

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **LaSalle 25F-332**

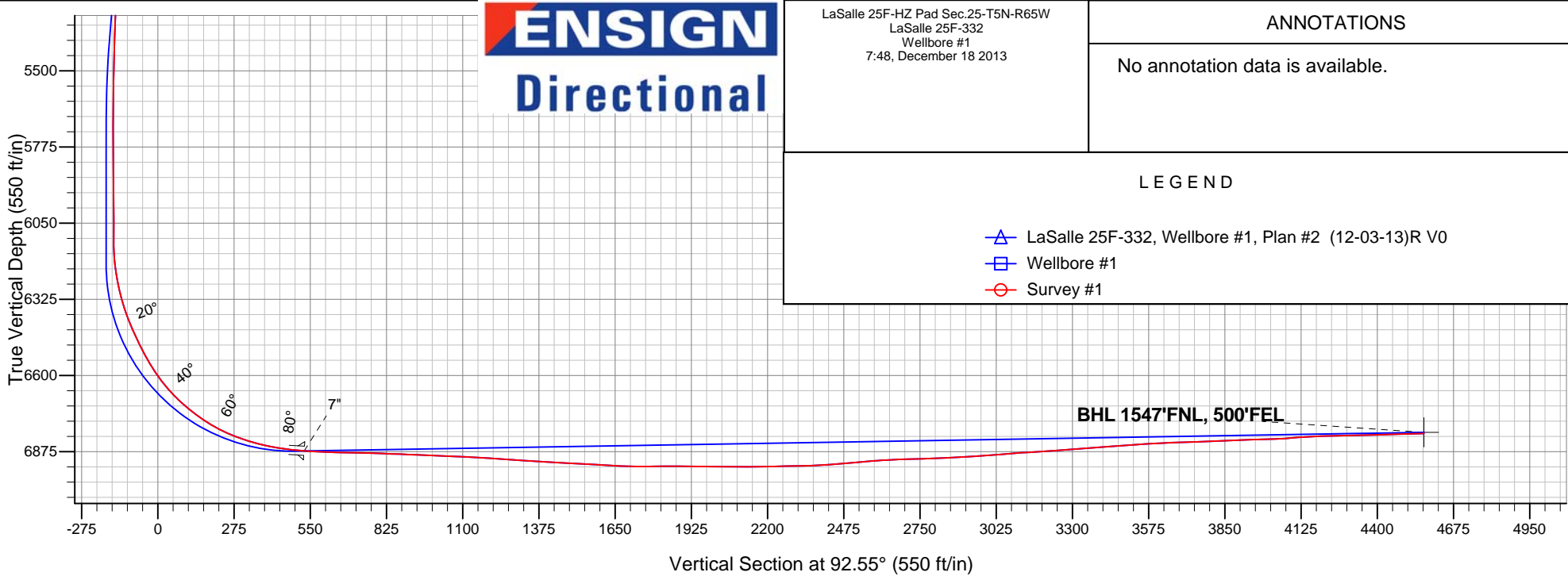
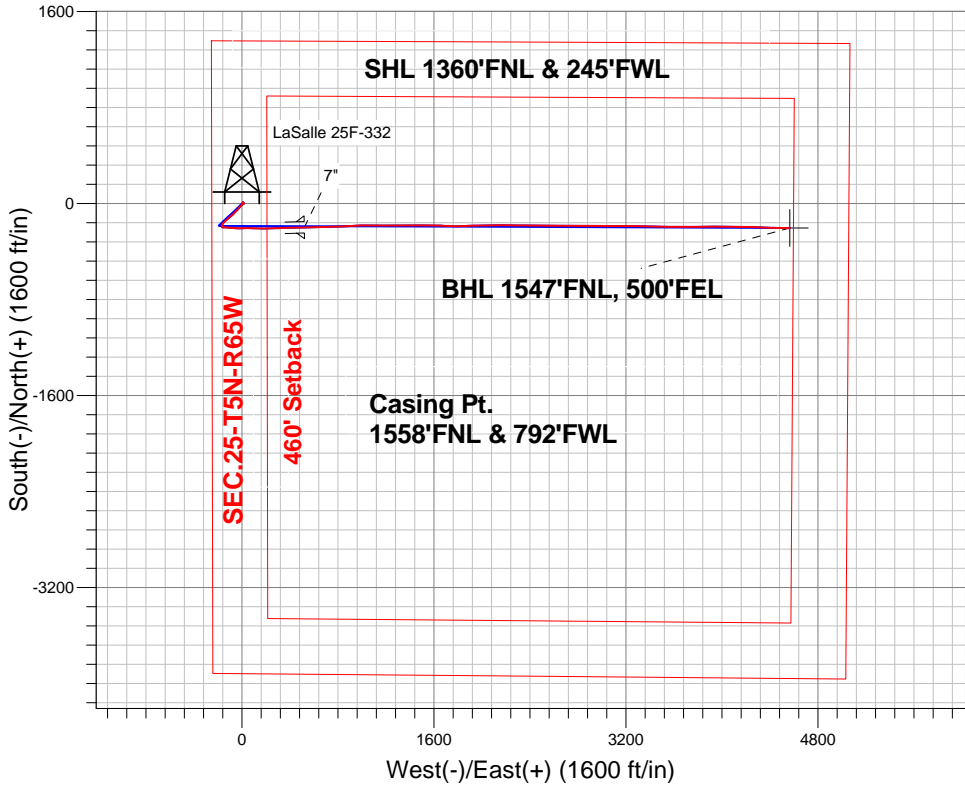
Surface Location: LaSalle 25F-HZ Pad Sec.25-T5N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4640.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1380202.80	3245132.74	40.373720	-104.620170	
RKB - 15' WELL @ 4655.0ft (RKB - 15')						

FINAL SURVEY

Projected Bottom Hole Location
11314'MD 6810'TVD 205'S & 4564'E of SHL
91.0 degree Incl @ 91.6 degree AZM



LaSalle 25F-HZ Pad Sec.25-T5N-R65W
LaSalle 25F-332
Wellbore #1
7:48, December 18 2013

ANNOTATIONS

No annotation data is available.

LEGEND

- LaSalle 25F-332, Wellbore #1, Plan #2 (12-03-13)R V0
- Wellbore #1
- Survey #1



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.25-T5N-R65W

LaSalle 25F-HZ Pad Sec.25-T5N-R65W

LaSalle 25F-332

Wellbore #1

Survey: Survey #1

Standard Survey Report

18 December, 2013

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LaSalle 25F-332
Project:	SEC.25-T5N-R65W	TVD Reference:	WELL @ 4655.0ft (RKB - 15')
Site:	LaSalle 25F-HZ Pad Sec.25-T5N-R65W	MD Reference:	WELL @ 4655.0ft (RKB - 15')
Well:	LaSalle 25F-332	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.25-T5N-R65W, 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		LaSalle 25F-HZ Pad Sec.25-T5N-R65W			
Site Position:		Northing:	1,380,231.95 ft	Latitude:	40.373800
From:	Lat/Long	Easting:	3,245,132.45 ft	Longitude:	-104.620170
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.57 °

Well	LaSalle 25F-332					
Well Position	+N-S	0.0 ft	Northing:	1,380,202.80 ft	Latitude:	40.373720
	+E-W	0.0 ft	Easting:	3,245,132.74 ft	Longitude:	-104.620170
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,640.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/16/2013	8.45	66.97	52,870

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	92.55	

Survey Program	Date	12/18/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
122.0	11,314.0	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	
122.0	0.20	110.50	122.0	-0.1	0.2	0.2	0.16	0.16	0.00	
216.0	0.40	66.60	216.0	0.0	0.7	0.7	0.31	0.21	-46.70	
342.0	0.40	97.50	342.0	0.1	1.5	1.5	0.17	0.00	24.52	
469.0	0.10	154.30	469.0	0.0	2.0	2.0	0.28	-0.24	44.72	
596.0	0.40	59.20	596.0	0.1	2.4	2.4	0.33	0.24	-74.88	
722.0	0.80	74.00	722.0	0.6	3.6	3.6	0.34	0.32	11.75	
847.0	0.90	91.90	847.0	0.8	5.5	5.4	0.23	0.08	14.32	
909.0	1.30	73.60	909.0	0.9	6.6	6.6	0.85	0.65	-29.52	
976.0	0.70	0.00	976.0	1.6	7.3	7.3	1.93	-0.90	-109.85	
1,102.0	0.70	15.70	1,101.9	3.1	7.6	7.4	0.15	0.00	12.46	
1,259.0	0.80	20.40	1,258.9	5.0	8.2	8.0	0.07	0.06	2.99	

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Site:	LaSalle 25F-HZ Pad Sec.25-T5N-R65W	MD Reference:	WELL @ 4655.0ft (RKB - 15')
Well:	LaSalle 25F-332	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)
1,413.0	0.60	3.70	1,412.9	6.8	8.6	8.3	0.18	-0.13	-10.84
1,565.0	0.70	327.30	1,564.9	8.4	8.2	7.8	0.27	0.07	-23.95
1,718.0	0.50	333.50	1,717.9	9.8	7.4	6.9	0.14	-0.13	4.05
1,870.0	0.70	150.70	1,869.9	9.6	7.5	7.1	0.79	0.13	116.58
2,022.0	1.50	132.00	2,021.9	7.4	9.5	9.1	0.57	0.53	-12.30
2,174.0	0.80	110.90	2,173.8	5.7	11.9	11.7	0.53	-0.46	-13.88
2,327.0	0.90	139.40	2,326.8	4.4	13.7	13.5	0.28	0.07	18.63
2,479.0	0.90	165.60	2,478.8	2.4	14.8	14.7	0.27	0.00	17.24
2,637.0	1.00	152.60	2,636.8	0.0	15.7	15.7	0.15	0.06	-8.23
2,796.0	0.50	277.00	2,795.8	-1.2	15.7	15.7	0.85	-0.31	78.24
2,955.0	2.10	246.10	2,954.7	-2.3	12.3	12.4	1.06	1.01	-19.43
3,113.0	3.00	234.50	3,112.6	-5.9	6.3	6.6	0.65	0.57	-7.34
3,272.0	4.00	229.90	3,271.3	-11.9	-1.3	-0.8	0.65	0.63	-2.89
3,430.0	5.50	220.80	3,428.7	-21.1	-10.5	-9.5	1.06	0.95	-5.76
3,589.0	6.20	222.00	3,586.9	-33.3	-21.2	-19.7	0.45	0.44	0.75
3,748.0	7.30	226.20	3,744.8	-46.7	-34.2	-32.1	0.76	0.69	2.64
3,938.0	8.10	223.30	3,933.1	-64.8	-52.1	-49.2	0.47	0.42	-1.53
4,096.0	6.00	221.70	4,089.9	-79.0	-65.3	-61.7	1.33	-1.33	-1.01
4,255.0	6.60	228.00	4,247.9	-91.3	-77.6	-73.4	0.58	0.38	3.96
4,414.0	7.30	227.80	4,405.8	-104.2	-91.9	-87.1	0.44	0.44	-0.13
4,573.0	7.10	229.90	4,563.5	-117.4	-106.9	-101.5	0.21	-0.13	1.32
4,763.0	5.80	229.40	4,752.3	-131.2	-123.1	-117.2	0.68	-0.68	-0.26
4,922.0	6.00	229.40	4,910.4	-141.8	-135.5	-129.1	0.13	0.13	0.00
5,080.0	6.30	228.90	5,067.5	-152.9	-148.3	-141.4	0.19	0.19	-0.32
5,239.0	4.00	217.80	5,225.9	-163.0	-158.3	-150.9	1.57	-1.45	-6.98
5,398.0	3.20	212.00	5,384.6	-171.1	-164.1	-156.3	0.55	-0.50	-3.65
5,557.0	2.80	202.70	5,543.4	-178.5	-167.9	-159.8	0.40	-0.25	-5.85
5,716.0	2.10	182.50	5,702.2	-185.0	-169.5	-161.1	0.69	-0.44	-12.70
5,874.0	2.00	170.70	5,860.1	-190.6	-169.2	-160.6	0.27	-0.06	-7.47
6,001.0	1.70	163.10	5,987.0	-194.6	-168.3	-159.5	0.30	-0.24	-5.98
6,096.0	0.50	212.50	6,082.0	-196.3	-168.1	-159.2	1.50	-1.26	52.00
6,128.0	0.80	185.60	6,114.0	-196.6	-168.2	-159.3	1.31	0.94	-84.06
6,159.0	1.90	111.10	6,145.0	-197.0	-167.8	-158.8	5.98	3.55	-240.32
6,191.0	4.70	92.80	6,177.0	-197.3	-166.0	-157.0	9.24	8.75	-57.19
6,223.0	7.30	91.90	6,208.8	-197.4	-162.6	-153.7	8.13	8.13	-2.81
6,254.0	9.60	93.90	6,239.4	-197.6	-158.1	-149.1	7.48	7.42	6.45
6,286.0	11.40	94.90	6,270.9	-198.1	-152.3	-143.3	5.65	5.63	3.13
6,318.0	13.90	94.20	6,302.1	-198.7	-145.3	-136.3	7.83	7.81	-2.19
6,349.0	16.00	94.40	6,332.1	-199.3	-137.3	-128.3	6.78	6.77	0.65
6,381.0	18.50	93.70	6,362.6	-199.9	-127.8	-118.8	7.84	7.81	-2.19
6,413.0	20.70	93.70	6,392.8	-200.6	-117.1	-108.1	6.88	6.88	0.00
6,445.0	22.70	94.90	6,422.5	-201.5	-105.3	-96.2	6.40	6.25	3.75
6,476.0	24.80	94.90	6,450.9	-202.6	-92.9	-83.8	6.77	6.77	0.00
6,508.0	26.00	95.50	6,479.8	-203.8	-79.2	-70.1	3.84	3.75	1.88
6,540.0	27.30	94.60	6,508.4	-205.1	-64.9	-55.7	4.25	4.06	-2.81
6,571.0	29.10	92.80	6,535.7	-206.0	-50.3	-41.1	6.42	5.81	-5.81
6,603.0	31.40	90.40	6,563.4	-206.5	-34.2	-25.0	8.12	7.19	-7.50
6,635.0	33.90	89.30	6,590.3	-206.4	-16.9	-7.7	8.03	7.81	-3.44
6,666.0	36.80	88.40	6,615.6	-206.0	1.0	10.2	9.50	9.35	-2.90
6,699.0	40.20	89.00	6,641.4	-205.6	21.5	30.7	10.36	10.30	1.82
6,730.0	43.40	89.80	6,664.5	-205.4	42.2	51.3	10.46	10.32	2.58
6,762.0	46.60	90.20	6,687.1	-205.4	64.8	73.9	10.04	10.00	1.25
6,794.0	49.20	91.80	6,708.6	-205.8	88.5	97.6	8.93	8.13	5.00

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Design:	Wellbore #1	Database:	Landmark

Survey									
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6,826.0	51.90	92.30	6,728.9	-206.7	113.2	122.3	8.52	8.44	1.56
6,857.0	53.80	92.10	6,747.6	-207.6	137.9	147.0	6.15	6.13	-0.65
6,889.0	56.70	90.40	6,765.9	-208.2	164.2	173.3	10.06	9.06	-5.31
6,921.0	60.10	88.60	6,782.6	-207.9	191.5	200.5	11.65	10.63	-5.63
6,953.0	63.90	88.40	6,797.7	-207.2	219.7	228.7	11.89	11.88	-0.63
6,985.0	67.20	88.10	6,810.9	-206.3	248.8	257.8	10.35	10.31	-0.94
7,017.0	69.60	88.10	6,822.7	-205.3	278.5	287.4	7.50	7.50	0.00
7,049.0	72.20	87.90	6,833.2	-204.3	308.8	317.6	8.15	8.13	-0.63
7,081.0	74.60	87.90	6,842.3	-203.1	339.4	348.1	7.50	7.50	0.00
7,112.0	76.50	88.60	6,850.0	-202.2	369.4	378.1	6.51	6.13	2.26
7,144.0	78.40	89.00	6,857.0	-201.6	400.6	409.2	6.06	5.94	1.25
7,176.0	80.70	89.10	6,862.8	-201.1	432.1	440.6	7.19	7.19	0.31
7,208.0	83.60	88.30	6,867.2	-200.3	463.8	472.3	9.39	9.06	-2.50
7,264.0	86.07	88.83	6,872.2	-198.9	519.5	527.9	4.51	4.40	0.95
7"									
7,292.0	87.30	89.10	6,873.8	-198.4	547.5	555.8	4.51	4.41	0.95
7,324.0	87.70	89.30	6,875.2	-198.0	579.5	587.7	1.40	1.25	0.63
7,355.0	88.20	89.10	6,876.3	-197.6	610.4	618.6	1.74	1.61	-0.65
7,387.0	88.50	88.60	6,877.2	-196.9	642.4	650.5	1.82	0.94	-1.56
7,419.0	88.90	88.30	6,878.0	-196.1	674.4	682.5	1.56	1.25	-0.94
7,451.0	88.60	88.30	6,878.7	-195.1	706.4	714.4	0.94	-0.94	0.00
7,482.0	87.60	88.30	6,879.7	-194.2	737.3	745.3	3.23	-3.23	0.00
7,514.0	87.70	88.30	6,881.0	-193.2	769.3	777.1	0.31	0.31	0.00
7,546.0	88.40	88.30	6,882.1	-192.3	801.3	809.0	2.19	2.19	0.00
7,578.0	88.50	87.20	6,883.0	-191.0	833.2	840.9	3.45	0.31	-3.44
7,610.0	87.90	87.00	6,884.0	-189.4	865.2	872.8	1.98	-1.88	-0.63
7,641.0	87.80	86.10	6,885.1	-187.5	896.1	903.6	2.92	-0.32	-2.90
7,673.0	87.80	86.50	6,886.4	-185.5	928.0	935.3	1.25	0.00	1.25
7,705.0	87.70	87.40	6,887.6	-183.8	959.9	967.2	2.83	-0.31	2.81
7,737.0	87.50	88.60	6,889.0	-182.7	991.9	999.0	3.80	-0.63	3.75
7,768.0	87.10	89.80	6,890.4	-182.2	1,022.8	1,030.0	4.08	-1.29	3.87
7,800.0	87.60	90.40	6,891.9	-182.3	1,054.8	1,061.9	2.44	1.56	1.88
7,832.0	87.60	90.50	6,893.2	-182.5	1,086.8	1,093.8	0.31	0.00	0.31
7,864.0	87.20	90.70	6,894.7	-182.9	1,118.7	1,125.8	1.40	-1.25	0.63
7,895.0	87.50	91.10	6,896.1	-183.4	1,149.7	1,156.7	1.61	0.97	1.29
7,927.0	86.00	90.50	6,897.9	-183.8	1,181.7	1,188.7	5.05	-4.69	-1.88
7,959.0	86.10	89.70	6,900.1	-183.9	1,213.6	1,220.6	2.51	0.31	-2.50
7,990.0	85.90	89.30	6,902.3	-183.6	1,244.5	1,251.4	1.44	-0.65	-1.29
8,021.0	86.10	89.70	6,904.5	-183.3	1,275.4	1,282.3	1.44	0.65	1.29
8,053.0	86.40	89.50	6,906.6	-183.1	1,307.4	1,314.2	1.13	0.94	-0.63
8,085.0	87.00	90.00	6,908.4	-183.0	1,339.3	1,346.1	2.44	1.88	1.56
8,117.0	86.20	89.70	6,910.3	-182.9	1,371.2	1,378.0	2.67	-2.50	-0.94
8,148.0	86.20	89.80	6,912.4	-182.7	1,402.2	1,408.9	0.32	0.00	0.32
8,180.0	86.50	89.70	6,914.4	-182.6	1,434.1	1,440.8	0.99	0.94	-0.31
8,212.0	87.10	89.30	6,916.2	-182.3	1,466.1	1,472.7	2.25	1.88	-1.25
8,244.0	87.50	90.20	6,917.7	-182.2	1,498.0	1,504.7	3.07	1.25	2.81
8,276.0	87.00	90.20	6,919.2	-182.3	1,530.0	1,536.6	1.56	-1.56	0.00
8,307.0	86.60	91.10	6,921.0	-182.6	1,560.9	1,567.5	3.17	-1.29	2.90
8,338.0	86.40	91.20	6,922.8	-183.3	1,591.9	1,598.5	0.72	-0.65	0.32
8,370.0	86.70	91.80	6,924.8	-184.1	1,623.8	1,630.4	2.09	0.94	1.88
8,402.0	87.20	91.20	6,926.5	-184.9	1,655.7	1,662.3	2.44	1.56	-1.88
8,433.0	88.20	91.40	6,927.7	-185.6	1,686.7	1,693.3	3.29	3.23	0.65
8,465.0	89.10	91.40	6,928.5	-186.4	1,718.7	1,725.3	2.81	2.81	0.00

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8,497.0	90.50	91.90	6,928.6	-187.3	1,750.7	1,757.3	4.65	4.38	1.56
8,528.0	90.90	92.10	6,928.2	-188.4	1,781.7	1,788.3	1.44	1.29	0.65
8,560.0	90.80	89.10	6,927.7	-188.8	1,813.7	1,820.3	9.38	-0.31	-9.38
8,592.0	90.00	87.40	6,927.5	-187.8	1,845.6	1,852.2	5.87	-2.50	-5.31
8,623.0	89.30	86.80	6,927.7	-186.2	1,876.6	1,883.0	2.97	-2.26	-1.94
8,655.0	89.00	88.10	6,928.2	-184.8	1,908.6	1,914.9	4.17	-0.94	4.06
8,687.0	89.30	88.80	6,928.6	-183.9	1,940.5	1,946.8	2.38	0.94	2.19
8,719.0	89.90	89.10	6,928.9	-183.3	1,972.5	1,978.7	2.10	1.88	0.94
8,750.0	90.40	89.00	6,928.8	-182.8	2,003.5	2,009.7	1.64	1.61	-0.32
8,782.0	89.70	88.40	6,928.8	-182.1	2,035.5	2,041.6	2.88	-2.19	-1.88
8,814.0	89.50	89.10	6,929.0	-181.4	2,067.5	2,073.5	2.27	-0.63	2.19
8,845.0	89.30	90.00	6,929.3	-181.2	2,098.5	2,104.5	2.97	-0.65	2.90
8,877.0	89.60	89.80	6,929.6	-181.1	2,130.5	2,136.5	1.13	0.94	-0.63
8,909.0	90.60	89.70	6,929.6	-181.0	2,162.5	2,168.4	3.14	3.13	-0.31
8,940.0	91.40	90.20	6,929.0	-180.9	2,193.5	2,199.4	3.04	2.58	1.61
8,972.0	91.70	90.70	6,928.2	-181.2	2,225.5	2,231.4	1.82	0.94	1.56
9,004.0	91.50	90.70	6,927.3	-181.6	2,257.5	2,263.3	0.63	-0.63	0.00
9,036.0	91.00	90.70	6,926.6	-182.0	2,289.5	2,295.3	1.56	-1.56	0.00
9,068.0	91.30	90.50	6,925.9	-182.3	2,321.5	2,327.3	1.13	0.94	-0.63
9,100.0	92.40	90.40	6,924.9	-182.6	2,353.4	2,359.2	3.45	3.44	-0.31
9,131.0	92.30	90.90	6,923.6	-182.9	2,384.4	2,390.2	1.64	-0.32	1.61
9,163.0	93.50	90.50	6,922.0	-183.3	2,416.4	2,422.1	3.95	3.75	-1.25
9,195.0	95.00	90.90	6,919.6	-183.7	2,448.3	2,454.0	4.85	4.69	1.25
9,226.0	95.10	91.10	6,916.9	-184.2	2,479.1	2,484.9	0.72	0.32	0.65
9,258.0	95.30	90.90	6,914.0	-184.8	2,511.0	2,516.8	0.88	0.63	-0.63
9,290.0	95.40	90.40	6,911.0	-185.1	2,542.9	2,548.6	1.59	0.31	-1.56
9,321.0	94.40	90.00	6,908.4	-185.3	2,573.8	2,579.5	3.47	-3.23	-1.29
9,353.0	92.90	89.80	6,906.3	-185.2	2,605.7	2,611.4	4.73	-4.69	-0.63
9,385.0	92.80	89.30	6,904.7	-184.9	2,637.7	2,643.3	1.59	-0.31	-1.56
9,416.0	92.80	90.00	6,903.2	-184.8	2,668.6	2,674.2	2.26	0.00	2.26
9,448.0	91.80	90.50	6,901.9	-184.9	2,700.6	2,706.1	3.49	-3.13	1.56
9,479.0	91.00	90.20	6,901.2	-185.1	2,731.6	2,737.1	2.76	-2.58	-0.97
9,511.0	91.50	89.70	6,900.5	-185.1	2,763.6	2,769.1	2.21	1.56	-1.56
9,543.0	92.40	89.80	6,899.4	-184.9	2,795.5	2,801.0	2.83	2.81	0.31
9,575.0	92.60	90.90	6,898.0	-185.1	2,827.5	2,833.0	3.49	0.63	3.44
9,606.0	92.70	90.70	6,896.6	-185.5	2,858.5	2,863.9	0.72	0.32	-0.65
9,638.0	92.90	90.00	6,895.0	-185.7	2,890.4	2,895.8	2.27	0.63	-2.19
9,670.0	93.70	90.00	6,893.2	-185.7	2,922.4	2,927.8	2.50	2.50	0.00
9,701.0	93.80	90.70	6,891.1	-185.9	2,953.3	2,958.7	2.28	0.32	2.26
9,733.0	94.40	91.20	6,888.8	-186.5	2,985.2	2,990.6	2.44	1.88	1.56
9,765.0	94.80	90.90	6,886.3	-187.0	3,017.1	3,022.5	1.56	1.25	-0.94
9,796.0	94.50	90.20	6,883.8	-187.3	3,048.0	3,053.3	2.45	-0.97	-2.26
9,828.0	94.40	90.20	6,881.3	-187.5	3,079.9	3,085.2	0.31	-0.31	0.00
9,860.0	93.60	90.20	6,879.0	-187.6	3,111.8	3,117.1	2.50	-2.50	0.00
9,891.0	93.60	89.80	6,877.1	-187.6	3,142.8	3,148.0	1.29	0.00	-1.29
9,923.0	94.40	90.00	6,874.9	-187.5	3,174.7	3,179.9	2.58	2.50	0.63
9,955.0	93.90	89.50	6,872.6	-187.4	3,206.6	3,211.8	2.21	-1.56	-1.56
9,987.0	93.90	90.40	6,870.4	-187.3	3,238.6	3,243.7	2.81	0.00	2.81
10,018.0	93.80	91.10	6,868.3	-187.7	3,269.5	3,274.6	2.28	-0.32	2.26
10,050.0	94.00	91.40	6,866.1	-188.4	3,301.4	3,306.5	1.12	0.63	0.94
10,083.0	94.40	91.60	6,863.7	-189.3	3,334.3	3,339.4	1.35	1.21	0.61
10,114.0	94.70	91.20	6,861.2	-190.1	3,365.2	3,370.3	1.61	0.97	-1.29
10,146.0	94.10	91.20	6,858.8	-190.7	3,397.1	3,402.2	1.88	-1.88	0.00

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well LaSalle 25F-332
Project:	SEC.25-T5N-R65W	TVD Reference:	WELL @ 4655.0ft (RKB - 15')
Site:	LaSalle 25F-HZ Pad Sec.25-T5N-R65W	MD Reference:	WELL @ 4655.0ft (RKB - 15')
Well:	LaSalle 25F-332	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)
10,178.0	94.40	91.40	6,856.4	-191.5	3,429.0	3,434.1	1.13	0.94	0.63
10,210.0	94.40	91.20	6,854.0	-192.2	3,460.9	3,466.0	0.62	0.00	-0.63
10,241.0	93.90	91.60	6,851.7	-192.9	3,491.8	3,496.9	2.06	-1.61	1.29
10,273.0	93.80	91.20	6,849.6	-193.7	3,523.7	3,528.8	1.29	-0.31	-1.25
10,304.0	93.60	90.70	6,847.6	-194.2	3,554.6	3,559.8	1.73	-0.65	-1.61
10,336.0	93.50	90.00	6,845.6	-194.4	3,586.6	3,591.7	2.21	-0.31	-2.19
10,368.0	92.70	90.00	6,843.9	-194.4	3,618.5	3,623.6	2.50	-2.50	0.00
10,400.0	91.90	89.80	6,842.6	-194.4	3,650.5	3,655.5	2.58	-2.50	-0.63
10,431.0	91.20	89.80	6,841.7	-194.3	3,681.5	3,686.5	2.26	-2.26	0.00
10,463.0	91.60	90.00	6,841.0	-194.2	3,713.5	3,718.5	1.40	1.25	0.63
10,495.0	92.40	90.00	6,839.8	-194.2	3,745.5	3,750.4	2.50	2.50	0.00
10,526.0	93.10	89.80	6,838.3	-194.1	3,776.4	3,781.3	2.35	2.26	-0.65
10,558.0	92.80	89.50	6,836.7	-194.0	3,808.4	3,813.3	1.32	-0.94	-0.94
10,590.0	92.50	90.00	6,835.2	-193.8	3,840.4	3,845.2	1.82	-0.94	1.56
10,622.0	92.10	89.50	6,833.9	-193.7	3,872.3	3,877.1	2.00	-1.25	-1.56
10,653.0	91.30	89.10	6,833.0	-193.3	3,903.3	3,908.1	2.88	-2.58	-1.29
10,685.0	91.40	88.80	6,832.3	-192.7	3,935.3	3,940.0	0.99	0.31	-0.94
10,717.0	91.80	89.80	6,831.4	-192.3	3,967.3	3,971.9	3.36	1.25	3.13
10,748.0	92.00	90.40	6,830.3	-192.4	3,998.3	4,002.9	2.04	0.65	1.94
10,780.0	92.50	90.20	6,829.1	-192.5	4,030.2	4,034.8	1.68	1.56	-0.63
10,811.0	93.60	90.00	6,827.4	-192.6	4,061.2	4,065.7	3.61	3.55	-0.65
10,843.0	94.10	90.90	6,825.3	-192.8	4,093.1	4,097.7	3.21	1.56	2.81
10,874.0	93.90	91.60	6,823.1	-193.5	4,124.0	4,128.6	2.34	-0.65	2.26
10,906.0	93.60	91.40	6,821.0	-194.4	4,156.0	4,160.5	1.13	-0.94	-0.63
10,938.0	93.40	91.40	6,819.1	-195.1	4,187.9	4,192.4	0.63	-0.63	0.00
10,970.0	92.20	91.20	6,817.5	-195.9	4,219.8	4,224.4	3.80	-3.75	-0.63
11,001.0	90.80	91.40	6,816.7	-196.6	4,250.8	4,255.4	4.56	-4.52	0.65
11,033.0	90.10	91.90	6,816.5	-197.5	4,282.8	4,287.4	2.69	-2.19	1.56
11,065.0	90.60	91.60	6,816.3	-198.5	4,314.8	4,319.4	1.82	1.56	-0.94
11,096.0	91.00	91.60	6,815.8	-199.3	4,345.8	4,350.3	1.29	1.29	0.00
11,128.0	91.70	91.60	6,815.1	-200.2	4,377.8	4,382.3	2.19	2.19	0.00
11,160.0	92.40	91.90	6,813.9	-201.2	4,409.7	4,414.3	2.38	2.19	0.94
11,191.0	92.50	91.20	6,812.6	-202.0	4,440.7	4,445.3	2.28	0.32	-2.26
11,223.0	91.50	91.60	6,811.5	-202.8	4,472.7	4,477.2	3.37	-3.13	1.25
11,260.0	91.00	91.60	6,810.7	-203.8	4,509.6	4,514.2	1.35	-1.35	0.00
11,314.0	91.00	91.60	6,809.7	-205.4	4,563.6	4,568.2	0.00	0.00	0.00
BHL 1545'FNL, 500'FEL									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,264.0	6,872.2	7"	7	7-1/2

Checked By: _____ Approved By: _____ Date: _____