/31/2014	8.37	66.76	52,724

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	277.08	

Survey Program	Date 2/18/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
200.0	11,488.0	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	0.00	137.60	1.0	0.0	0.0	0.0	0.20	0.20	0.00
SHL 1970°FNL, 250°FEL									
200.0	0.40	137.60	200.0	-0.5	0.5	-0.5	0.20	0.20	0.00
293.0	0.40	145.50	293.0	-1.0	0.9	-1.0	0.06	0.00	8.49
383.0	0.40	172.60	383.0	-1.6	1.1	-1.3	0.21	0.00	30.11
524.0	0.40	181.50	524.0	-2.6	1.1	-1.5	0.04	0.00	6.31
565.0	0.50	185.80	565.0	-2.9	1.1	-1.5	0.26	0.24	10.49
656.0	0.60	178.90	656.0	-3.8	1.1	-1.5	0.13	0.11	-7.58
746.0	0.50	200.20	746.0	-4.6	1.0	-1.5	0.25	-0.11	23.67

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Site:	Stonebraker 28VW-HZ Pad Sec.28-T2N-R64W	MD Reference:	WELL @ 4969.5ft (Ensign Rig #136 - RKB - 12.5')
Well:	Stonebraker 28V-404	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)
838.0	0.50	177.50	838.0	-5.4	0.8	-1.5	0.21	0.00	-24.67
929.0	0.80	202.50	929.0	-6.4	0.6	-1.4	0.45	0.33	27.47
1,010.0	0.40	19.80	1,010.0	-6.6	0.5	-1.3	1.48	-0.49	218.89
1,088.0	0.80	8.40	1,088.0	-5.8	0.7	-1.4	0.53	0.51	-14.62
1,179.0	3.30	15.20	1,178.9	-2.7	1.4	-1.8	2.76	2.75	7.47
1,270.0	5.60	24.20	1,269.6	3.9	4.0	-3.4	2.63	2.53	9.89
1,361.0	8.30	31.40	1,359.9	13.6	9.2	-7.5	3.11	2.97	7.91
1,452.0	10.40	27.50	1,449.7	26.5	16.4	-13.0	2.41	2.31	-4.29
1,542.0	11.70	21.40	1,538.1	42.2	23.5	-18.1	1.94	1.44	-6.78
1,634.0	11.20	16.50	1,628.2	59.4	29.4	-21.9	1.19	-0.54	-5.33
1,725.0	9.20	13.30	1,717.8	75.0	33.6	-24.1	2.28	-2.20	-3.52
1,815.0	9.60	23.70	1,806.6	88.8	38.3	-27.0	1.94	0.44	11.56
1,906.0	9.10	24.40	1,896.4	102.3	44.3	-31.4	0.56	-0.55	0.77
1,997.0	9.90	22.60	1,986.1	116.1	50.3	-35.6	0.94	0.88	-1.98
2,088.0	10.80	10.70	2,075.7	131.7	54.9	-38.2	2.54	0.99	-13.08
2,179.0	8.70	7.00	2,165.3	146.9	57.3	-38.8	2.41	-2.31	-4.07
2,274.0	8.70	8.70	2,259.3	161.2	59.3	-38.9	0.27	0.00	1.79
2,369.0	9.20	10.00	2,353.1	175.7	61.7	-39.5	0.57	0.53	1.37
2,464.0	9.80	23.10	2,446.8	190.7	66.2	-42.2	2.36	0.63	13.79
2,559.0	9.50	17.00	2,540.5	205.6	71.6	-45.7	1.12	-0.32	-6.42
2,655.0	10.00	19.80	2,635.1	221.0	76.8	-48.9	0.72	0.52	2.92
2,750.0	9.30	21.70	2,728.7	235.9	82.4	-52.7	0.81	-0.74	2.00
2,845.0	9.40	16.80	2,822.5	250.5	87.5	-55.9	0.84	0.11	-5.16
2,940.0	9.60	24.50	2,916.2	265.1	93.0	-59.6	1.35	0.21	8.11
3,036.0	9.50	19.40	3,010.8	279.9	99.0	-63.7	0.89	-0.10	-5.31
3,131.0	9.90	21.90	3,104.5	294.8	104.6	-67.5	0.61	0.42	2.63
3,226.0	10.00	15.80	3,198.1	310.3	109.9	-70.8	1.11	0.11	-6.42
3,321.0	10.00	20.10	3,291.6	326.0	115.0	-73.9	0.79	0.00	4.53
3,416.0	10.60	20.90	3,385.1	341.9	120.9	-77.8	0.65	0.63	0.84
3,512.0	10.10	24.20	3,479.5	357.9	127.5	-82.4	0.81	-0.52	3.44
3,607.0	10.10	20.10	3,573.1	373.3	133.8	-86.8	0.76	0.00	-4.32
3,702.0	10.20	15.90	3,666.6	389.2	139.0	-89.9	0.79	0.11	-4.42
3,797.0	10.00	20.70	3,760.1	405.0	144.2	-93.2	0.91	-0.21	5.05
3,893.0	8.40	18.20	3,854.9	419.5	149.3	-96.5	1.72	-1.67	-2.60
3,988.0	9.40	20.50	3,948.7	433.3	154.2	-99.6	1.12	1.05	2.42
4,083.0	9.10	27.20	4,042.5	447.3	160.4	-104.0	1.18	-0.32	7.05
4,178.0	9.40	24.50	4,136.2	461.0	167.0	-108.9	0.56	0.32	-2.84
4,273.0	8.80	23.30	4,230.0	474.7	173.1	-113.3	0.66	-0.63	-1.26
4,369.0	8.20	19.60	4,325.0	487.9	178.3	-116.8	0.85	-0.63	-3.85
4,464.0	8.70	18.20	4,419.0	501.2	182.8	-119.6	0.57	0.53	-1.47
4,559.0	8.60	16.10	4,512.9	514.8	187.0	-122.1	0.35	-0.11	-2.21
4,654.0	7.80	20.50	4,606.9	527.7	191.3	-124.8	1.07	-0.84	4.63
4,750.0	6.10	24.90	4,702.2	538.4	195.7	-127.8	1.85	-1.77	4.58
4,845.0	4.20	11.50	4,796.8	546.4	198.5	-129.6	2.35	-2.00	-14.11
4,940.0	2.80	9.60	4,891.6	552.1	199.6	-130.0	1.48	-1.47	-2.00
5,035.0	0.60	18.90	4,986.6	554.8	200.2	-130.2	2.33	-2.32	9.79
5,131.0	1.00	49.70	5,082.6	555.9	201.0	-130.9	0.60	0.42	32.08
5,226.0	1.00	36.50	5,177.6	557.1	202.1	-131.8	0.24	0.00	-13.89
5,321.0	0.80	27.70	5,272.6	558.3	202.9	-132.5	0.26	-0.21	-9.26
5,416.0	0.90	23.10	5,367.5	559.6	203.5	-132.9	0.13	0.11	-4.84
5,512.0	1.00	25.60	5,463.5	561.0	204.1	-133.4	0.11	0.10	2.60

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5,607.0	0.40	319.20	5,558.5	562.0	204.3	-133.4	0.96	-0.63	-69.89	
5,702.0	0.60	346.70	5,653.5	562.8	203.9	-133.0	0.32	0.21	28.95	
5,797.0	1.10	335.30	5,748.5	564.1	203.5	-132.3	0.55	0.53	-12.00	
5,892.0	1.00	334.30	5,843.5	565.7	202.7	-131.4	0.11	-0.11	-1.05	
5,988.0	0.40	241.10	5,939.5	566.2	202.1	-130.7	1.14	-0.63	-97.08	
6,083.0	0.40	250.80	6,034.5	566.0	201.5	-130.1	0.07	0.00	10.21	
6,178.0	0.50	260.60	6,129.5	565.8	200.7	-129.4	0.13	0.11	10.32	
6,273.0	0.40	262.40	6,224.5	565.7	200.0	-128.7	0.11	-0.11	1.89	
6,305.0	0.50	271.70	6,256.5	565.7	199.7	-128.5	0.39	0.31	29.06	
6,337.0	2.20	269.40	6,288.5	565.7	199.0	-127.7	5.31	5.31	-7.19	
6,368.0	4.60	268.50	6,319.4	565.6	197.2	-125.9	7.74	7.74	-2.90	
6,400.0	6.40	268.90	6,351.3	565.6	194.1	-122.9	5.63	5.63	1.25	
6,432.0	8.40	268.70	6,383.0	565.5	190.0	-118.8	6.25	6.25	-0.63	
6,464.0	10.10	268.90	6,414.6	565.4	184.8	-113.7	5.31	5.31	0.63	
6,496.0	11.50	269.20	6,446.0	565.3	178.8	-107.8	4.38	4.38	0.94	
6,527.0	13.10	268.90	6,476.3	565.2	172.2	-101.2	5.17	5.16	-0.97	
6,559.0	14.90	271.50	6,507.3	565.2	164.5	-93.5	5.96	5.63	8.13	
6,591.0	16.60	273.30	6,538.1	565.6	155.8	-84.9	5.53	5.31	5.63	
6,623.0	18.40	271.90	6,568.7	566.0	146.2	-75.3	5.78	5.63	-4.38	
6,654.0	20.30	270.10	6,597.9	566.2	135.9	-65.1	6.42	6.13	-5.81	
6,686.0	22.70	268.50	6,627.7	566.0	124.2	-53.5	7.72	7.50	-5.00	
6,718.0	25.70	266.90	6,656.9	565.5	111.1	-40.5	9.60	9.38	-5.00	
6,750.0	28.30	265.70	6,685.4	564.5	96.6	-26.3	8.30	8.13	-3.75	
6,781.0	30.70	266.10	6,712.4	563.5	81.4	-11.3	7.77	7.74	1.29	
6,813.0	32.90	266.40	6,739.6	562.4	64.6	5.3	6.89	6.88	0.94	
6,845.0	35.00	266.60	6,766.1	561.3	46.7	22.8	6.57	6.56	0.63	
6,877.0	37.50	266.60	6,791.9	560.1	27.8	41.5	7.81	7.81	0.00	
6,909.0	40.80	267.60	6,816.7	559.1	7.7	61.3	10.50	10.31	3.13	
6,939.0	44.20	269.10	6,838.8	558.6	-12.6	81.4	11.83	11.33	5.00	
6,972.0	47.10	270.10	6,861.9	558.4	-36.2	104.8	9.05	8.79	3.03	
7,004.0	48.90	270.60	6,883.3	558.5	-60.0	128.4	5.74	5.63	1.56	
7,036.0	50.00	269.90	6,904.1	558.6	-84.3	152.5	3.82	3.44	-2.19	
7,067.0	52.40	269.90	6,923.5	558.6	-108.4	176.5	7.74	7.74	0.00	
7,099.0	54.30	270.50	6,942.6	558.7	-134.1	202.0	6.13	5.94	1.88	
7,131.0	55.20	271.20	6,961.1	559.1	-160.2	228.0	3.33	2.81	2.19	
7,162.0	56.50	271.00	6,978.5	559.6	-185.9	253.5	4.23	4.19	-0.65	
7,194.0	58.80	270.10	6,995.6	559.8	-212.9	280.3	7.57	7.19	-2.81	
7,226.0	61.70	269.90	7,011.5	559.8	-240.7	307.9	9.08	9.06	-0.63	
7,258.0	64.40	270.10	7,026.0	559.8	-269.2	336.2	8.46	8.44	0.63	
7,289.0	66.50	270.30	7,038.9	559.9	-297.4	364.2	6.80	6.77	0.65	
7,321.0	70.10	270.10	7,050.7	560.0	-327.2	393.7	11.26	11.25	-0.63	
7,353.0	73.80	269.90	7,060.6	560.0	-357.6	423.9	11.58	11.56	-0.63	
7,385.0	77.40	270.50	7,068.6	560.1	-388.6	454.7	11.40	11.25	1.88	
7,395.0	78.90	270.60	7,070.6	560.2	-398.3	464.4	15.03	15.00	1.00	
7,473.0	83.60	270.60	7,082.5	561.0	-475.4	541.0	6.03	6.03	0.00	
7,496.0	84.10	270.50	7,085.0	561.3	-498.3	563.7	2.22	2.17	-0.43	
7,557.0	85.70	270.60	7,090.4	561.8	-559.0	624.0	2.63	2.62	0.16	
7,647.0	89.80	270.80	7,093.9	562.9	-648.9	713.4	4.56	4.56	0.22	
7,738.0	91.10	269.60	7,093.2	563.3	-739.9	803.7	1.94	1.43	-1.32	
7,829.0	91.50	267.10	7,091.1	560.6	-830.9	893.6	2.78	0.44	-2.75	
7,920.0	92.20	268.20	7,088.2	556.9	-921.7	983.4	1.43	0.77	1.21	
8,016.0	88.40	266.20	7,087.7	552.2	-1,017.6	1,077.9	4.47	-3.96	-2.08	

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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)
8,110.0	89.30	268.40	7,089.6	547.8	-1,111.5	1,170.5	2.53	0.96	2.34
8,206.0	89.90	268.50	7,090.3	545.2	-1,207.4	1,265.4	0.63	0.63	0.10
8,301.0	90.80	270.80	7,089.7	544.6	-1,302.4	1,359.6	2.60	0.95	2.42
8,396.0	88.20	272.60	7,090.5	547.4	-1,397.4	1,454.2	3.33	-2.74	1.89
8,491.0	86.60	272.40	7,094.8	551.6	-1,492.2	1,548.8	1.70	-1.68	-0.21
8,586.0	88.40	273.30	7,099.0	556.3	-1,587.0	1,643.4	2.12	1.89	0.95
8,682.0	90.10	273.10	7,100.2	561.7	-1,682.8	1,739.2	1.78	1.77	-0.21
8,777.0	89.30	269.90	7,100.7	564.1	-1,777.7	1,833.7	3.47	-0.84	-3.37
8,872.0	88.10	267.60	7,102.9	562.1	-1,872.7	1,927.7	2.73	-1.26	-2.42
8,967.0	89.40	266.90	7,104.9	557.5	-1,967.6	2,021.3	1.55	1.37	-0.74
9,062.0	87.40	268.50	7,107.6	553.7	-2,062.4	2,115.0	2.70	-2.11	1.68
9,158.0	88.20	269.20	7,111.3	551.8	-2,158.3	2,209.9	1.11	0.83	0.73
9,253.0	89.10	270.50	7,113.5	551.5	-2,253.3	2,304.1	1.66	0.95	1.37
9,348.0	90.40	271.00	7,113.9	552.8	-2,348.3	2,398.5	1.47	1.37	0.53
9,443.0	89.70	271.30	7,113.8	554.7	-2,443.3	2,493.0	0.80	-0.74	0.32
9,539.0	89.80	270.30	7,114.3	556.0	-2,539.3	2,588.5	1.05	0.10	-1.04
9,634.0	89.30	270.10	7,115.0	556.4	-2,634.3	2,682.8	0.57	-0.53	-0.21
9,729.0	89.90	270.10	7,115.7	556.5	-2,729.3	2,777.1	0.63	0.63	0.00
9,824.0	88.40	269.40	7,117.1	556.1	-2,824.3	2,871.3	1.74	-1.58	-0.74
9,920.0	88.90	268.50	7,119.3	554.3	-2,920.2	2,966.3	1.07	0.52	-0.94
10,015.0	90.40	268.70	7,119.9	552.0	-3,015.2	3,060.2	1.59	1.58	0.21
10,110.0	90.30	269.20	7,119.3	550.3	-3,110.2	3,154.3	0.54	-0.11	0.53
10,205.0	90.60	269.60	7,118.6	549.3	-3,205.1	3,248.4	0.53	0.32	0.42
10,301.0	90.00	270.60	7,118.1	549.5	-3,301.1	3,343.7	1.21	-0.63	1.04
10,396.0	90.40	270.60	7,117.8	550.4	-3,396.1	3,438.1	0.42	0.42	0.00
10,491.0	89.80	270.60	7,117.6	551.4	-3,491.1	3,532.5	0.63	-0.63	0.00
10,586.0	89.40	270.80	7,118.3	552.6	-3,586.1	3,626.9	0.47	-0.42	0.21
10,682.0	89.40	269.80	7,119.3	553.1	-3,682.1	3,722.2	1.04	0.00	-1.04
10,777.0	89.70	269.80	7,120.0	552.8	-3,777.1	3,816.4	0.32	0.32	0.00
10,872.0	90.20	269.60	7,120.1	552.3	-3,872.1	3,910.7	0.57	0.53	-0.21
10,967.0	91.00	269.40	7,119.1	551.4	-3,967.1	4,004.8	0.87	0.84	-0.21
11,063.0	90.30	270.10	7,118.0	551.0	-4,063.1	4,100.0	1.03	-0.73	0.73
11,158.0	90.80	270.10	7,117.1	551.2	-4,158.1	4,194.3	0.53	0.53	0.00
11,253.0	90.00	269.80	7,116.4	551.1	-4,253.1	4,288.6	0.90	-0.84	-0.32
11,348.0	90.00	270.60	7,116.4	551.4	-4,348.1	4,382.9	0.84	0.00	0.84
11,431.0	90.80	271.00	7,115.9	552.6	-4,431.1	4,465.4	1.08	0.96	0.48
11,488.0	90.80	271.00	7,115.1	553.6	-4,488.1	4,522.1	0.00	0.00	0.00
BHL 1420'FNL & 500'FWL									

Checked By: _____	Approved By: _____	Date: _____
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