

BISON OIL & GAS II

WELD COUNTY

SEC 18-T8N-R60W

ROSS 8-60 18-7-3

OWB

Design: FINAL SURVEY

Standard Survey Report

19 July, 2022

Project: WELD COUNTY
Site: SEC 18-T8N-R60W
Well: ROSS 8-60 18-7-3
Wellbore: OWB
Design: FINAL SURVEY

PROJECT DETAILS: WELD COUNTY
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level



Azimuths to True North
Magnetic North: 7.44°
Magnetic Field
Strength: 52056.4snT
Dip Angle: 66.91°
Date: 5/4/2022
Model: IGRF2020

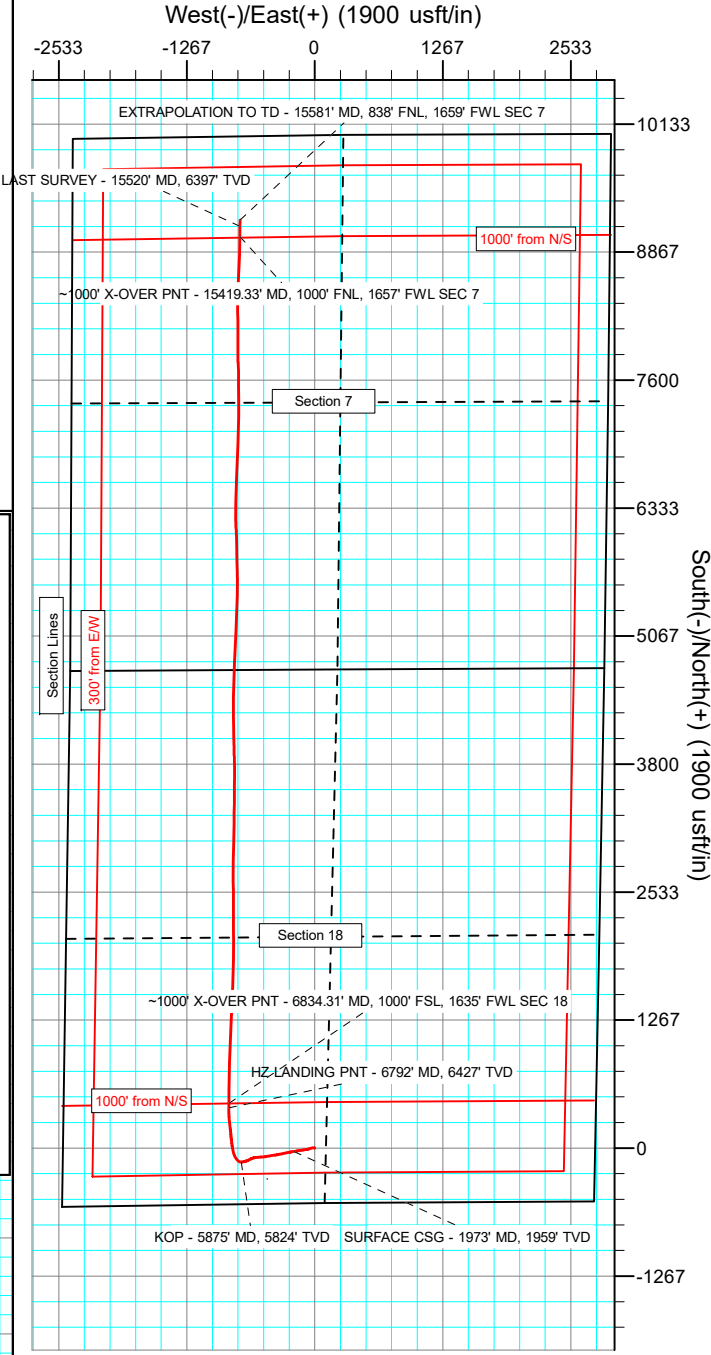
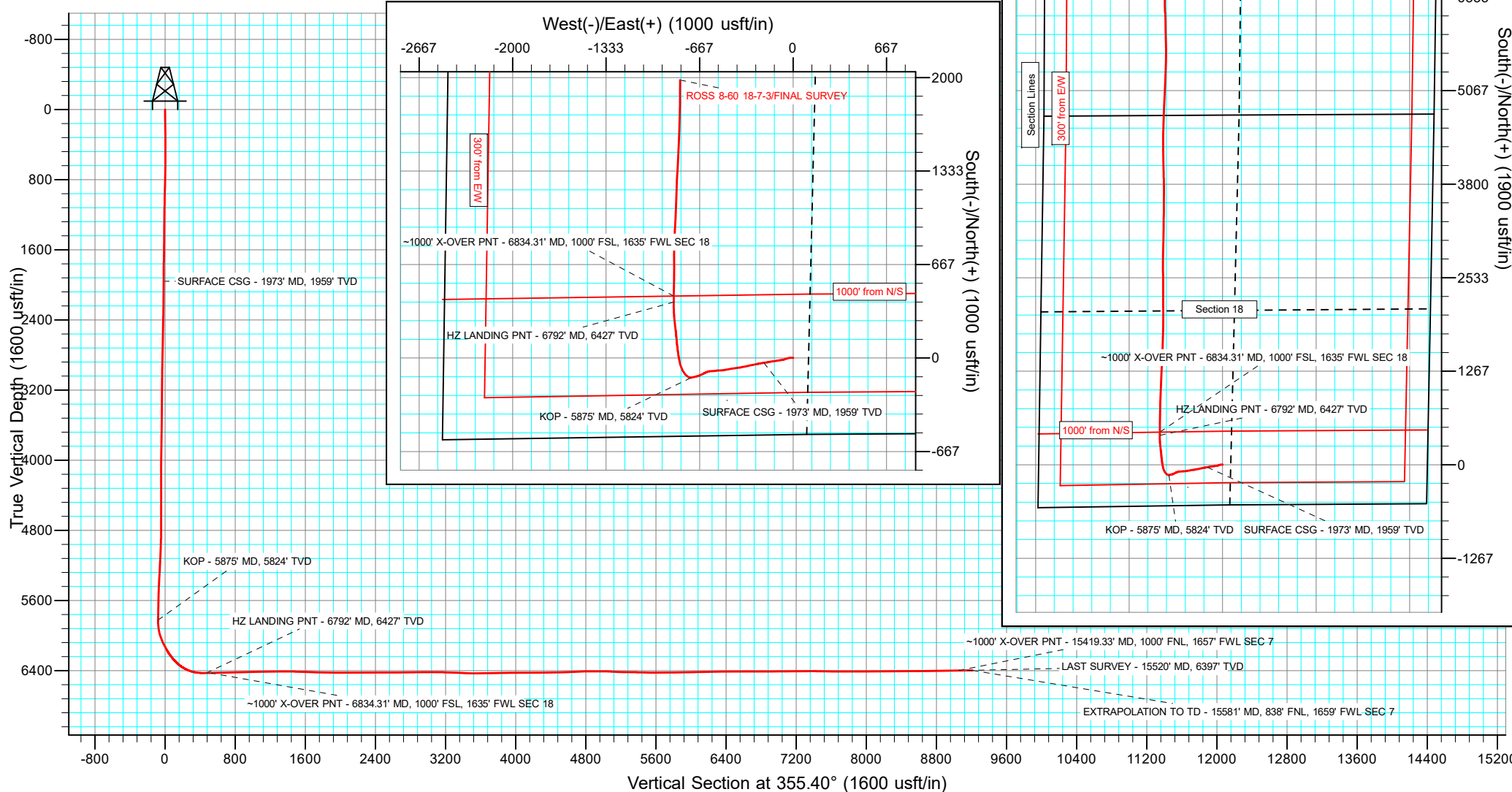
WELL DETAILS: ROSS 8-60 18-7-3

+N/-S	+E/-W	Northing	Easting	4950.00	Latitude	Longitude	Slot
0.00	0.00	1484916.21	3378728.30		40.656488°N	104.134946°W	

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
1973.00	6.67	263.30	1958.93	-33.85	-208.07	-17.04	212.54	SURFACE CSG - 1973' MD, 1959' TVD
5875.00	7.79	257.98	5823.59	-140.03	-728.94	-81.06	747.17	KOP - 5875' MD, 5824' TVD
6792.00	90.99	0.58	6426.66	399.65	-850.97	466.66	1325.08	HZ LANDING PNT - 6792' MD, 6427' TVD
6834.31	90.63	0.67	6426.06	441.95	-850.51	508.79	1367.38	~1000' X-OVER PNT - 6834.31' MD, 1000' FSL, 1635' FWL SEC 18
15419.33	91.33	0.67	6398.23	9021.90	-742.14	9052.36	9950.86	~1000' X-OVER PNT - 15419.33' MD, 1000' FNL, 1657' FWL SEC 7
15520.00	89.84	0.98	6397.34	9122.55	-740.60	9152.56	10051.52	LAST SURVEY - 15520' MD, 6397' TVD
15581.00	89.84	0.98	6397.51	9183.54	-739.55	9213.27	10112.52	EXTRAPOLATION TO TD - 15581' MD, 838' FNL, 1659' FWL SEC 7

SHL:
546' FSL, 2492' FWL
Sec 18-T8N-R60W
~1000' X-OVER PNT:
1000' FSL, 1635' FWL
Sec 18-T8N-R60W
~1000' X-OVER PNT:
1000' FNL, 1657' FWL
Sec 7-T8N-R60W
BHL:
838' FNL, 1659' FWL
Sec 7-T8N-R60W



Survey Report

Company:	BISON OIL & GAS II	Local Co-ordinate Reference:	Well ROSS 8-60 18-7-3
Project:	WELD COUNTY	TVD Reference:	KB 24' @ 4974.00usft
Site:	SEC 18-T8N-R60W	MD Reference:	KB 24' @ 4974.00usft
Well:	ROSS 8-60 18-7-3	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

Project	WELD COUNTY		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		SEC 18-T8N-R60W					
Site Position:		Northing:	1,484,295.38	usft	Latitude:	40.654889°N	
From:	Lat/Long	Easting:	3,376,236.78	usft	Longitude:	104.143959°W	
Position Uncertainty:	0.00	usft	Slot Radius:	13.200	in	Grid Convergence:	0.88 °

Well	ROSS 8-60 18-7-3					
Well Position	+N/-S	0.00 usft	Northing:	1,484,916.22 usft	Latitude:	40.656488°N
	+E/-W	0.00 usft	Easting:	3,378,728.29 usft	Longitude:	104.134946°W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,950.00 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	5/4/2022	7.44	66.91	52,056.41009372

Design	FINAL SURVEY				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	355.40	

Survey Program	Date	7/19/2022			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
157.00	1,907.00	SURFACE SURVEY (OWB)	MWD	OWSG MWD - Standard	
2,028.00	15,581.00	FINAL SURVEY (OWB)	MWD	OWSG MWD - Standard	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
157.00	0.80	306.56	156.99	0.65	-0.88	0.72	0.51	0.51	0.00	
246.00	1.15	305.06	245.98	1.54	-2.11	1.70	0.39	0.39	-1.69	
335.00	2.70	268.35	334.93	1.99	-4.94	2.38	2.14	1.74	-41.25	
424.00	4.07	267.47	423.77	1.79	-10.19	2.60	1.54	1.54	-0.99	
513.00	4.73	269.50	512.51	1.62	-17.01	2.98	0.76	0.74	2.28	
602.00	4.68	263.15	601.21	1.15	-24.29	3.10	0.59	-0.06	-7.13	
691.00	6.63	256.85	689.78	-0.45	-32.90	2.19	2.30	2.19	-7.08	
780.00	6.58	253.06	778.19	-3.10	-42.78	0.34	0.49	-0.06	-4.26	
869.00	6.27	250.95	866.63	-6.18	-52.25	-1.96	0.44	-0.35	-2.37	

Survey Report

Company:	BISON OIL & GAS II	Local Co-ordinate Reference:	Well ROSS 8-60 18-7-3
Project:	WELD COUNTY	TVD Reference:	KB 24' @ 4974.00usft
Site:	SEC 18-T8N-R60W	MD Reference:	KB 24' @ 4974.00usft
Well:	ROSS 8-60 18-7-3	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
958.00	6.58	250.33	955.07	-9.48	-61.64	-4.50	0.36	0.35	-0.70
1,047.00	7.95	259.80	1,043.35	-12.29	-72.50	-6.43	2.04	1.54	10.64
1,136.00	9.28	262.27	1,131.35	-14.34	-85.67	-7.42	1.55	1.49	2.78
1,225.00	9.77	260.82	1,219.12	-16.51	-100.24	-8.41	0.61	0.55	-1.63
1,314.00	10.34	259.76	1,306.75	-19.14	-115.55	-9.80	0.67	0.64	-1.19
1,403.00	9.28	262.49	1,394.45	-21.49	-130.53	-10.95	1.30	-1.19	3.07
1,492.00	8.44	262.76	1,482.39	-23.25	-144.12	-11.61	0.94	-0.94	0.30
1,581.00	8.62	260.95	1,570.40	-25.13	-157.19	-12.43	0.36	0.20	-2.03
1,670.00	9.19	259.45	1,658.33	-27.48	-170.76	-13.68	0.69	0.64	-1.69
1,760.00	7.20	255.31	1,747.41	-30.22	-183.29	-15.41	2.30	-2.21	-4.60
1,849.00	6.63	263.24	1,835.76	-32.24	-193.78	-16.58	1.25	-0.64	8.91
1,907.00	6.67	263.86	1,893.37	-33.00	-200.46	-16.80	0.14	0.07	1.07
1,973.00	6.67	263.30	1,958.93	-33.85	-208.07	-17.04	0.10	0.00	-0.84
SURFACE CSG - 1973' MD, 1959' TVD									
2,028.00	6.67	262.84	2,013.55	-34.62	-214.42	-17.30	0.10	0.00	-0.84
2,117.00	6.50	261.26	2,101.97	-36.03	-224.52	-17.90	0.28	-0.19	-1.78
2,206.00	5.92	261.08	2,190.44	-37.51	-234.04	-18.60	0.65	-0.65	-0.20
2,296.00	7.34	254.52	2,279.84	-39.77	-244.16	-20.04	1.79	1.58	-7.29
2,385.00	9.54	259.76	2,367.87	-42.59	-256.90	-21.84	2.62	2.47	5.89
2,474.00	9.28	258.70	2,455.68	-45.31	-271.20	-23.40	0.35	-0.29	-1.19
2,563.00	8.97	258.31	2,543.55	-48.12	-285.03	-25.09	0.36	-0.35	-0.44
2,652.00	8.71	257.78	2,631.49	-50.96	-298.41	-26.84	0.31	-0.29	-0.60
2,741.00	8.48	258.08	2,719.49	-53.74	-311.42	-28.57	0.26	-0.26	0.34
2,830.00	8.13	257.25	2,807.56	-56.48	-323.97	-30.29	0.42	-0.39	-0.93
2,919.00	7.82	260.07	2,895.70	-58.91	-336.08	-31.75	0.56	-0.35	3.17
3,008.00	7.64	258.08	2,983.89	-61.18	-347.83	-33.06	0.36	-0.20	-2.24
3,097.00	7.34	258.88	3,072.13	-63.50	-359.20	-34.46	0.36	-0.34	0.90
3,186.00	6.81	258.26	3,160.45	-65.67	-369.94	-35.76	0.60	-0.60	-0.70
3,275.00	6.10	257.86	3,248.89	-67.74	-379.73	-37.04	0.80	-0.80	-0.45
3,364.00	6.89	267.16	3,337.32	-69.00	-389.69	-37.49	1.48	0.89	10.45
3,453.00	8.44	261.83	3,425.52	-70.19	-401.48	-37.74	1.91	1.74	-5.99
3,543.00	8.48	261.39	3,514.54	-72.12	-414.58	-38.61	0.08	0.04	-0.49
3,632.00	8.66	260.95	3,602.55	-74.16	-427.69	-39.59	0.22	0.20	-0.49
3,721.00	8.66	259.01	3,690.53	-76.49	-440.88	-40.85	0.33	0.00	-2.18
3,810.00	8.53	260.73	3,778.53	-78.83	-453.97	-42.13	0.32	-0.15	1.93
3,899.00	8.84	259.45	3,866.51	-81.15	-467.21	-43.38	0.41	0.35	-1.44
3,988.00	8.71	260.77	3,954.47	-83.48	-480.59	-44.63	0.27	-0.15	1.48
4,077.00	8.00	260.42	4,042.53	-85.59	-493.34	-45.71	0.80	-0.80	-0.39
4,166.00	7.78	264.70	4,130.69	-87.18	-505.45	-46.32	0.70	-0.25	4.81
4,255.00	7.16	267.25	4,218.93	-88.00	-516.99	-46.22	0.79	-0.70	2.87
4,344.00	6.50	269.89	4,307.30	-88.28	-527.57	-45.64	0.82	-0.74	2.97
4,433.00	8.04	263.15	4,395.58	-89.03	-538.78	-45.49	1.98	1.73	-7.57
4,523.00	9.10	262.80	4,484.58	-90.67	-552.09	-46.06	1.18	1.18	-0.39

Survey Report

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Project:	WELD COUNTY	TVD Reference:	KB 24' @ 4974.00usft
Site:	SEC 18-T8N-R60W	MD Reference:	KB 24' @ 4974.00usft
Well:	ROSS 8-60 18-7-3	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,612.00	8.35	264.47	4,572.54	-92.18	-565.51	-46.48	0.89	-0.84	1.88
4,701.00	7.20	267.38	4,660.73	-93.05	-577.51	-46.40	1.37	-1.29	3.27
4,790.00	6.14	269.19	4,749.12	-93.37	-587.84	-45.89	1.21	-1.19	2.03
4,879.00	5.79	259.54	4,837.64	-94.26	-597.02	-46.03	1.19	-0.39	-10.84
4,968.00	7.25	249.84	4,926.07	-97.01	-606.71	-47.99	2.05	1.64	-10.90
5,057.00	8.04	248.65	5,014.28	-101.21	-617.77	-51.29	0.91	0.89	-1.34
5,147.00	6.54	245.57	5,103.55	-105.62	-628.30	-54.85	1.72	-1.67	-3.42
5,236.00	7.64	243.32	5,191.86	-110.37	-638.20	-58.79	1.27	1.24	-2.53
5,325.00	8.62	243.32	5,279.97	-116.02	-649.45	-63.52	1.10	1.10	0.00
5,414.00	8.75	245.22	5,367.95	-121.86	-661.56	-68.36	0.35	0.15	2.13
5,503.00	9.50	253.55	5,455.82	-126.77	-674.75	-72.20	1.70	0.84	9.36
5,614.00	7.56	252.31	5,565.59	-131.59	-690.49	-75.74	1.76	-1.75	-1.12
5,703.00	9.19	261.39	5,653.64	-134.43	-703.10	-77.56	2.35	1.83	10.20
5,792.00	9.19	255.84	5,741.50	-137.23	-717.01	-79.24	1.00	0.00	-6.24
5,875.00	7.79	257.98	5,823.59	-140.03	-728.94	-81.06	1.73	-1.69	2.58
KOP - 5875' MD, 5824' TVD									
5,881.00	7.69	258.17	5,829.54	-140.19	-729.73	-81.16	1.73	-1.68	3.08
5,970.00	15.91	298.89	5,916.71	-135.51	-746.30	-75.16	12.62	9.24	45.75
6,059.00	21.65	316.25	6,001.00	-117.72	-768.37	-55.67	8.94	6.45	19.51
6,149.00	26.73	333.84	6,083.18	-87.50	-788.81	-23.90	9.74	5.64	19.54
6,238.00	30.58	343.53	6,161.31	-47.79	-804.07	16.90	6.77	4.33	10.89
6,327.00	37.56	351.11	6,235.02	0.80	-814.70	66.19	9.17	7.84	8.52
6,416.00	44.85	352.57	6,301.93	58.80	-822.96	124.67	8.26	8.19	1.64
6,505.00	56.47	354.86	6,358.26	127.11	-830.36	193.35	13.21	13.06	2.57
6,594.00	68.80	353.98	6,399.09	205.62	-838.07	272.23	13.88	13.85	-0.99
6,683.00	81.84	354.06	6,421.60	291.06	-847.02	358.11	14.65	14.65	0.09
6,772.00	91.16	0.54	6,427.03	379.65	-851.17	446.75	12.74	10.47	7.28
6,792.00	90.99	0.58	6,426.66	399.65	-850.97	466.66	0.87	-0.84	0.20
HZ LANDING PNT - 6792' MD, 6427' TVD									
6,834.31	90.63	0.67	6,426.06	441.95	-850.51	508.79	0.87	-0.84	0.20
~1000' X-OVER PNT - 6834.31' MD, 1000' FSL, 1635' FWL SEC 18									
6,861.00	90.41	0.72	6,425.81	468.64	-850.19	535.37	0.87	-0.84	0.20
6,950.00	91.78	1.16	6,424.11	557.60	-848.73	623.93	1.62	1.54	0.49
7,039.00	91.69	359.88	6,421.42	646.56	-847.92	712.54	1.44	-0.10	-1.44
7,128.00	91.74	359.84	6,418.75	735.52	-848.14	801.23	0.07	0.06	-0.04
7,217.00	91.34	2.79	6,416.36	824.45	-846.10	889.71	3.34	-0.45	3.31
7,306.00	91.69	2.35	6,414.01	913.33	-842.11	977.98	0.63	0.39	-0.49
7,395.00	90.59	2.97	6,412.24	1,002.22	-837.98	1,066.25	1.42	-1.24	0.70
7,484.00	91.47	2.08	6,410.64	1,091.11	-834.06	1,154.54	1.41	0.99	-1.00
7,573.00	89.17	1.38	6,410.14	1,180.07	-831.37	1,242.99	2.70	-2.58	-0.79
7,662.00	90.99	2.83	6,410.02	1,269.00	-828.11	1,331.38	2.61	2.04	1.63
7,751.00	89.79	3.89	6,409.41	1,357.84	-822.89	1,419.51	1.80	-1.35	1.19
7,840.00	87.80	2.30	6,411.28	1,446.68	-818.09	1,507.68	2.86	-2.24	-1.79
7,930.00	88.33	2.39	6,414.32	1,536.56	-814.41	1,596.97	0.60	0.59	0.10

Survey Report

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Project:	WELD COUNTY	TVD Reference:	KB 24' @ 4974.00usft
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Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,019.00	87.85	1.91	6,417.29	1,625.44	-811.07	1,685.30	0.76	-0.54	-0.54
8,108.00	89.04	1.64	6,419.70	1,714.37	-808.31	1,773.72	1.37	1.34	-0.30
8,197.00	88.73	0.41	6,421.43	1,803.33	-806.72	1,862.27	1.42	-0.35	-1.38
8,286.00	89.22	0.45	6,423.03	1,892.32	-806.05	1,950.91	0.55	0.55	0.04
8,375.00	90.23	0.37	6,423.45	1,981.31	-805.42	2,039.57	1.14	1.13	-0.09
8,464.00	90.50	359.75	6,422.89	2,070.31	-805.32	2,128.27	0.76	0.30	-0.70
8,553.00	91.56	359.35	6,421.29	2,159.29	-806.02	2,217.02	1.27	1.19	-0.45
8,642.00	89.44	359.79	6,420.51	2,248.28	-806.69	2,305.78	2.43	-2.38	0.49
8,731.00	90.54	0.10	6,420.53	2,337.28	-806.77	2,394.50	1.28	1.24	0.35
8,820.00	89.17	0.37	6,420.75	2,426.28	-806.41	2,483.18	1.57	-1.54	0.30
8,909.00	90.28	359.75	6,421.18	2,515.27	-806.32	2,571.88	1.43	1.25	-0.70
8,998.00	91.21	359.31	6,420.02	2,604.26	-807.05	2,660.64	1.16	1.04	-0.49
9,087.00	90.15	359.62	6,418.96	2,693.25	-807.88	2,749.41	1.24	-1.19	0.35
9,176.00	91.16	0.67	6,417.95	2,782.24	-807.65	2,838.09	1.64	1.13	1.18
9,266.00	89.22	0.98	6,417.65	2,872.23	-806.36	2,927.69	2.18	-2.16	0.34
9,355.00	90.01	1.47	6,418.25	2,961.20	-804.45	3,016.22	1.04	0.89	0.55
9,444.00	90.63	0.63	6,417.75	3,050.19	-802.82	3,104.79	1.17	0.70	-0.94
9,533.00	87.85	1.56	6,418.93	3,139.15	-801.12	3,193.33	3.29	-3.12	1.04
9,622.00	87.89	1.11	6,422.24	3,228.07	-799.05	3,281.79	0.51	0.04	-0.51
9,711.00	87.94	0.59	6,425.48	3,317.00	-797.73	3,370.33	0.59	0.06	-0.58
9,800.00	87.63	0.01	6,428.92	3,405.93	-797.27	3,458.94	0.74	-0.35	-0.65
9,889.00	90.68	0.76	6,430.23	3,494.91	-796.67	3,547.58	3.53	3.43	0.84
9,978.00	91.74	0.19	6,428.35	3,583.88	-795.93	3,636.21	1.35	1.19	-0.64
10,067.00	90.68	0.76	6,426.47	3,672.86	-795.19	3,724.84	1.35	-1.19	0.64
10,156.00	90.37	359.53	6,425.65	3,761.85	-794.97	3,813.53	1.43	-0.35	-1.38
10,246.00	89.66	358.38	6,425.63	3,851.83	-796.61	3,903.35	1.50	-0.79	-1.28
10,335.00	91.25	359.40	6,424.92	3,940.81	-798.33	3,992.18	2.12	1.79	1.15
10,424.00	90.59	357.37	6,423.49	4,029.76	-800.84	4,081.04	2.40	-0.74	-2.28
10,513.00	90.54	358.96	6,422.62	4,118.71	-803.69	4,169.93	1.79	-0.06	1.79
10,602.00	90.19	359.84	6,422.05	4,207.70	-804.62	4,258.71	1.06	-0.39	0.99
10,691.00	90.50	359.04	6,421.51	4,296.69	-805.49	4,347.48	0.96	0.35	-0.90
10,780.00	90.94	0.10	6,420.40	4,385.68	-806.16	4,436.24	1.29	0.49	1.19
10,869.00	91.30	1.78	6,418.66	4,474.65	-804.70	4,524.80	1.93	0.40	1.89
10,958.00	92.58	1.60	6,415.64	4,563.56	-802.08	4,613.21	1.45	1.44	-0.20
11,047.00	93.02	1.16	6,411.30	4,652.42	-799.94	4,701.62	0.70	0.49	-0.49
11,136.00	90.23	1.73	6,408.77	4,741.35	-797.69	4,790.08	3.20	-3.13	0.64
11,225.00	90.01	3.19	6,408.59	4,830.27	-793.87	4,878.40	1.66	-0.25	1.64
11,314.00	90.94	3.05	6,407.85	4,919.13	-789.03	4,966.59	1.06	1.04	-0.16
11,403.00	87.63	2.70	6,408.96	5,008.00	-784.57	5,054.82	3.74	-3.72	-0.39
11,492.00	86.96	2.52	6,413.16	5,096.81	-780.52	5,143.01	0.78	-0.75	-0.20
11,581.00	88.64	2.35	6,416.57	5,185.66	-776.74	5,231.27	1.90	1.89	-0.19
11,670.00	89.84	2.66	6,417.75	5,274.56	-772.85	5,319.58	1.39	1.35	0.35
11,759.00	88.56	1.51	6,419.00	5,363.49	-769.61	5,407.96	1.93	-1.44	-1.29

Survey Report

Company:	BISON OIL & GAS II	Local Co-ordinate Reference:	Well ROSS 8-60 18-7-3
Project:	WELD COUNTY	TVD Reference:	KB 24' @ 4974.00usft
Site:	SEC 18-T8N-R60W	MD Reference:	KB 24' @ 4974.00usft
Well:	ROSS 8-60 18-7-3	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
11,848.00	88.51	0.81	6,421.27	5,452.45	-767.81	5,496.48	0.79	-0.06	-0.79	
11,937.00	89.62	0.50	6,422.73	5,541.43	-766.79	5,585.10	1.29	1.25	-0.35	
12,026.00	90.06	359.44	6,422.97	5,630.42	-766.84	5,673.81	1.29	0.49	-1.19	
12,115.00	91.16	358.87	6,422.03	5,719.41	-768.15	5,762.61	1.39	1.24	-0.64	
12,205.00	92.05	358.51	6,419.51	5,809.35	-770.21	5,852.43	1.07	0.99	-0.40	
12,294.00	91.12	359.66	6,417.04	5,898.30	-771.63	5,941.21	1.66	-1.04	1.29	
12,383.00	90.32	358.03	6,415.93	5,987.27	-773.42	6,030.03	2.04	-0.90	-1.83	
12,472.00	90.99	357.68	6,414.91	6,076.20	-776.75	6,118.95	0.85	0.75	-0.39	
12,561.00	91.83	357.32	6,412.72	6,165.09	-780.63	6,207.86	1.03	0.94	-0.40	
12,650.00	90.10	359.04	6,411.22	6,254.03	-783.46	6,296.73	2.74	-1.94	1.93	
12,739.00	89.93	0.45	6,411.20	6,343.02	-783.86	6,385.47	1.60	-0.19	1.58	
12,828.00	91.34	1.47	6,410.21	6,432.00	-782.37	6,474.05	1.96	1.58	1.15	
12,917.00	89.84	2.97	6,409.29	6,520.92	-778.92	6,562.41	2.38	-1.69	1.69	
13,006.00	90.01	3.19	6,409.41	6,609.80	-774.14	6,650.61	0.31	0.19	0.25	
13,096.00	90.19	2.79	6,409.25	6,699.67	-769.44	6,739.82	0.49	0.20	-0.44	
13,185.00	90.06	1.69	6,409.06	6,788.60	-765.96	6,828.18	1.24	-0.15	-1.24	
13,274.00	90.15	1.56	6,408.89	6,877.57	-763.44	6,916.66	0.18	0.10	-0.15	
13,363.00	90.32	1.69	6,408.53	6,966.53	-760.92	7,005.13	0.24	0.19	0.15	
13,452.00	90.63	1.38	6,407.79	7,055.50	-758.53	7,093.62	0.49	0.35	-0.35	
13,541.00	90.99	1.33	6,406.53	7,144.46	-756.43	7,182.13	0.41	0.40	-0.06	
13,630.00	89.93	1.25	6,405.82	7,233.43	-754.42	7,270.65	1.19	-1.19	-0.09	
13,719.00	90.68	0.50	6,405.35	7,322.42	-753.06	7,359.24	1.19	0.84	-0.84	
13,808.00	88.38	359.35	6,406.08	7,411.41	-753.18	7,447.95	2.89	-2.58	-1.29	
13,897.00	89.13	359.40	6,408.01	7,500.38	-754.15	7,536.72	0.84	0.84	0.06	
13,986.00	89.75	0.59	6,408.88	7,589.38	-754.16	7,625.42	1.51	0.70	1.34	
14,075.00	89.88	358.21	6,409.17	7,678.37	-755.09	7,714.20	2.68	0.15	-2.67	
14,164.00	89.62	356.84	6,409.56	7,767.28	-758.93	7,803.14	1.57	-0.29	-1.54	
14,253.00	89.62	0.28	6,410.15	7,856.24	-761.17	7,891.99	3.87	0.00	3.87	
14,342.00	90.10	0.54	6,410.36	7,945.23	-760.53	7,980.64	0.61	0.54	0.29	
14,431.00	90.77	0.06	6,409.69	8,034.23	-760.07	8,069.31	0.93	0.75	-0.54	
14,520.00	91.21	359.97	6,408.15	8,123.22	-760.04	8,158.01	0.50	0.49	-0.10	
14,609.00	90.37	358.43	6,406.92	8,212.20	-761.29	8,246.80	1.97	-0.94	-1.73	
14,698.00	89.97	357.37	6,406.66	8,301.13	-764.55	8,335.72	1.27	-0.45	-1.19	
14,787.00	90.54	2.13	6,406.26	8,390.11	-764.94	8,424.43	5.39	0.64	5.35	
14,876.00	90.59	1.38	6,405.38	8,479.06	-762.21	8,512.88	0.84	0.06	-0.84	
14,966.00	90.68	3.93	6,404.39	8,568.95	-758.04	8,602.15	2.83	0.10	2.83	
15,055.00	90.46	2.88	6,403.50	8,657.79	-752.76	8,690.27	1.21	-0.25	-1.18	
15,144.00	90.37	2.04	6,402.86	8,746.70	-748.94	8,778.59	0.95	-0.10	-0.94	
15,233.00	90.77	1.73	6,401.97	8,835.65	-746.01	8,867.02	0.57	0.45	-0.35	
15,322.00	91.16	1.25	6,400.47	8,924.61	-743.70	8,955.50	0.69	0.44	-0.54	
15,411.00	91.47	0.63	6,398.43	9,013.57	-742.24	9,044.06	0.78	0.35	-0.70	
15,419.33	91.33	0.67	6,398.23	9,021.90	-742.14	9,052.36	1.74	-1.69	0.45	
~1000' X-OVER PNT - 15419.33' MD, 1000' FNL, 1657' FWL SEC 7										
15,500.00	89.97	1.03	6,397.31	9,102.55	-740.95	9,132.65	1.74	-1.69	0.45	

Survey Report

Company:	BISON OIL & GAS II	Local Co-ordinate Reference:	Well ROSS 8-60 18-7-3
Project:	WELD COUNTY	TVD Reference:	KB 24' @ 4974.00usft
Site:	SEC 18-T8N-R60W	MD Reference:	KB 24' @ 4974.00usft
Well:	ROSS 8-60 18-7-3	North Reference:	True
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEY	Database:	EDT_32Bit_ODBC

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
15,520.00	89.84	0.98	6,397.34	9,122.55	-740.60	9,152.56	0.70	-0.65	-0.25	
LAST SURVEY - 15520' MD, 6397' TVD										
15,581.00	89.84	0.98	6,397.52	9,183.54	-739.55	9,213.27	0.00	0.00	0.00	
EXTRAPOLATION TO TD - 15581' MD, 838' FNL, 1659' FWL SEC 7										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
LP-ROSS 8-60 3	0.00	0.00	6,405.00	441.95	-815.72	1,485,345.55	3,377,905.88	40.657701°N	104.137886°W	
- actual wellpath misses target center by 40.66usft at 6834.93usft MD (6426.05 TVD, 442.56 N, -850.51 E)										
- Point										
PBHL-ROSS 8-60 3	0.00	0.00	6,420.00	9,172.00	-728.62	1,494,075.75	3,377,858.59	40.681663°N	104.137573°W	
- actual wellpath misses target center by 25.12usft at 15569.71usft MD (6397.48 TVD, 9172.25 N, -739.75 E)										
- Point										
EPI-ROSS 8-60 3	0.00	0.00	6,420.00	9,021.90	-729.46	1,493,925.65	3,377,860.06	40.681251°N	104.137576°W	
- actual wellpath misses target center by 25.20usft at 15418.94usft MD (6398.24 TVD, 9021.51 N, -742.15 E)										
- Point										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,973.00	1,958.93	-33.85	-208.07	SURFACE CSG - 1973' MD, 1959' TVD	
5,875.00	5,823.59	-140.03	-728.94	KOP - 5875' MD, 5824' TVD	
6,792.00	6,426.66	399.65	-850.97	HZ LANDING PNT - 6792' MD, 6427' TVD	
6,834.31	6,426.06	441.95	-850.51	~1000' X-OVER PNT - 6834.31' MD, 1000' FSL, 1635' FWL SEC 18	
15,419.33	6,398.23	9,021.90	-742.14	~1000' X-OVER PNT - 15419.33' MD, 1000' FNL, 1657' FWL SEC 7	
15,520.00	6,397.34	9,122.55	-740.60	LAST SURVEY - 15520' MD, 6397' TVD	
15,581.00	6,397.52	9,183.54	-739.55	EXTRAPOLATION TO TD - 15581' MD, 838' FNL, 1659' FWL SEC 7	

Checked By: _____ Approved By: _____ Date: _____