

BISON OIL & GAS II

**WELD COUNTY
SEC 18-T8N-R60W
ROSS 8-60 18-7-5**

OWB

Design: FINAL SURVEY

Standard Survey Report

07 June, 2022

Project: WELD COUNTY
Site: SEC 18-T8N-R60W
Well: ROSS 8-60 18-7-5
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

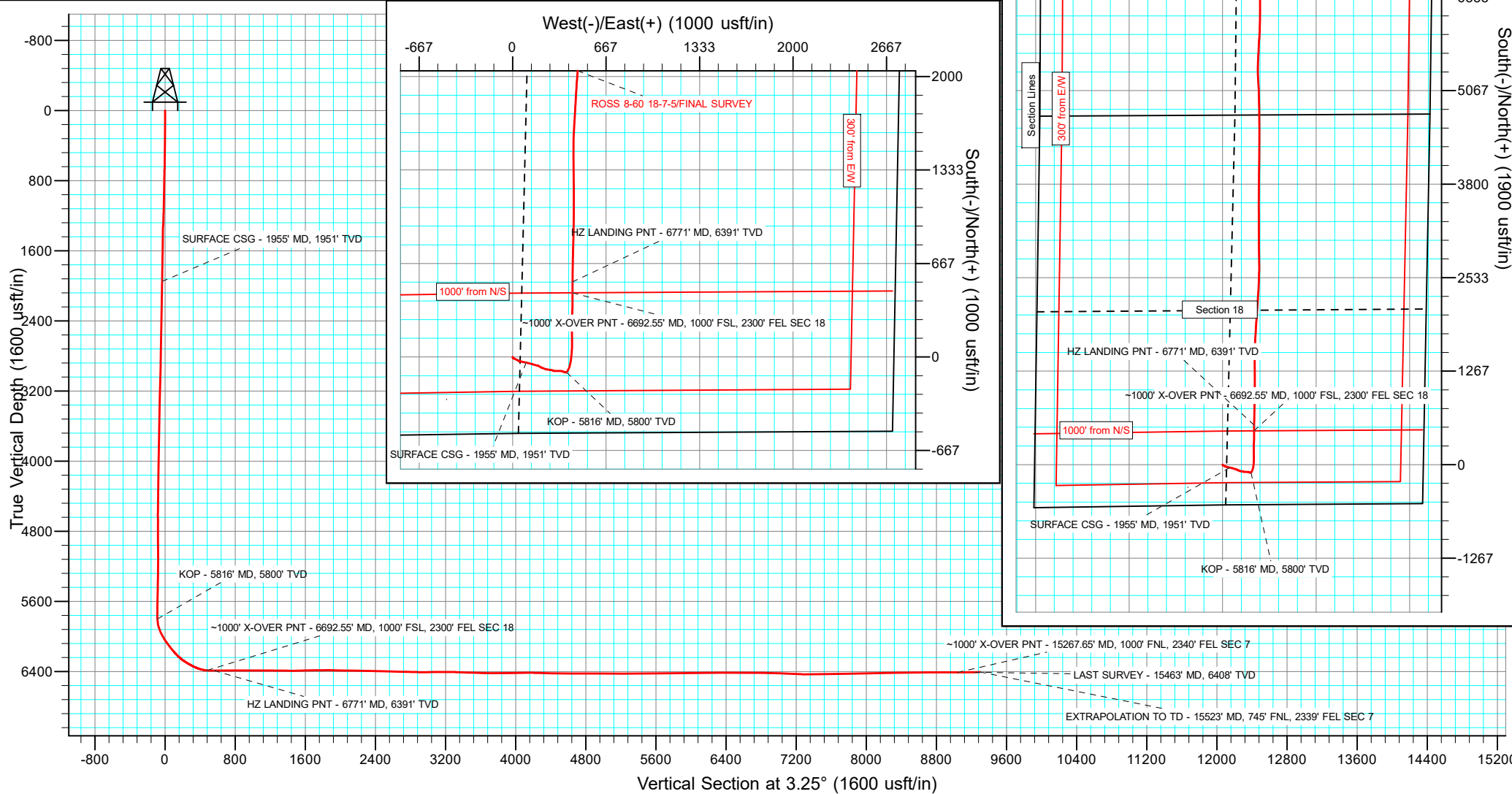
WELL DETAILS: ROSS 8-60 18-7-5

+N/-S	+E/-W	Northing	Easting	4951.00	Latitude	Longitude	Slot
0.00	0.00	1484917.44	3378784.05	40.656489°N	104.134745°W		

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
1955.00	5.63	102.33	1950.73	-40.09	96.87	-34.53	109.35	SURFACE CSG - 1955' MD, 1951' TVD
5816.00	3.70	55.47	5799.85	-110.52	385.12	-88.48	410.82	KOP - 5816' MD, 5800' TVD
6692.55	86.23	357.95	6387.53	457.24	427.84	480.78	984.97	~1000' X-OVER PNT - 6692.55' MD, 1000' FSL, 2300' FEL SEC 18
6771.00	89.34	0.71	6390.56	535.61	426.93	558.97	1063.36	HZ LANDING PNT - 6771' MD, 6391' TVD
15267.65	90.41	1.13	6409.51	9026.63	525.61	9041.91	9558.52	~1000' X-OVER PNT - 15267.65' MD, 1000' FNL, 2340' FEL SEC 7
15463.00	91.03	0.23	6407.51	9221.96	527.40	9237.03	9753.86	LAST SURVEY - 15463' MD, 6408' TVD
15523.00	91.03	0.23	6406.44	9281.95	527.64	9296.93	9813.85	EXTRAPOLATION TO TD - 15523' MD, 745' FNL, 2339' FEL SEC 7

SHL:
545' FSL, 2548' FWL
Sec 18-T8N-R60W
~1000' X-OVER PNT:
1000' FSL, 2300' FEL
Sec 18-T8N-R60W
~1000' X-OVER PNT:
1000' FNL, 2340' FEL
Sec 7-T8N-R60W
BHL:
745' FNL, 2339' FEL
Sec 7-T8N-R60W



Survey Report

Company:	BISON OIL & GAS II	Local Co-ordinate Reference:	Well ROSS 8-60 18-7-5
Project:	WELD COUNTY	TVD Reference:	KB 24' @ 4975.00usft
Site:	SEC 18-T8N-R60W	MD Reference:	KB 24' @ 4975.00usft
Well:	ROSS 8-60 18-7-5	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 18-7-5					
Well Position	+N/-S	0.00 usft	Northing:	1,484,917.44 usft	Latitude:	40.656489°N
	+E/-W	0.00 usft	Easting:	3,378,784.05 usft	Longitude:	104.134745°W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,951.00 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	5/4/2022	7.44	66.91	52,056.42245968

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	3.25	

Survey Program	Date	6/7/2022			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
157.00	1,897.00	SURFACE SURVEY (OWB)	MWD	OWSG MWD - Standard	
2,027.00	15,523.00	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	0.40	150.60	157.00	-0.48	0.27	-0.46	0.25	0.25	0.00	
246.00	0.57	161.80	246.00	-1.17	0.56	-1.14	0.22	0.19	12.58	
335.00	0.44	157.57	334.99	-1.91	0.83	-1.85	0.15	-0.15	-4.75	
424.00	1.02	174.00	423.98	-3.01	1.04	-2.94	0.69	0.65	18.46	
513.00	0.67	182.02	512.97	-4.32	1.11	-4.25	0.41	-0.39	9.01	
602.00	1.28	175.77	601.96	-5.83	1.16	-5.75	0.69	0.69	-7.02	
691.00	2.61	116.28	690.92	-7.72	3.05	-7.53	2.53	1.49	-66.84	
781.00	3.18	121.21	780.80	-9.92	7.02	-9.50	0.69	0.63	5.48	
869.00	3.00	110.42	868.67	-11.99	11.27	-11.33	0.69	-0.20	-12.26	

Survey Report

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Site:	SEC 18-T8N-R60W	MD Reference:	KB 24' @ 4975.00usft
Well:	ROSS 8-60 18-7-5	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	3.49	110.90	957.53	-13.76	15.98	-12.84	0.55	0.55	0.54
1,047.00	3.67	112.79	1,046.36	-15.83	21.14	-14.61	0.24	0.20	2.12
1,136.00	3.80	116.01	1,135.17	-18.23	26.42	-16.70	0.28	0.15	3.62
1,225.00	4.64	119.23	1,223.93	-21.28	32.21	-19.42	0.98	0.94	3.62
1,315.00	4.85	126.59	1,313.62	-25.33	38.44	-23.11	0.71	0.23	8.18
1,404.00	4.64	105.57	1,402.32	-28.54	44.93	-25.94	1.96	-0.24	-23.62
1,493.00	4.86	101.56	1,491.01	-30.26	52.09	-27.25	0.45	0.25	-4.51
1,582.00	5.52	104.77	1,579.65	-32.11	59.92	-28.65	0.81	0.74	3.61
1,671.00	5.79	102.92	1,668.22	-34.20	68.44	-30.26	0.37	0.30	-2.08
1,760.00	6.10	102.13	1,756.74	-36.20	77.44	-31.75	0.36	0.35	-0.89
1,849.00	5.92	99.49	1,845.25	-37.95	86.59	-32.97	0.37	-0.20	-2.97
1,897.00	5.61	102.57	1,893.01	-38.87	91.32	-33.62	0.91	-0.65	6.42
1,955.00	5.63	102.33	1,950.73	-40.09	96.87	-34.53	0.06	0.04	-0.41
SURFACE CSG - 1955' MD, 1951' TVD									
2,027.00	5.66	102.04	2,022.38	-41.59	103.79	-35.63	0.06	0.04	-0.41
2,117.00	5.57	104.91	2,111.95	-43.64	112.35	-37.19	0.33	-0.10	3.19
2,206.00	5.26	103.41	2,200.55	-45.69	120.49	-38.78	0.38	-0.35	-1.69
2,295.00	5.13	106.89	2,289.18	-47.80	128.27	-40.44	0.38	-0.15	3.91
2,384.00	4.91	105.08	2,377.84	-49.94	135.75	-42.16	0.30	-0.25	-2.03
2,473.00	4.68	107.51	2,466.53	-52.03	142.89	-43.83	0.34	-0.26	2.73
2,562.00	4.42	106.32	2,555.25	-54.08	149.65	-45.50	0.31	-0.29	-1.34
2,682.00	4.60	105.74	2,674.88	-56.69	158.72	-47.59	0.15	0.15	-0.48
2,771.00	4.42	105.96	2,763.60	-58.60	165.45	-49.11	0.20	-0.20	0.25
2,860.00	4.15	104.55	2,852.35	-60.35	171.86	-50.50	0.33	-0.30	-1.58
2,949.00	3.89	100.81	2,941.13	-61.73	177.95	-51.53	0.41	-0.29	-4.20
3,038.00	4.33	117.64	3,029.91	-63.85	183.89	-53.31	1.44	0.49	18.91
3,127.00	3.89	119.67	3,118.68	-66.90	189.49	-56.04	0.52	-0.49	2.28
3,216.00	3.89	116.67	3,207.47	-69.75	194.81	-58.59	0.23	0.00	-3.37
3,305.00	3.84	115.57	3,296.27	-72.40	200.19	-60.92	0.10	-0.06	-1.24
3,394.00	3.45	115.66	3,385.09	-74.84	205.30	-63.07	0.44	-0.44	0.10
3,484.00	4.55	112.05	3,474.87	-77.35	211.05	-65.25	1.25	1.22	-4.01
3,573.00	4.73	111.38	3,563.58	-80.02	217.74	-67.53	0.21	0.20	-0.75
3,662.00	4.91	110.77	3,652.27	-82.71	224.71	-69.82	0.21	0.20	-0.69
3,751.00	4.91	111.25	3,740.94	-85.44	231.83	-72.14	0.05	0.00	0.54
3,840.00	4.95	100.98	3,829.61	-87.55	239.14	-73.83	0.99	0.04	-11.54
3,929.00	4.91	99.97	3,918.28	-88.94	246.67	-74.80	0.11	-0.04	-1.13
4,018.00	4.64	101.12	4,006.97	-90.29	253.95	-75.73	0.32	-0.30	1.29
4,107.00	4.29	98.16	4,095.70	-91.46	260.78	-76.51	0.47	-0.39	-3.33
4,196.00	4.37	91.42	4,184.45	-92.02	267.46	-76.69	0.58	0.09	-7.57
4,285.00	4.46	102.66	4,273.19	-92.86	274.23	-77.15	0.98	0.10	12.63
4,374.00	3.89	103.58	4,361.95	-94.33	280.54	-78.25	0.64	-0.64	1.03
4,464.00	4.20	109.84	4,451.73	-96.16	286.61	-79.74	0.60	0.34	6.96
4,553.00	3.45	115.26	4,540.53	-98.41	292.09	-81.67	0.93	-0.84	6.09

Survey Report

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Project:	WELD COUNTY	TVD Reference:	KB 24' @ 4975.00usft
Site:	SEC 18-T8N-R60W	MD Reference:	KB 24' @ 4975.00usft
Well:	ROSS 8-60 18-7-5	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)	
4,642.00	5.26	93.36	4,629.27	-99.79	298.59	-82.68	2.73	2.03	-24.61	
4,731.00	5.44	87.76	4,717.89	-99.87	306.88	-82.29	0.62	0.20	-6.29	
4,820.00	5.61	89.70	4,806.47	-99.68	315.44	-81.62	0.28	0.19	2.18	
4,909.00	4.60	88.56	4,895.12	-99.57	323.36	-81.05	1.14	-1.13	-1.28	
4,998.00	4.20	89.13	4,983.86	-99.43	330.19	-80.53	0.45	-0.45	0.64	
5,087.00	3.62	86.97	5,072.65	-99.23	336.25	-79.99	0.67	-0.65	-2.43	
5,177.00	4.73	98.78	5,162.41	-99.65	342.76	-80.03	1.55	1.23	13.12	
5,266.00	4.42	101.03	5,251.13	-100.86	349.75	-80.85	0.40	-0.35	2.53	
5,355.00	4.24	110.06	5,339.87	-102.65	356.21	-82.26	0.79	-0.20	10.15	
5,444.00	3.76	111.21	5,428.66	-104.83	362.02	-84.12	0.55	-0.54	1.29	
5,533.00	4.77	108.83	5,517.41	-107.08	368.24	-86.01	1.15	1.13	-2.67	
5,622.00	4.07	104.73	5,606.14	-109.08	374.80	-87.63	0.86	-0.79	-4.61	
5,711.00	3.23	100.02	5,694.96	-110.32	380.32	-88.55	1.00	-0.94	-5.29	
5,800.00	2.08	91.69	5,783.87	-110.80	384.40	-88.81	1.36	-1.29	-9.36	
5,816.00	3.70	55.47	5,799.85	-110.52	385.12	-88.48	14.80	10.14	-226.37	
KOP - 5816' MD, 5800' TVD										
5,889.00	14.10	31.93	5,871.88	-101.61	391.78	-79.21	14.80	14.24	-32.25	
5,978.00	26.29	20.69	5,955.28	-73.85	404.53	-50.78	14.31	13.70	-12.63	
6,067.00	33.19	7.91	6,032.59	-31.19	414.87	-7.60	10.49	7.75	-14.36	
6,157.00	37.38	4.99	6,106.05	20.45	420.64	44.29	5.02	4.66	-3.24	
6,246.00	40.30	1.29	6,175.37	76.16	423.64	100.08	4.19	3.28	-4.16	
6,335.00	48.48	359.09	6,238.92	138.36	423.76	162.18	9.35	9.19	-2.47	
6,424.00	57.93	358.21	6,292.17	209.52	422.05	233.14	10.65	10.62	-0.99	
6,513.00	62.31	3.85	6,336.52	286.61	423.52	310.19	7.37	4.92	6.34	
6,602.00	72.29	2.26	6,370.83	368.50	427.85	392.19	11.33	11.21	-1.79	
6,691.00	86.17	357.90	6,387.42	455.69	427.89	479.24	16.32	15.60	-4.90	
6,692.55	86.23	357.95	6,387.53	457.24	427.84	480.78	5.30	3.96	3.53	
~1000' X-OVER PNT - 6692.55' MD, 1000' FSL, 2300' FEL SEC 18										
6,771.00	89.34	0.71	6,390.56	535.61	426.93	558.97	5.30	3.97	3.52	
HZ LANDING PNT - 6771' MD, 6391' TVD										
6,780.00	89.70	1.03	6,390.63	544.61	427.07	567.97	5.30	3.97	3.51	
6,869.00	90.50	0.98	6,390.48	633.59	428.63	656.90	0.90	0.90	-0.06	
6,958.00	90.81	1.25	6,389.46	722.57	430.36	745.83	0.46	0.35	0.30	
7,047.00	90.32	1.60	6,388.58	811.54	432.57	834.78	0.68	-0.55	0.39	
7,136.00	90.41	1.16	6,388.01	900.51	434.71	923.73	0.50	0.10	-0.49	
7,225.00	89.79	0.59	6,387.86	989.50	436.07	1,012.65	0.95	-0.70	-0.64	
7,314.00	89.53	0.23	6,388.39	1,078.49	436.71	1,101.54	0.50	-0.29	-0.40	
7,403.00	89.48	359.75	6,389.16	1,167.49	436.70	1,190.39	0.54	-0.06	-0.54	
7,492.00	89.35	359.13	6,390.06	1,256.48	435.83	1,279.19	0.71	-0.15	-0.70	
7,581.00	89.70	0.01	6,390.80	1,345.47	435.16	1,368.00	1.06	0.39	0.99	
7,670.00	89.66	358.60	6,391.30	1,434.46	434.08	1,456.79	1.58	-0.04	-1.58	
7,759.00	91.16	0.98	6,390.66	1,523.45	433.75	1,545.61	3.16	1.69	2.67	
7,848.00	92.36	3.71	6,387.93	1,612.33	437.39	1,634.55	3.35	1.35	3.07	
7,937.00	90.15	2.97	6,385.98	1,701.15	442.57	1,723.52	2.62	-2.48	-0.83	

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Well:	ROSS 8-60 18-7-5	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)	
8,026.00	91.34	3.54	6,384.82	1,789.99	447.63	1,812.51	1.48	1.34	0.64	
8,116.00	87.94	3.19	6,385.39	1,879.82	452.91	1,902.50	3.80	-3.78	-0.39	
8,205.00	88.47	4.11	6,388.18	1,968.60	458.57	1,991.45	1.19	0.60	1.03	
8,294.00	89.31	4.16	6,389.90	2,057.35	464.99	2,080.42	0.95	0.94	0.06	
8,383.00	89.31	3.98	6,390.97	2,146.12	471.30	2,169.41	0.20	0.00	-0.20	
8,472.00	89.13	3.67	6,392.18	2,234.91	477.24	2,258.39	0.40	-0.20	-0.35	
8,561.00	89.17	3.76	6,393.50	2,323.71	483.01	2,347.38	0.11	0.04	0.10	
8,650.00	88.11	3.10	6,395.62	2,412.53	488.33	2,436.35	1.40	-1.19	-0.74	
8,739.00	88.29	1.51	6,398.41	2,501.41	491.91	2,525.30	1.80	0.20	-1.79	
8,828.00	87.76	1.47	6,401.48	2,590.33	494.22	2,614.20	0.60	-0.60	-0.04	
8,917.00	89.04	0.45	6,403.96	2,679.28	495.71	2,703.09	1.84	1.44	-1.15	
9,006.00	89.00	359.70	6,405.49	2,768.26	495.83	2,791.94	0.84	-0.04	-0.84	
9,095.00	88.82	357.90	6,407.18	2,857.22	493.96	2,880.65	2.03	-0.20	-2.02	
9,184.00	90.46	359.53	6,407.74	2,946.19	491.97	2,969.37	2.60	1.84	1.83	
9,273.00	91.07	359.57	6,406.55	3,035.18	491.27	3,058.17	0.69	0.69	0.04	
9,363.00	89.70	0.14	6,405.95	3,125.18	491.04	3,148.01	1.65	-1.52	0.63	
9,452.00	90.06	0.28	6,406.13	3,214.18	491.37	3,236.88	0.43	0.40	0.16	
9,541.00	88.11	359.62	6,407.55	3,303.16	491.29	3,325.72	2.31	-2.19	-0.74	
9,630.00	87.41	359.79	6,411.03	3,392.09	490.83	3,414.48	0.81	-0.79	0.19	
9,719.00	88.86	359.88	6,413.93	3,481.04	490.58	3,503.27	1.63	1.63	0.10	
9,808.00	88.51	0.14	6,415.97	3,570.02	490.59	3,592.11	0.49	-0.39	0.29	
9,897.00	88.25	0.37	6,418.49	3,658.98	490.99	3,680.95	0.39	-0.29	0.26	
9,986.00	90.46	1.11	6,419.49	3,747.96	492.14	3,769.85	2.62	2.48	0.83	
10,075.00	90.90	359.84	6,418.43	3,836.95	492.87	3,858.74	1.51	0.49	-1.43	
10,164.00	91.56	0.45	6,416.52	3,925.93	493.10	3,947.59	1.01	0.74	0.69	
10,253.00	90.10	0.81	6,415.23	4,014.91	494.08	4,036.48	1.69	-1.64	0.40	
10,343.00	90.46	0.37	6,414.79	4,104.90	495.00	4,126.38	0.63	0.40	-0.49	
10,432.00	88.86	1.25	6,415.32	4,193.89	496.26	4,215.30	2.05	-1.80	0.99	
10,521.00	88.60	0.67	6,417.29	4,282.86	497.75	4,304.20	0.71	-0.29	-0.65	
10,610.00	88.64	0.19	6,419.44	4,371.83	498.42	4,393.07	0.54	0.04	-0.54	
10,699.00	88.78	359.66	6,421.44	4,460.80	498.31	4,481.89	0.62	0.16	-0.60	
10,788.00	89.04	359.35	6,423.13	4,549.78	497.54	4,570.69	0.45	0.29	-0.35	
10,877.00	89.40	359.53	6,424.35	4,638.77	496.67	4,659.48	0.45	0.40	0.20	
10,966.00	90.46	359.48	6,424.45	4,727.77	495.90	4,748.29	1.19	1.19	-0.06	
11,055.00	91.56	358.96	6,422.89	4,816.74	494.69	4,837.05	1.37	1.24	-0.58	
11,144.00	89.31	359.26	6,422.21	4,905.72	493.30	4,925.81	2.55	-2.53	0.34	
11,233.00	89.57	358.65	6,423.08	4,994.70	491.68	5,014.56	0.75	0.29	-0.69	
11,322.00	90.01	358.29	6,423.41	5,083.67	489.30	5,103.25	0.64	0.49	-0.40	
11,411.00	89.40	355.83	6,423.86	5,172.55	484.74	5,191.72	2.85	-0.69	-2.76	
11,500.00	90.19	356.88	6,424.18	5,261.36	479.08	5,280.07	1.48	0.89	1.18	
11,589.00	90.15	0.23	6,423.92	5,350.32	476.84	5,368.76	3.76	-0.04	3.76	
11,678.00	91.07	2.39	6,422.97	5,439.29	478.87	5,457.70	2.64	1.03	2.43	
11,767.00	92.14	3.36	6,420.48	5,528.14	483.33	5,546.66	1.62	1.20	1.09	

Survey Report

Company:	BISON OIL & GAS II	Local Co-ordinate Reference:	Well ROSS 8-60 18-7-5
Project:	WELD COUNTY	TVD Reference:	KB 24' @ 4975.00usft
Site:	SEC 18-T8N-R60W	MD Reference:	KB 24' @ 4975.00usft
Well:	ROSS 8-60 18-7-5	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)
11,856.00	89.09	2.44	6,419.52	5,617.01	487.84	5,635.64	3.58	-3.43	-1.03
11,945.00	89.44	2.70	6,420.66	5,705.91	491.83	5,724.63	0.49	0.39	0.29
12,034.00	91.47	5.12	6,419.96	5,794.69	497.89	5,813.61	3.55	2.28	2.72
12,123.00	90.06	1.33	6,418.77	5,883.52	502.90	5,902.58	4.54	-1.58	-4.26
12,212.00	90.41	1.11	6,418.40	5,972.50	504.79	5,991.52	0.46	0.39	-0.25
12,302.00	90.77	0.41	6,417.48	6,062.49	505.99	6,081.43	0.87	0.40	-0.78
12,391.00	91.07	359.84	6,416.05	6,151.48	506.18	6,170.29	0.72	0.34	-0.64
12,480.00	89.66	0.45	6,415.48	6,240.47	506.41	6,259.15	1.73	-1.58	0.69
12,569.00	90.32	0.06	6,415.50	6,329.47	506.80	6,348.03	0.86	0.74	-0.44
12,658.00	90.99	359.48	6,414.48	6,418.46	506.45	6,436.86	1.00	0.75	-0.65
12,747.00	89.40	0.76	6,414.18	6,507.46	506.63	6,525.72	2.29	-1.79	1.44
12,836.00	90.77	0.67	6,414.04	6,596.45	507.74	6,614.63	1.54	1.54	-0.10
12,925.00	88.82	1.56	6,414.36	6,685.42	509.48	6,703.56	2.41	-2.19	1.00
13,014.00	88.82	1.16	6,416.20	6,774.38	511.59	6,792.50	0.45	0.00	-0.45
13,103.00	88.69	0.19	6,418.13	6,863.35	512.64	6,881.38	1.10	-0.15	-1.09
13,193.00	88.78	359.35	6,420.12	6,953.33	512.27	6,971.20	0.94	0.10	-0.93
13,282.00	87.94	358.12	6,422.66	7,042.27	510.31	7,059.88	1.67	-0.94	-1.38
13,371.00	87.58	357.81	6,426.14	7,131.14	507.15	7,148.43	0.53	-0.40	-0.35
13,460.00	87.32	357.63	6,430.10	7,219.99	503.62	7,236.93	0.36	-0.29	-0.20
13,549.00	89.97	358.12	6,432.21	7,308.89	500.32	7,325.51	3.03	2.98	0.55
13,638.00	90.94	0.67	6,431.50	7,397.88	499.38	7,414.29	3.07	1.09	2.87
13,727.00	91.21	359.88	6,429.83	7,486.86	499.80	7,503.16	0.94	0.30	-0.89
13,816.00	91.38	359.57	6,427.82	7,575.83	499.38	7,591.96	0.40	0.19	-0.35
13,905.00	91.87	359.09	6,425.29	7,664.79	498.34	7,680.72	0.77	0.55	-0.54
13,994.00	90.19	359.75	6,423.69	7,753.77	497.44	7,769.50	2.03	-1.89	0.74
14,083.00	90.28	359.09	6,423.33	7,842.76	496.53	7,858.30	0.75	0.10	-0.74
14,172.00	90.90	358.34	6,422.41	7,931.73	494.54	7,947.02	1.09	0.70	-0.84
14,261.00	90.46	0.85	6,421.36	8,020.72	493.91	8,035.82	2.86	-0.49	2.82
14,350.00	90.59	1.07	6,420.54	8,109.70	495.40	8,124.75	0.29	0.15	0.25
14,439.00	91.43	0.98	6,418.97	8,198.67	496.99	8,213.67	0.95	0.94	-0.10
14,528.00	91.83	0.72	6,416.44	8,287.63	498.31	8,302.55	0.54	0.45	-0.29
14,617.00	90.85	2.26	6,414.36	8,376.57	500.63	8,391.48	2.05	-1.10	1.73
14,706.00	91.56	2.48	6,412.49	8,465.47	504.31	8,480.45	0.84	0.80	0.25
14,795.00	91.91	2.92	6,409.79	8,554.33	508.50	8,569.40	0.63	0.39	0.49
14,884.00	89.57	2.74	6,408.64	8,643.21	512.89	8,658.39	2.64	-2.63	-0.20
14,974.00	89.66	2.44	6,409.25	8,733.12	516.96	8,748.38	0.35	0.10	-0.33
15,063.00	89.70	1.82	6,409.75	8,822.05	520.26	8,837.36	0.70	0.04	-0.70
15,151.00	89.97	1.47	6,410.00	8,910.02	522.79	8,925.33	0.50	0.31	-0.40
15,241.00	90.41	1.38	6,409.70	8,999.99	525.03	9,015.28	0.50	0.49	-0.10
15,267.65	90.41	1.13	6,409.51	9,026.63	525.61	9,041.91	0.94	0.00	-0.94
~1000' X-OVER PNT - 15267.65' MD, 1000' FNL, 2340' FEL SEC 7									
15,330.00	90.41	0.54	6,409.06	9,088.97	526.52	9,104.21	0.94	0.00	-0.94
15,419.00	90.72	0.32	6,408.19	9,177.97	527.19	9,193.09	0.43	0.35	-0.25
15,463.00	91.03	0.23	6,407.51	9,221.96	527.40	9,237.03	0.73	0.70	-0.20

Survey Report

Company:	BISON OIL & GAS II	Local Co-ordinate Reference:	Well ROSS 8-60 18-7-5
Project:	WELD COUNTY	TVD Reference:	KB 24' @ 4975.00usft
Site:	SEC 18-T8N-R60W	MD Reference:	KB 24' @ 4975.00usft
Well:	ROSS 8-60 18-7-5	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)
LAST SURVEY - 15463' MD, 6408' TVD									
15,523.00	91.03	0.23	6,406.44	9,281.95	527.64	9,296.93	0.00	0.00	0.00
EXTRAPOLATION TO TD - 15523' MD, 745' FNL, 2339' FEL 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 5	0.00	0.00	6,395.00	457.24	448.65	1,485,381.53	3,379,225.60	40.657744°N	104.133128°W
- actual wellpath misses target center by 22.11usft at 6692.30usft MD (6387.51 TVD, 456.99 N, 427.85 E)									
- Point									
PBHL-ROSS 8-60 5	0.00	0.00	6,418.00	9,176.73	535.02	1,494,101.16	3,379,177.72	40.681677°N	104.132816°W
- actual wellpath misses target center by 12.55usft at 15417.73usft MD (6408.20 TVD, 9176.69 N, 527.18 E)									
- Point									
EPI-ROSS 8-60 5	0.00	0.00	6,418.00	9,026.63	534.47	1,493,951.06	3,379,179.48	40.681265°N	104.132818°W
- actual wellpath misses target center by 12.27usft at 15267.72usft MD (6409.51 TVD, 9026.70 N, 525.61 E)									
- Point									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,955.00	1,950.73	-40.09	96.87	SURFACE CSG - 1955' MD, 1951' TVD	
5,816.00	5,799.85	-110.52	385.12	KOP - 5816' MD, 5800' TVD	
6,692.55	6,387.53	457.24	427.84	~1000' X-OVER PNT - 6692.55' MD, 1000' FSL, 2300' FEL SEC 18	
6,771.00	6,390.56	535.61	426.93	HZ LANDING PNT - 6771' MD, 6391' TVD	
15,267.65	6,409.51	9,026.63	525.61	~1000' X-OVER PNT - 15267.65' MD, 1000' FNL, 2340' FEL SEC 7	
15,463.00	6,407.51	9,221.96	527.40	LAST SURVEY - 15463' MD, 6408' TVD	
15,523.00	6,406.44	9,281.95	527.64	EXTRAPOLATION TO TD - 15523' MD, 745' FNL, 2339' FEL SEC 7	

Checked By: _____ Approved By: _____ Date: _____