



PHOENIX
TECHNOLOGY SERVICES

BLACKSPUR OIL CORP._N83

14-03-051-02W5

BLACKSPUR HZ LEDUC-WB 16-11-51-2

100/16-11-051-02W5/00

Well License: 0502001

Survey: 28333 Final Surveys

Phoenix Technology Survey Report

28 January, 2022

BLACKSPUR OIL CORP. N83

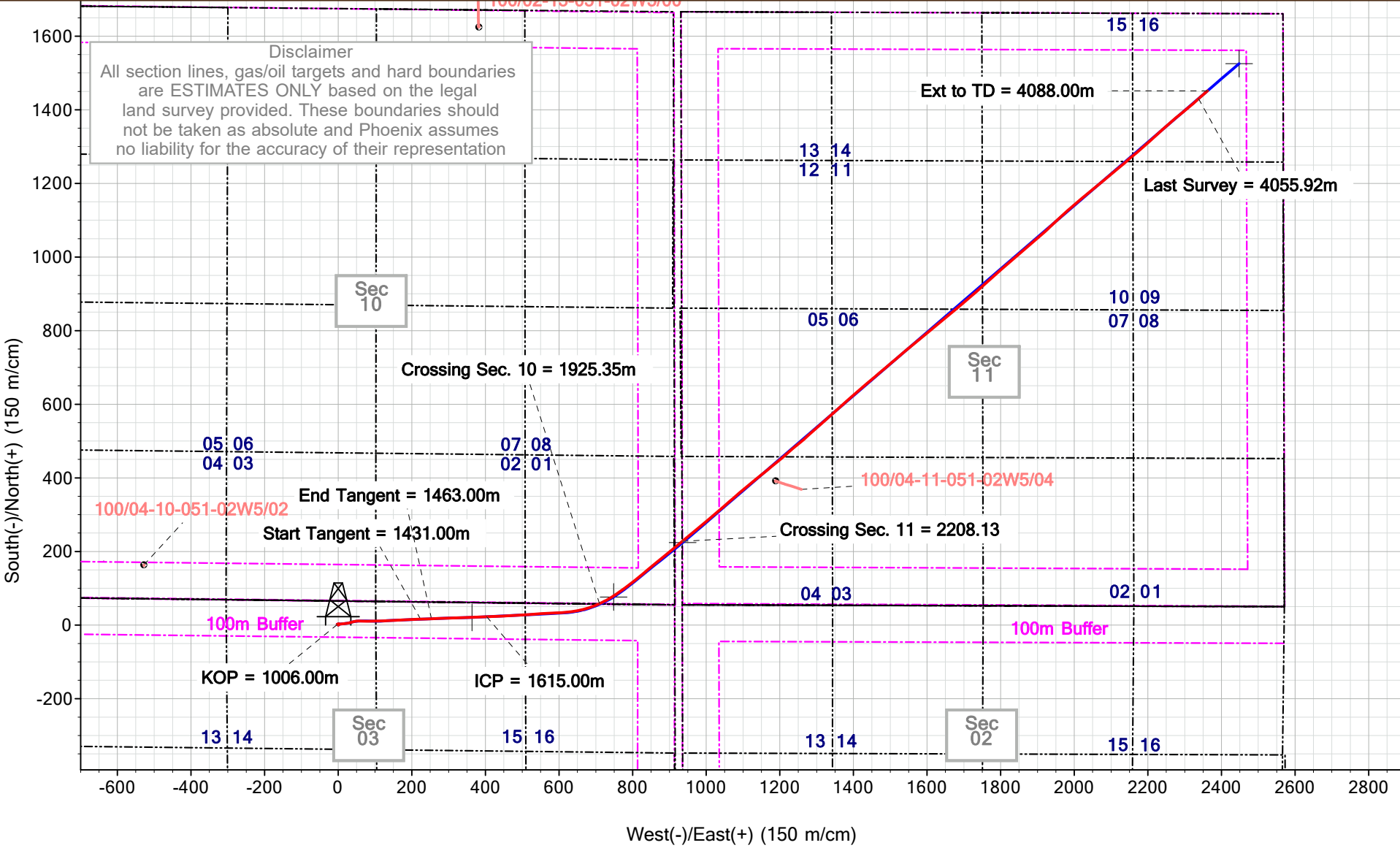
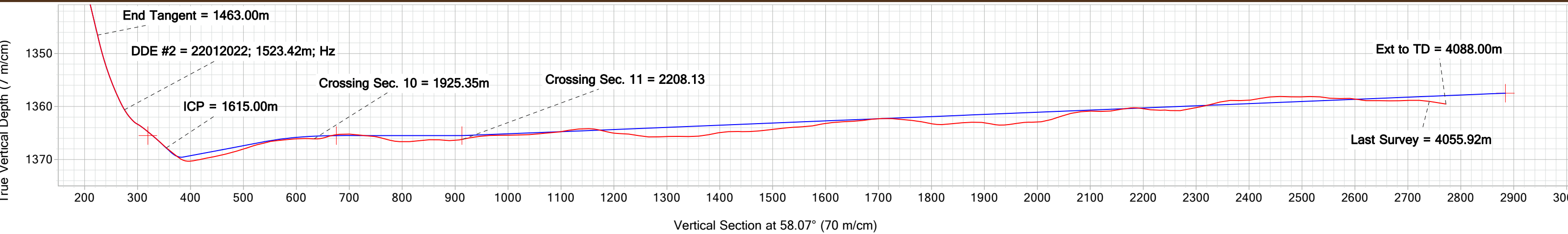
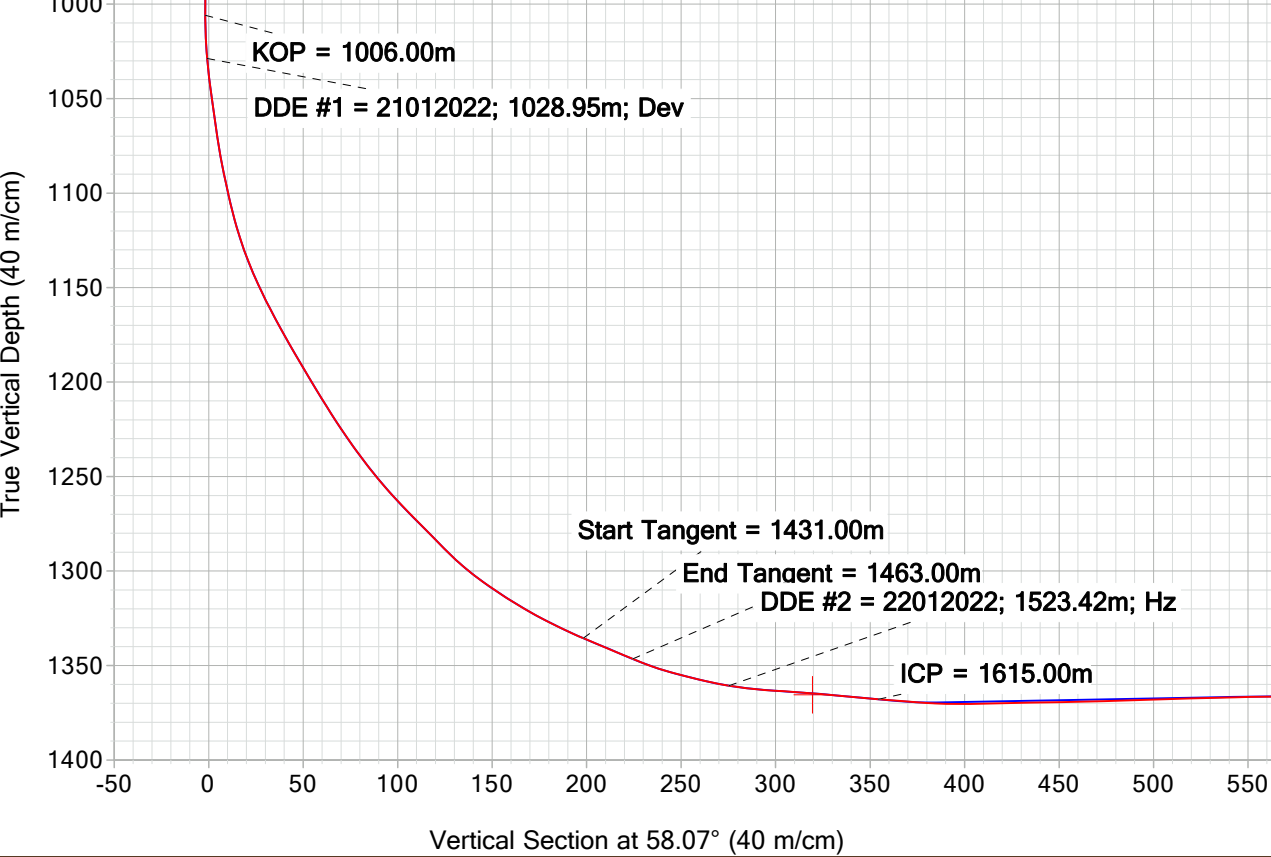
Project: Leduc-WB (NAD 83-Z11)
Site: 14-03-051-02W5
Well: BLACKSPUR HZ LEDUC-WB 16-11-51-2
Wellbore: 100/16-11-051-02W5/00
Design: 28333 Final Surveys
Well License #: 0502001



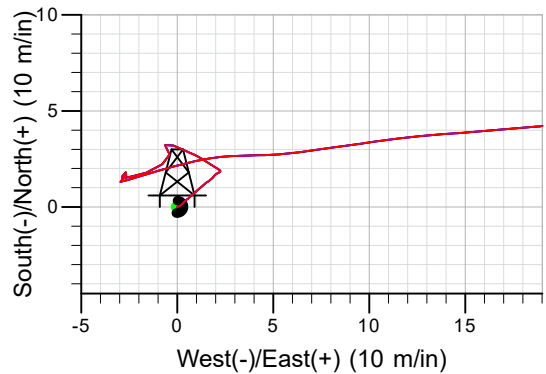
Ground Level (m): 742.01
Actual KB @ 747.51m (Horizon 43)

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSection	Departure	Annotation
5.50	0.00	0.00	5.50	0.00	0.00	0.00	0.00	KB-GL = 5.50m
271.00	1.20	297.90	270.96	2.64	1.05	2.28	4.46	Surf. Csg. = 271.00m
1006.00	0.35	75.97	1005.92	1.30	-2.96	-1.82	11.65	KOP = 1006.00m
1028.95	5.30	72.30	1028.83	1.60	-1.93	-0.79	12.71	DDE #1 = 21012022; 1028.95m; Dev
1431.00	69.54	88.02	1335.54	15.95	223.62	198.22	239.39	Start Tangent = 1431.00m
1463.00	70.37	87.85	1346.55	17.19	253.64	224.36	269.43	End Tangent = 1463.00m
1523.42	81.90	88.70	1360.64	19.45	312.25	275.30	328.09	DDE #2 = 22012022; 1523.42m; Hz
1615.00	85.80	87.60	1367.82	22.65	403.47	354.41	419.37	ICP = 1615.00m
1925.35	89.80	65.60	1366.14	58.24	709.90	633.30	729.60	Crossing Sec. 10 = 1925.35m
2208.13	91.17	50.10	1366.21	227.71	935.36	914.28	1012.35	Crossing Sec. 11 = 2208.13
4055.92	89.10	48.70	1359.06	1430.11	2337.87	2740.50	2860.00	Last Survey = 4055.92m
4088.00	89.10	48.70	1359.57	1451.28	2361.97	2772.15	2892.08	Ext to TD = 4088.00m



SURFACE LOCATION	LOCAL COORDINATES
Datum: North American Datum 1983 Zone: Zone 11N (120 W to 114 W) Northing: 5918259.20 Easting: 685392.50 Latitude: 53° 22' 51.065 N Longitude: 114° 12' 45.341 W	Surface Co-ordinates 65m S of N Boundary 711.4m E of W Boundary, Sec 3



Database:	Compass 5000 Canada	Local Co-ordinate Reference:	Well BLACKSPUR HZ LEDUC-WB 16-11-51-2
Company:	BLACKSPUR OIL CORP._N83	TVD Reference:	Actual KB @ 747.51m (Horizon 43)
Project:	Leduc-WB (NAD 83-Z11)	MD Reference:	Actual KB @ 747.51m (Horizon 43)
Site:	14-03-051-02W5	North Reference:	True
Well:	BLACKSPUR HZ LEDUC-WB 16-11-51-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	100/16-11-051-02W5/00	Well License	0502001
Design:	28333 Final Surveys		

Project	Leduc-WB (NAD 83-Z11)		
Map System:	Universal Transverse Mercator	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 11N (120 W to 114 W)		

Site	14-03-051-02W5			
Site Position:		Northing:	5,918,259.20 m	Latitude: 53.38
From:	Map	Easting:	685,392.50 m	Longitude: -114.21
Position Uncertainty:	0.00 m	Slot Radius:	335.28 mm	Grid Convergence: 2.24 °

Well	BLACKSPUR HZ LEDUC-WB 16-11-51-2			
Well Position	+N/-S	0.00 m	Northing:	5,918,259.20 m
	+E/-W	0.00 m	Easting:	685,392.50 m
Position Uncertainty		0.00 m	Wellhead Elevation:	m
			Ground Level:	742.01 m

Wellbore	100/16-11-051-02W5/00				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	1/15/2022	13.68	74.72	56,340.70214604

Design	28333 Final Surveys				
Audit Notes:	0502001				
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (m)	+N/-S (m)	+E/-W (m)	Direction (°)	
	0.00	0.00	0.00	58.07	

Survey Program	Date	1/28/2022			
From (°)	To (m)	Survey (Wellbore)	Tool Name	Description	
0.00	4,088.00	28333 Final Surveys (100/16-11-051-02W5)	MWD+HDGM	OWSG Rev.2 MWD + HDGM	

Survey										
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Subsea Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
0.00	0.00	0.00	0.00	747.51	0.00	0.00	0.00	0.000	0.000	0.000
KB-GL = 5.50m										
5.50	0.00	0.00	5.50	742.01	0.00	0.00	0.00	0.000	0.000	0.000
36.32	0.40	72.60	36.32	711.19	0.03	0.10	0.10	0.389	0.389	0.000
58.62	1.00	42.50	58.62	688.89	0.20	0.31	0.37	0.920	0.807	-40.493
77.95	1.20	52.00	77.94	669.57	0.45	0.58	0.73	0.419	0.310	14.744
96.80	1.50	47.50	96.79	650.72	0.74	0.92	1.17	0.506	0.477	-7.162
115.68	1.80	48.90	115.66	631.85	1.10	1.32	1.71	0.481	0.477	2.225
134.56	1.00	58.10	134.54	612.97	1.38	1.69	2.16	1.316	-1.271	14.619

Database:	Compass 5000 Canada	Local Co-ordinate Reference:	Well BLACKSPUR HZ LEDUC-WB 16-11-51-2
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Project:	Leduc-WB (NAD 83-Z11)	MD Reference:	Actual KB @ 747.51m (Horizon 43)
Site:	14-03-051-02W5	North Reference:	True
Well:	BLACKSPUR HZ LEDUC-WB 16-11-51-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	100/16-11-051-02W5/00	Well License	0502001
Design:	28333 Final Surveys		

Survey											
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Subsea Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	
153.68	0.90	34.70	153.65	593.86	1.59	1.92	2.47	0.624	-0.157	-36.715	
172.60	0.90	67.80	172.57	574.94	1.77	2.14	2.75	0.813	0.000	52.484	
191.58	0.40	333.70	191.55	555.96	1.89	2.25	2.90	1.597	-0.790	-148.736	
210.62	0.80	294.30	210.59	536.92	2.00	2.10	2.84	0.871	0.630	-62.080	
229.59	1.30	304.30	229.56	517.95	2.18	1.80	2.68	0.839	0.791	15.814	
248.50	1.20	301.50	248.46	499.05	2.40	1.45	2.50	0.186	-0.159	-4.442	
254.00	1.20	302.40	253.96	493.55	2.46	1.35	2.45	0.103	0.000	4.909	
Surf. Csg. = 271.00m											
271.00	1.20	297.90	270.96	476.55	2.64	1.05	2.28	0.166	0.000	-7.941	
288.40	1.20	293.30	288.35	459.16	2.80	0.72	2.09	0.166	0.000	-7.931	
345.42	0.80	293.40	345.36	402.15	3.19	-0.20	1.52	0.210	-0.210	0.053	
402.33	0.30	207.10	402.27	345.24	3.22	-0.63	1.17	0.441	-0.264	-45.493	
459.25	0.30	101.80	459.19	288.32	3.05	-0.55	1.15	0.251	0.000	-55.499	
516.39	0.60	178.40	516.33	231.18	2.72	-0.40	1.10	0.318	0.158	40.217	
573.24	0.90	241.20	573.18	174.33	2.21	-0.78	0.51	0.434	0.158	33.140	
630.06	1.00	243.40	629.99	117.52	1.77	-1.61	-0.43	0.056	0.053	1.162	
687.16	0.70	274.00	687.08	60.43	1.58	-2.41	-1.21	0.280	-0.158	16.077	
744.19	0.30	220.20	744.11	3.40	1.49	-2.85	-1.63	0.303	-0.210	-28.301	
801.31	0.50	21.50	801.23	-53.72	1.60	-2.86	-1.58	0.415	0.105	84.716	
858.15	0.20	107.90	858.07	-110.56	1.80	-2.67	-1.31	0.278	-0.158	45.602	
915.15	0.30	214.20	915.07	-167.56	1.65	-2.66	-1.39	0.213	0.053	55.947	
971.98	0.40	226.30	971.90	-224.39	1.39	-2.89	-1.72	0.065	0.053	6.387	
990.96	0.10	159.60	990.88	-243.37	1.33	-2.93	-1.78	0.588	-0.474	-105.427	
1,000.54	0.40	247.10	1,000.46	-252.95	1.31	-2.96	-1.82	1.278	0.939	274.008	
KOP = 1006.00m											
1,006.00	0.35	75.97	1,005.92	-258.41	1.30	-2.96	-1.82	4.109	-0.275	-940.275	
1,009.99	0.90	73.10	1,009.91	-262.40	1.32	-2.92	-1.78	4.141	4.135	-21.579	
1,019.47	3.10	75.88	1,019.38	-271.87	1.40	-2.60	-1.46	6.967	6.962	8.797	
DDE #1 = 21012022; 1028.95m; Dev											
1,028.95	5.30	72.30	1,028.83	-281.32	1.60	-1.93	-0.79	7.008	6.962	-11.329	
1,038.53	6.80	73.90	1,038.36	-290.85	1.89	-0.96	0.18	4.726	4.697	5.010	
1,048.01	8.00	75.50	1,047.76	-300.25	2.21	0.21	1.35	3.853	3.797	5.063	
1,057.44	8.70	79.80	1,057.09	-309.58	2.50	1.55	2.64	2.983	2.227	13.680	
1,066.91	9.50	88.10	1,066.44	-318.93	2.65	3.04	3.98	4.864	2.534	26.294	
1,076.53	10.60	88.30	1,075.91	-328.40	2.70	4.71	5.43	3.432	3.430	0.624	
1,086.19	12.00	81.70	1,085.39	-337.88	2.88	6.60	7.12	5.912	4.348	-20.497	
1,095.70	13.50	82.30	1,094.66	-347.15	3.17	8.68	9.04	4.750	4.732	1.893	
1,105.16	14.60	81.80	1,103.84	-356.33	3.49	10.95	11.14	3.510	3.488	-1.586	
1,114.65	16.20	85.80	1,112.99	-365.48	3.75	13.45	13.40	6.068	5.058	12.645	
1,124.19	19.50	85.20	1,122.07	-374.56	3.98	16.37	16.00	10.393	10.377	-1.887	
1,133.70	22.00	85.10	1,130.96	-383.45	4.27	19.73	19.00	7.887	7.886	-0.315	
1,143.20	24.50	80.20	1,139.69	-392.18	4.76	23.44	22.41	9.976	7.895	-15.474	
1,152.83	26.20	76.40	1,148.39	-400.88	5.60	27.47	26.28	7.328	5.296	-11.838	

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Project:	Leduc-WB (NAD 83-Z11)	MD Reference:	Actual KB @ 747.51m (Horizon 43)
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Well:	BLACKSPUR HZ LEDUC-WB 16-11-51-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	100/16-11-051-02W5/00	Well License	0502001
Design:	28333 Final Surveys		

Survey										
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Subsea Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
1,162.35	27.40	75.80	1,156.89	-409.38	6.63	31.64	30.36	3.876	3.782	-1.891
1,171.82	28.60	74.70	1,165.25	-417.74	7.76	35.94	34.61	4.138	3.801	-3.485
1,181.30	30.00	76.90	1,173.52	-426.01	8.90	40.44	39.02	5.588	4.430	6.962
1,190.77	31.90	78.50	1,181.64	-434.13	9.93	45.20	43.61	6.559	6.019	5.069
1,200.25	33.20	82.30	1,189.63	-442.12	10.78	50.22	48.33	7.666	4.114	12.025
1,209.70	34.30	87.10	1,197.49	-449.98	11.26	55.45	53.01	9.155	3.492	15.238
1,219.26	35.70	91.30	1,205.32	-457.81	11.33	60.93	57.70	8.741	4.393	13.180
1,228.73	37.20	92.60	1,212.94	-465.43	11.14	66.55	62.37	5.345	4.752	4.118
1,238.23	38.20	91.80	1,220.46	-472.95	10.92	72.35	67.18	3.515	3.158	-2.526
1,247.72	39.50	91.80	1,227.85	-480.34	10.73	78.30	72.13	4.110	4.110	0.000
1,257.30	40.80	92.60	1,235.17	-487.66	10.49	84.48	77.25	4.380	4.071	2.505
1,266.78	42.70	90.60	1,242.24	-494.73	10.32	90.79	82.51	7.342	6.013	-6.329
1,276.27	43.40	89.00	1,249.18	-501.67	10.34	97.26	88.02	4.101	2.213	-5.058
1,285.75	44.90	87.10	1,255.98	-508.47	10.57	103.86	93.74	6.330	4.747	-6.013
1,295.22	46.60	87.10	1,262.59	-515.08	10.91	110.64	99.67	5.385	5.385	0.000
1,304.87	48.50	87.40	1,269.10	-521.59	11.25	117.75	105.89	5.947	5.907	0.933
1,314.34	48.00	87.00	1,275.41	-527.90	11.60	124.81	112.06	1.845	-1.584	-1.267
1,324.00	48.50	87.10	1,281.84	-534.33	11.97	132.00	118.36	1.570	1.553	0.311
1,333.45	49.10	87.00	1,288.06	-540.55	12.33	139.10	124.58	1.920	1.905	-0.317
1,342.94	50.80	86.80	1,294.17	-546.66	12.73	146.36	130.95	5.396	5.374	-0.632
1,352.54	54.00	86.60	1,300.03	-552.52	13.17	153.95	137.62	10.012	10.000	-0.625
1,362.01	57.80	86.90	1,305.33	-557.82	13.61	161.78	144.50	12.064	12.038	0.950
1,371.60	60.00	87.30	1,310.29	-562.78	14.03	169.98	151.68	6.965	6.882	1.251
1,381.16	61.20	88.20	1,314.98	-567.47	14.35	178.30	158.92	4.498	3.766	2.824
1,390.65	62.50	88.00	1,319.46	-571.95	14.63	186.66	166.16	4.147	4.110	-0.632
1,400.13	65.00	88.10	1,323.65	-576.14	14.92	195.16	173.52	7.916	7.911	0.316
1,409.61	66.60	87.60	1,327.54	-580.03	15.24	203.80	181.03	5.265	5.063	-1.582
1,419.06	67.70	88.00	1,331.21	-583.70	15.58	212.50	188.59	3.683	3.492	1.270
1,428.52	69.30	88.20	1,334.67	-587.16	15.87	221.30	196.21	5.108	5.074	0.634
Start Tangent = 1431.00m										
1,431.00	69.54	88.02	1,335.54	-588.03	15.95	223.62	198.22	3.547	2.903	-2.177
1,437.98	70.20	87.50	1,337.95	-590.44	16.20	230.17	203.91	3.528	2.837	-2.235
1,447.41	69.80	87.70	1,341.17	-593.66	16.57	239.02	211.62	1.406	-1.273	0.636
1,456.90	69.60	87.40	1,344.46	-596.95	16.95	247.91	219.37	1.091	-0.632	-0.948
End Tangent = 1463.00m										
1,463.00	70.37	87.85	1,346.55	-599.04	17.19	253.64	224.36	4.320	3.787	2.213
1,466.34	70.80	88.10	1,347.66	-600.15	17.30	256.79	227.09	4.405	3.862	2.246
1,475.84	73.40	87.30	1,350.58	-603.07	17.67	265.82	234.95	8.555	8.211	-2.526
1,485.33	75.50	87.40	1,353.13	-605.62	18.09	274.95	242.92	6.646	6.639	0.316
1,494.99	77.30	87.80	1,355.40	-607.89	18.48	284.33	251.09	5.719	5.590	1.242
1,504.47	78.60	87.60	1,357.38	-609.87	18.85	293.60	259.15	4.160	4.114	-0.633
1,513.92	79.90	88.20	1,359.14	-611.63	19.19	302.87	267.20	4.531	4.127	1.905
DDE #2 = 22012022; 1523.42m; Hz										

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Wellbore:	100/16-11-051-02W5/00	Well License	0502001
Design:	28333 Final Surveys		

Survey										
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Subsea Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
1,523.42	81.90	88.70	1,360.64	-613.13	19.45	312.25	275.30	6.505	6.316	1.579
1,532.90	83.70	88.80	1,361.83	-614.32	19.65	321.65	283.38	5.705	5.696	0.316
1,542.47	85.30	89.00	1,362.75	-615.24	19.83	331.18	291.56	5.054	5.016	0.627
1,552.00	87.40	88.60	1,363.35	-615.84	20.03	340.68	299.74	6.729	6.611	-1.259
1,561.72	86.20	87.90	1,363.90	-616.39	20.33	350.39	308.13	4.286	-3.704	-2.160
1,571.24	86.10	87.70	1,364.53	-617.02	20.69	359.88	316.38	0.703	-0.315	-0.630
1,580.70	85.80	87.40	1,365.20	-617.69	21.10	369.30	324.59	1.344	-0.951	-0.951
1,590.17	85.70	87.50	1,365.90	-618.39	21.52	378.74	332.82	0.447	-0.317	0.317
1,599.00	85.40	87.20	1,366.59	-619.08	21.93	387.53	340.50	1.439	-1.019	-1.019
ICP = 1615.00m										
1,615.00	85.80	87.60	1,367.82	-620.31	22.65	403.47	354.41	1.059	0.750	0.750
1,625.00	86.06	87.86	1,368.53	-621.02	23.04	413.44	363.08	1.102	0.780	0.780
1,630.43	86.20	88.00	1,368.89	-621.38	23.24	418.85	367.77	1.093	0.773	0.773
1,640.03	86.00	87.30	1,369.55	-622.04	23.63	428.42	376.10	2.270	-0.625	-2.187
1,648.00	87.36	87.13	1,370.01	-622.50	24.02	436.37	383.05	5.159	5.119	-0.640
1,649.43	87.60	87.10	1,370.07	-622.56	24.09	437.79	384.30	5.074	5.035	-0.629
1,659.03	89.20	87.40	1,370.34	-622.83	24.55	447.38	392.68	5.087	5.000	0.937
1,668.49	90.90	87.50	1,370.33	-622.82	24.97	456.83	400.92	5.400	5.391	0.317
1,677.99	90.80	87.20	1,370.19	-622.68	25.41	466.32	409.21	0.999	-0.316	-0.947
1,687.48	91.00	86.60	1,370.04	-622.53	25.92	475.79	417.52	1.999	0.632	-1.897
1,697.08	91.20	86.80	1,369.86	-622.35	26.48	485.37	425.95	0.884	0.625	0.625
1,706.58	90.80	86.70	1,369.69	-622.18	27.02	494.86	434.28	1.302	-1.263	-0.316
1,725.19	91.19	86.11	1,369.37	-621.86	28.18	513.43	450.66	1.140	0.629	-0.951
1,725.56	91.20	86.10	1,369.36	-621.85	28.21	513.80	450.98	1.147	0.811	-0.811
1,744.49	91.10	85.30	1,368.98	-621.47	29.63	532.67	467.75	1.277	-0.158	-1.268
1,763.49	91.60	86.80	1,368.53	-621.02	30.93	551.62	484.53	2.496	0.789	2.368
1,782.44	91.60	86.70	1,368.00	-620.49	32.01	570.53	501.15	0.158	0.000	-0.158
1,801.51	91.60	86.90	1,367.47	-619.96	33.07	589.56	517.86	0.315	0.000	0.315
1,811.00	91.10	86.60	1,367.25	-619.74	33.61	599.04	526.18	1.843	-1.581	-0.948
1,820.46	91.30	86.80	1,367.05	-619.54	34.16	608.48	534.49	0.897	0.634	0.634
1,830.04	91.40	85.30	1,366.82	-619.31	34.82	618.03	542.94	4.706	0.313	-4.697
1,839.54	91.10	83.70	1,366.62	-619.11	35.73	627.49	551.45	5.139	-0.947	-5.053
1,849.19	90.40	82.00	1,366.49	-618.98	36.93	637.06	560.21	5.715	-2.176	-5.285
1,858.68	90.50	80.00	1,366.42	-618.90	38.41	646.43	568.95	6.330	0.316	-6.322
1,868.18	90.70	77.70	1,366.32	-618.81	40.25	655.75	577.83	7.290	0.632	-7.263
1,877.69	90.40	76.10	1,366.22	-618.71	42.40	665.01	586.83	5.135	-0.946	-5.047
1,887.16	90.50	73.40	1,366.15	-618.64	44.89	674.15	595.90	8.559	0.317	-8.553
1,896.65	90.10	71.70	1,366.10	-618.59	47.74	683.20	605.09	5.521	-1.264	-5.374
1,906.32	90.20	69.40	1,366.07	-618.56	50.96	692.32	614.53	7.142	0.310	-7.135
1,915.77	89.60	67.50	1,366.09	-618.58	54.43	701.11	623.82	6.325	-1.905	-6.032
Crossing Sec. 10 = 1925.35m										
1,925.35	89.80	65.60	1,366.14	-618.63	58.24	709.90	633.30	5.983	0.626	-5.950
1,934.94	90.50	63.90	1,366.12	-618.61	62.33	718.57	642.82	5.751	2.190	-5.318

Database:	Compass 5000 Canada	Local Co-ordinate Reference:	Well BLACKSPUR HZ LEDUC-WB 16-11-51-2
Company:	BLACKSPUR OIL CORP._N83	TVD Reference:	Actual KB @ 747.51m (Horizon 43)
Project:	Leduc-WB (NAD 83-Z11)	MD Reference:	Actual KB @ 747.51m (Horizon 43)
Site:	14-03-051-02W5	North Reference:	True
Well:	BLACKSPUR HZ LEDUC-WB 16-11-51-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	100/16-11-051-02W5/00	Well License	0502001
Design:	28333 Final Surveys		

Survey										
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Subsea Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
1,944.34	91.80	62.00	1,365.93	-618.42	66.61	726.94	652.19	7.346	4.149	-6.064
1,951.51	91.73	60.51	1,365.71	-618.20	70.05	733.22	659.34	6.238	-0.293	-6.234
1,953.98	91.70	60.00	1,365.63	-618.12	71.28	735.37	661.81	6.202	-0.364	-6.194
1,963.65	91.00	57.90	1,365.41	-617.90	76.26	743.65	671.48	6.866	-2.172	-6.515
1,968.57	90.74	57.23	1,365.33	-617.82	78.90	747.80	676.39	4.382	-1.585	-4.085
1,973.13	90.50	56.60	1,365.28	-617.77	81.39	751.62	680.95	4.435	-1.579	-4.145
1,992.34	89.80	54.00	1,365.23	-617.72	92.33	767.41	700.14	4.205	-1.093	-4.060
2,011.43	89.10	53.90	1,365.41	-617.90	103.56	782.85	719.18	1.111	-1.100	-0.157
2,030.49	89.80	52.20	1,365.60	-618.09	115.02	798.08	738.16	2.894	1.102	-2.676
2,049.59	88.60	50.90	1,365.86	-618.35	126.89	813.03	757.14	2.779	-1.885	-2.042
2,068.76	88.40	50.00	1,366.37	-618.86	139.09	827.81	776.13	1.442	-0.313	-1.408
2,087.82	89.90	50.20	1,366.65	-619.14	151.32	842.43	795.00	2.382	2.361	0.315
2,106.78	90.10	49.50	1,366.65	-619.14	163.54	856.92	813.77	1.152	0.316	-1.108
2,125.72	90.90	51.20	1,366.48	-618.97	175.63	871.50	832.54	2.976	1.267	2.693
2,144.66	90.20	51.20	1,366.30	-618.79	187.49	886.26	851.34	1.109	-1.109	0.000
2,163.82	89.70	50.70	1,366.32	-618.81	199.57	901.14	870.35	1.107	-0.783	-0.783
2,182.88	89.50	50.80	1,366.45	-618.94	211.62	915.90	889.26	0.352	-0.315	0.157
2,201.87	91.20	50.20	1,366.33	-618.82	223.70	930.55	908.08	2.848	2.686	-0.948
Crossing Sec. 11 = 2208.13										
2,208.13	91.17	50.10	1,366.21	-618.70	227.71	935.36	914.28	0.494	-0.156	-0.468
2,221.09	91.10	49.90	1,365.95	-618.44	236.04	945.29	927.11	0.494	-0.156	-0.468
2,240.14	90.70	50.50	1,365.65	-618.14	248.23	959.92	945.98	1.136	-0.630	0.945
2,259.13	90.20	50.40	1,365.50	-617.99	260.33	974.56	964.80	0.806	-0.790	-0.158
2,278.18	90.00	50.20	1,365.47	-617.96	272.49	989.22	983.67	0.445	-0.315	-0.315
2,297.15	90.20	50.20	1,365.43	-617.92	284.64	1,003.79	1,002.46	0.316	0.316	0.000
2,316.22	90.10	49.60	1,365.38	-617.87	296.92	1,018.38	1,021.34	0.957	-0.157	-0.944
2,335.11	90.20	49.30	1,365.34	-617.83	309.20	1,032.73	1,040.02	0.502	0.159	-0.476
2,354.15	90.80	48.60	1,365.17	-617.66	321.70	1,047.09	1,058.81	1.453	0.945	-1.103
2,373.12	90.20	49.30	1,365.00	-617.49	334.16	1,061.40	1,077.54	1.458	-0.949	1.107
2,392.01	90.80	49.20	1,364.84	-617.33	346.49	1,075.71	1,096.21	0.966	0.953	-0.159
2,411.06	91.20	49.30	1,364.51	-617.00	358.92	1,090.14	1,115.03	0.649	0.630	0.157
2,430.03	90.20	49.90	1,364.27	-616.76	371.22	1,104.58	1,133.79	1.844	-1.581	0.949
2,449.13	90.10	51.20	1,364.22	-616.71	383.35	1,119.33	1,152.73	2.048	-0.157	2.042
2,467.98	88.70	50.80	1,364.42	-616.91	395.22	1,133.98	1,171.43	2.317	-2.228	-0.637
2,487.10	88.60	50.60	1,364.87	-617.36	407.32	1,148.77	1,190.39	0.351	-0.157	-0.314
2,506.21	89.90	50.70	1,365.12	-617.61	419.44	1,163.54	1,209.34	2.047	2.041	0.157
2,525.18	89.40	50.80	1,365.24	-617.73	431.44	1,178.23	1,228.15	0.806	-0.791	0.158
2,544.19	88.80	51.00	1,365.54	-618.03	443.43	1,192.99	1,247.01	0.998	-0.947	0.316
2,563.14	89.80	49.80	1,365.77	-618.26	455.51	1,207.58	1,265.79	2.473	1.583	-1.900
2,582.26	90.30	49.00	1,365.75	-618.24	467.95	1,222.10	1,284.69	1.480	0.785	-1.255
2,601.41	90.20	49.60	1,365.67	-618.16	480.44	1,236.62	1,303.62	0.953	-0.157	0.940
2,620.51	89.90	50.00	1,365.65	-618.14	492.76	1,251.21	1,322.52	0.785	-0.471	0.628

Database:	Compass 5000 Canada	Local Co-ordinate Reference:	Well BLACKSPUR HZ LEDUC-WB 16-11-51-2
Company:	BLACKSPUR OIL CORP._N83	TVD Reference:	Actual KB @ 747.51m (Horizon 43)
Project:	Leduc-WB (NAD 83-Z11)	MD Reference:	Actual KB @ 747.51m (Horizon 43)
Site:	14-03-051-02W5	North Reference:	True
Well:	BLACKSPUR HZ LEDUC-WB 16-11-51-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	100/16-11-051-02W5/00	Well License	0502001
Design:	28333 Final Surveys		

Survey										
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Subsea Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
2,639.57	89.90	49.00	1,365.68	-618.17	505.14	1,265.70	1,341.36	1.574	0.000	-1.574
2,658.70	90.50	47.80	1,365.62	-618.11	517.84	1,280.01	1,360.22	2.104	0.941	-1.882
2,677.63	91.10	48.10	1,365.35	-617.84	530.52	1,294.06	1,378.85	1.063	0.951	0.475
2,696.54	91.20	48.70	1,364.97	-617.46	543.07	1,308.20	1,397.49	0.965	0.159	0.952
2,715.60	90.00	47.90	1,364.77	-617.26	555.75	1,322.43	1,416.27	2.270	-1.889	-1.259
2,734.54	90.20	48.40	1,364.74	-617.23	568.39	1,336.54	1,434.93	0.853	0.317	0.792
2,753.47	89.80	48.50	1,364.74	-617.23	580.94	1,350.70	1,453.59	0.653	-0.634	0.158
2,772.44	90.70	48.40	1,364.66	-617.15	593.53	1,364.90	1,472.30	1.432	1.423	-0.158
2,791.58	90.50	48.50	1,364.46	-616.95	606.22	1,379.22	1,491.17	0.350	-0.313	0.157
2,810.66	90.90	48.60	1,364.23	-616.72	618.85	1,393.52	1,509.98	0.648	0.629	0.157
2,829.75	90.20	48.50	1,364.04	-616.53	631.49	1,407.83	1,528.81	1.111	-1.100	-0.157
2,848.70	90.70	49.20	1,363.89	-616.38	643.95	1,422.10	1,547.51	1.362	0.792	1.108
2,858.17	89.90	49.00	1,363.84	-616.33	650.16	1,429.26	1,556.87	2.612	-2.534	-0.634
2,877.02	91.10	50.00	1,363.68	-616.17	662.40	1,443.59	1,575.50	2.486	1.910	1.592
2,895.88	91.10	50.30	1,363.32	-615.81	674.48	1,458.07	1,594.18	0.477	0.000	0.477
2,914.76	90.50	49.90	1,363.05	-615.54	686.59	1,472.55	1,612.88	1.146	-0.953	-0.636
2,933.88	90.40	49.70	1,362.90	-615.39	698.93	1,487.15	1,631.80	0.351	-0.157	-0.314
2,952.80	90.10	49.60	1,362.82	-615.31	711.18	1,501.57	1,650.51	0.501	-0.476	-0.159
2,971.78	90.80	49.50	1,362.67	-615.16	723.49	1,516.02	1,669.28	1.118	1.106	-0.158
2,990.82	90.70	50.00	1,362.42	-614.91	735.79	1,530.55	1,688.12	0.803	-0.158	0.788
3,009.79	90.10	50.20	1,362.29	-614.78	747.96	1,545.10	1,706.91	1.000	-0.949	0.316
3,028.75	89.70	50.10	1,362.32	-614.81	760.11	1,559.65	1,725.69	0.652	-0.633	-0.158
3,047.71	89.40	50.40	1,362.47	-614.96	772.23	1,574.23	1,744.47	0.671	-0.475	0.475
3,066.65	89.50	51.30	1,362.65	-615.14	784.19	1,588.92	1,763.26	1.434	0.158	1.426
3,085.61	88.90	50.90	1,362.92	-615.41	796.10	1,603.67	1,782.08	1.141	-0.949	-0.633
3,104.61	88.90	49.90	1,363.28	-615.77	808.20	1,618.31	1,800.90	1.579	0.000	-1.579
3,123.54	90.20	50.10	1,363.43	-615.92	820.37	1,632.81	1,819.64	2.084	2.060	0.317
3,142.54	90.70	50.30	1,363.28	-615.77	832.53	1,647.41	1,838.46	0.850	0.789	0.316
3,161.57	90.40	50.20	1,363.10	-615.59	844.70	1,662.04	1,857.32	0.499	-0.473	-0.158
3,180.56	90.30	50.40	1,362.98	-615.47	856.83	1,676.65	1,876.13	0.353	-0.158	0.316
3,199.67	89.40	50.10	1,363.03	-615.52	869.05	1,691.34	1,895.06	1.489	-1.413	-0.471
3,218.55	88.80	49.50	1,363.33	-615.82	881.24	1,705.76	1,913.74	1.348	-0.953	-0.953
3,237.47	90.00	48.80	1,363.53	-616.02	893.61	1,720.07	1,932.43	2.203	1.903	-1.110
3,256.45	91.00	48.60	1,363.36	-615.85	906.14	1,734.33	1,951.16	1.612	1.581	-0.316
3,275.45	90.70	48.40	1,363.08	-615.57	918.72	1,748.56	1,969.89	0.569	-0.474	-0.316
3,294.39	89.90	48.50	1,362.98	-615.47	931.29	1,762.73	1,988.57	1.277	-1.267	0.158
3,313.56	90.60	47.90	1,362.90	-615.39	944.06	1,777.02	2,007.45	1.443	1.095	-0.939
3,332.55	91.80	47.90	1,362.50	-614.99	956.79	1,791.11	2,026.14	1.896	1.896	0.000
3,351.53	92.00	48.90	1,361.87	-614.36	969.39	1,805.29	2,044.84	1.611	0.316	1.581
3,370.46	91.30	49.00	1,361.33	-613.82	981.81	1,819.56	2,063.52	1.121	-1.109	0.158
3,389.36	90.60	49.10	1,361.01	-613.50	994.20	1,833.83	2,082.18	1.122	-1.111	0.159
3,408.38	90.10	49.20	1,360.90	-613.39	1,006.64	1,848.22	2,100.97	0.804	-0.789	0.158
3,427.28	89.60	49.30	1,360.95	-613.44	1,018.98	1,862.54	2,119.65	0.809	-0.794	0.159

Database:	Compass 5000 Canada				Local Co-ordinate Reference:			Well BLACKSPUR HZ LEDUC-WB 16-11-51-2		
Company:	BLACKSPUR OIL CORP._N83				TVD Reference:			Actual KB @ 747.51m (Horizon 43)		
Project:	Leduc-WB (NAD 83-Z11)				MD Reference:			Actual KB @ 747.51m (Horizon 43)		
Site:	14-03-051-02W5				North Reference:			True		
Well:	BLACKSPUR HZ LEDUC-WB 16-11-51-2				Survey Calculation Method:			Minimum Curvature		
Wellbore:	100/16-11-051-02W5/00				Well License			0502001		
Design:	28333 Final Surveys									
Survey										
Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Subsea Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
3,446.26	90.80	49.40	1,360.88	-613.37	1,031.34	1,876.94	2,138.41	1.903	1.897	0.158
3,465.20	91.10	49.50	1,360.57	-613.06	1,043.65	1,891.33	2,157.13	0.501	0.475	0.158
3,484.13	90.50	49.30	1,360.30	-612.79	1,055.97	1,905.70	2,175.85	1.002	-0.951	-0.317
3,503.31	89.20	47.70	1,360.35	-612.84	1,068.68	1,920.06	2,194.76	3.224	-2.033	-2.503
3,522.30	89.00	46.20	1,360.65	-613.14	1,081.64	1,933.94	2,213.39	2.390	-0.316	-2.370
3,541.25	90.50	47.10	1,360.73	-613.22	1,094.65	1,947.72	2,231.96	2.769	2.375	1.425
3,560.51	89.20	46.90	1,360.78	-613.27	1,107.78	1,961.80	2,250.86	2.049	-2.025	-0.312
3,579.79	90.70	48.10	1,360.80	-613.29	1,120.81	1,976.02	2,269.81	2.989	2.334	1.867
3,598.97	91.40	49.10	1,360.45	-612.94	1,133.49	1,990.40	2,288.73	1.909	1.095	1.564
3,617.99	90.80	49.40	1,360.08	-612.57	1,145.90	2,004.81	2,307.52	1.058	-0.946	0.473
3,637.17	91.70	50.10	1,359.66	-612.15	1,158.29	2,019.44	2,326.49	1.783	1.408	1.095
3,656.33	91.30	50.60	1,359.16	-611.65	1,170.51	2,034.19	2,345.47	1.002	-0.626	0.783
3,675.45	90.40	50.60	1,358.88	-611.37	1,182.65	2,048.96	2,364.43	1.412	-1.412	0.000
3,694.58	89.50	50.40	1,358.90	-611.39	1,194.81	2,063.72	2,383.39	1.446	-1.411	-0.314
3,713.56	91.00	51.00	1,358.81	-611.30	1,206.84	2,078.41	2,402.21	2.554	2.371	0.948
3,732.62	90.90	50.20	1,358.50	-610.99	1,218.93	2,093.14	2,421.11	1.269	-0.157	-1.259
3,751.58	90.70	50.00	1,358.23	-610.72	1,231.09	2,107.68	2,439.88	0.448	-0.316	-0.316
3,770.57	89.90	49.50	1,358.13	-610.62	1,243.36	2,122.18	2,458.67	1.490	-1.264	-0.790
3,789.54	89.80	49.50	1,358.18	-610.67	1,255.68	2,136.60	2,477.43	0.158	-0.158	0.000
3,808.54	90.10	49.00	1,358.20	-610.69	1,268.08	2,150.99	2,496.21	0.921	0.474	-0.789
3,827.62	90.20	50.20	1,358.15	-610.64	1,280.45	2,165.52	2,515.08	1.893	0.157	1.887
3,846.78	89.50	49.30	1,358.20	-610.69	1,292.83	2,180.15	2,534.04	1.785	-1.096	-1.409
3,865.75	89.00	49.00	1,358.45	-610.94	1,305.24	2,194.49	2,552.78	0.922	-0.791	-0.474
3,884.91	90.50	47.80	1,358.53	-611.02	1,317.96	2,208.82	2,571.66	3.008	2.349	-1.879
3,903.99	89.70	47.60	1,358.50	-610.99	1,330.80	2,222.93	2,590.43	1.297	-1.258	-0.314
3,923.03	88.80	47.20	1,358.75	-611.24	1,343.68	2,236.95	2,609.14	1.552	-1.418	-0.630
3,942.01	90.20	48.90	1,358.91	-611.40	1,356.37	2,251.06	2,627.83	3.481	2.213	2.687
3,960.95	89.80	49.70	1,358.91	-611.40	1,368.72	2,265.42	2,646.55	1.417	-0.634	1.267
3,979.92	90.00	50.60	1,358.95	-611.44	1,380.88	2,279.98	2,665.33	1.458	0.316	1.423
3,998.98	90.10	50.50	1,358.93	-611.42	1,392.99	2,294.70	2,684.23	0.223	0.157	-0.157
4,018.04	90.30	49.80	1,358.86	-611.35	1,405.20	2,309.34	2,703.11	1.146	0.315	-1.102
4,036.96	89.70	48.50	1,358.86	-611.35	1,417.58	2,323.65	2,721.80	2.270	-0.951	-2.061
Last Survey = 4055.92m										
4,055.92	89.10	48.70	1,359.06	-611.55	1,430.11	2,337.87	2,740.50	1.001	-0.949	0.316
Ext to TD = 4088.00m										
4,088.00	89.10	48.70	1,359.57	-612.06	1,451.28	2,361.97	2,772.15	0.000	0.000	0.000

Database:	Compass 5000 Canada	Local Co-ordinate Reference:	Well BLACKSPUR HZ LEDUC-WB 16-11-51-2
Company:	BLACKSPUR OIL CORP._N83	TVD Reference:	Actual KB @ 747.51m (Horizon 43)
Project:	Leduc-WB (NAD 83-Z11)	MD Reference:	Actual KB @ 747.51m (Horizon 43)
Site:	14-03-051-02W5	North Reference:	True
Well:	BLACKSPUR HZ LEDUC-WB 16-11-51-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	100/16-11-051-02W5/00	Well License	0502001
Design:	28333 Final Surveys		

Survey Annotations				
Measured Depth ()	Vertical Depth ()	Local Coordinates		Comment
		+N/-S ()	+E/-W ()	
5.50	5.50	0.00	0.00	KB-GL = 5.50m
271.00	270.96	2.64	1.05	Surf. Csg. = 271.00m
1,006.00	1,005.92	1.30	-2.96	KOP = 1006.00m
1,028.95	1,028.83	1.60	-1.93	DDE #1 = 21012022; 1028.95m; Dev
1,431.00	1,335.54	15.95	223.62	Start Tangent = 1431.00m
1,463.00	1,346.55	17.19	253.64	End Tangent = 1463.00m
1,523.42	1,360.64	19.45	312.25	DDE #2 = 22012022; 1523.42m; Hz
1,615.00	1,367.82	22.65	403.47	ICP = 1615.00m
1,925.35	1,366.14	58.24	709.90	Crossing Sec. 10 = 1925.35m
2,208.13	1,366.21	227.71	935.36	Crossing Sec. 11 = 2208.13
4,055.92	1,359.06	1,430.11	2,337.87	Last Survey = 4055.92m
4,088.00	1,359.57	1,451.28	2,361.97	Ext to TD = 4088.00m

Checked By: _____	Approved By: _____	Date: _____
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