



Project: Weld County, CO NAD 83
Site: Johnson Trust
Well: Johnson Trust 8
Wellbore: OH
Design: Plan 3



T **M**
Azimuths to True North
Magnetic North: 8.60°

Magnetic Field
Strength: 52403.0snT
Dip Angle: 66.70°
Date: 12/29/2015
Model: BGGM2015

Plan: Plan 3 (Johnson Trust 8/OH)
Created By: Seth Burstad Date: 2-4-2016

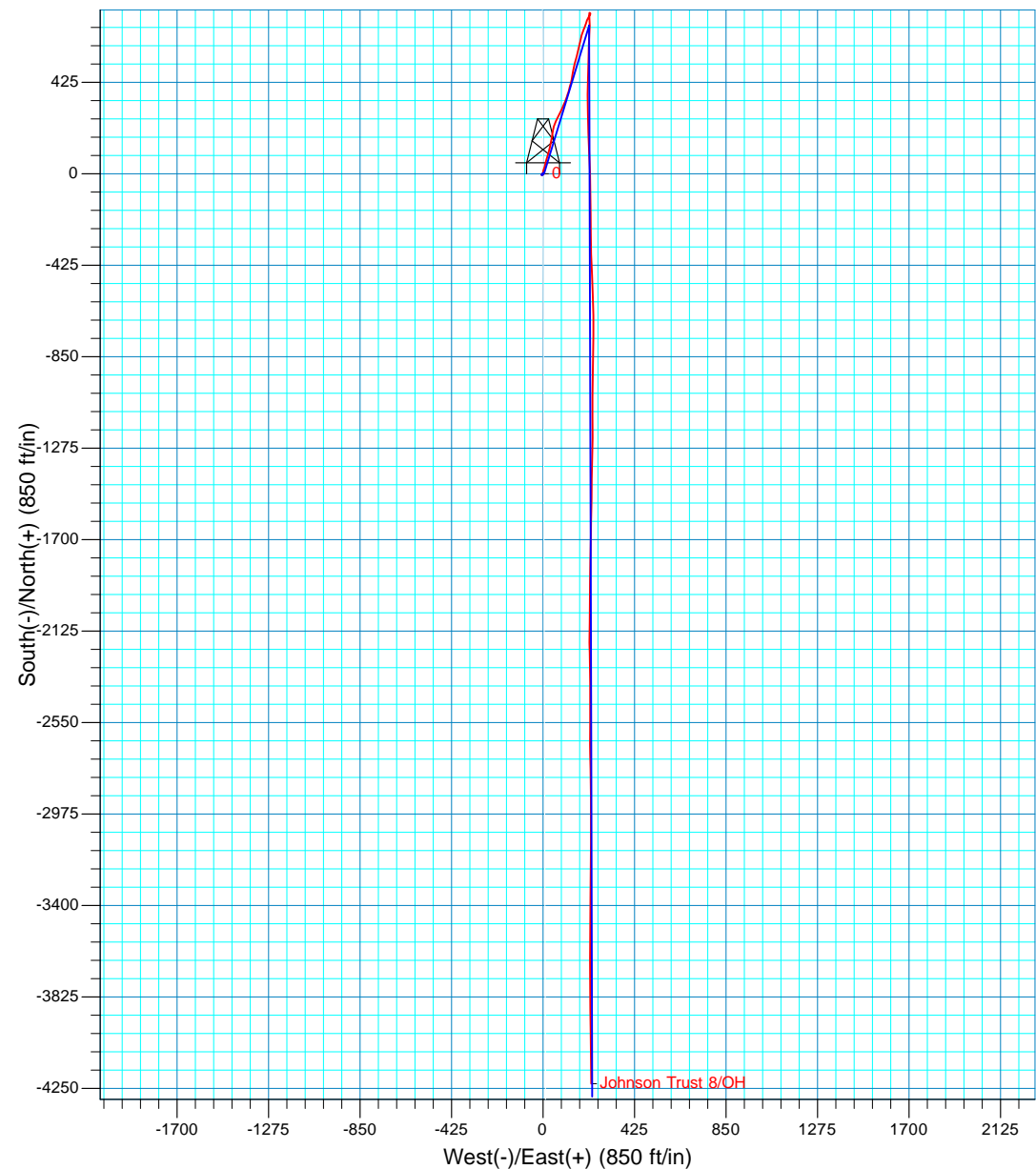
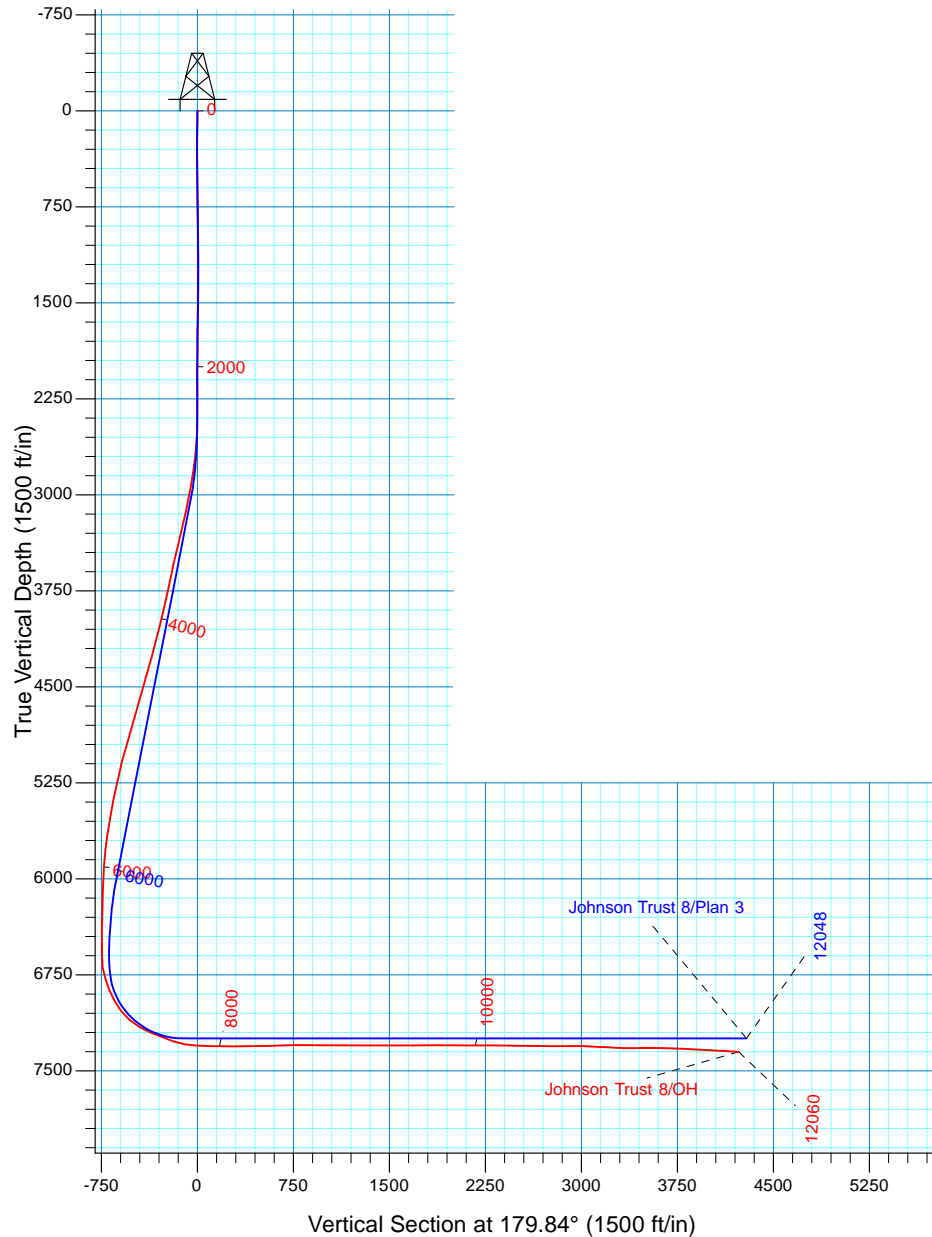
WELL DETAILS: Johnson Trust 8

PROJECT DETAILS: Weld County, CO NAD 83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone

System Datum: Mean Sea Level
Local North: True

GL 4923' & KB 24.5' @ 4947.50ft (Patterson 346) 4923.00
Northing Easting Latitude Longitude
1293252.41 3151084.10 40° 8' 13.589 N 104° 57' 34.632 W





Extraction Oil & Gas

Weld County, CO NAD 83

Johnson Trust

Johnson Trust 8

OH

Design: OH

Standard Survey Report

08 February, 2016



Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Johnson Trust 8
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4923' & KB 24.5' @ 4947.50ft (Patterson 346)
Site:	Johnson Trust	MD Reference:	GL 4923' & KB 24.5' @ 4947.50ft (Patterson 346)
Well:	Johnson Trust 8	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Project	Weld County, CO NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Johnson Trust, Site Center : Johnson Trust 1				
Site Position:		Northing:	1,293,448.40 usft	Latitude:	40° 8' 15.526 N
From:	Lat/Long	Easting:	3,151,083.18 usft	Longitude:	104° 57' 34.628 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.35 °

Well	Johnson Trust 8, 2069' FSL 388' FWL Sec 13 T2N R68W					
Well Position	+N/-S	0.00 ft	Northing:	1,293,252.41 usft	Latitude:	40° 8' 13.589 N
	+E/-W	0.00 ft	Easting:	3,151,084.10 usft	Longitude:	104° 57' 34.632 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,923.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	12/29/2015	8.60	66.70	52,403

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	173.17	

Survey Program	Date	2/8/2016			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
142.00	1,558.00	Survey #1 - Surface (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
1,663.00	12,060.00	Survey #2 - Production (OH)	SDI MWD	SDI MWD - Standard ver 1.0.1	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
142.00	1.30	45.00	141.99	1.14	1.14	-1.00	0.92	0.92	0.00	
237.00	1.00	61.80	236.97	2.29	2.63	-1.96	0.47	-0.32	17.68	
333.00	1.10	269.70	332.96	2.68	2.45	-2.37	2.12	0.10	-158.44	
428.00	1.80	265.60	427.93	2.56	0.05	-2.54	0.74	0.74	-4.32	
523.00	1.70	219.70	522.89	1.37	-2.34	-1.63	1.44	-0.11	-48.32	
618.00	1.50	231.50	617.86	-0.49	-4.21	-0.01	0.40	-0.21	12.42	
714.00	0.90	131.40	713.84	-1.77	-4.63	1.21	1.96	-0.63	-104.27	

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Johnson Trust 8
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Site:	Johnson Trust	MD Reference:	GL 4923' & KB 24.5' @ 4947.50ft (Patterson 346)
Well:	Johnson Trust 8	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

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)
809.00	0.70	217.50	808.83	-2.73	-4.42	2.18	1.16	-0.21	90.63
904.00	1.00	183.20	903.82	-4.02	-4.82	3.41	0.61	0.32	-36.11
1,000.00	0.70	279.00	999.82	-4.76	-5.45	4.08	1.33	-0.31	99.79
1,095.00	0.90	179.00	1,094.81	-5.42	-6.01	4.66	1.30	0.21	-105.26
1,190.00	0.60	104.80	1,189.81	-6.29	-5.52	5.59	0.99	-0.32	-78.11
1,285.00	1.50	71.00	1,284.79	-6.01	-3.86	5.51	1.11	0.95	-35.58
1,381.00	1.00	86.20	1,380.77	-5.55	-1.83	5.29	0.62	-0.52	15.83
1,476.00	1.00	40.20	1,475.75	-4.86	-0.47	4.77	0.82	0.00	-48.42
1,558.00	1.00	40.20	1,557.74	-3.76	0.45	3.79	0.00	0.00	0.00
1,663.00	1.01	63.52	1,662.73	-2.65	1.87	2.86	0.39	0.01	22.21
1,757.00	0.84	64.63	1,756.71	-1.99	3.24	2.36	0.18	-0.18	1.18
1,852.00	0.55	71.23	1,851.71	-1.54	4.30	2.04	0.32	-0.31	6.95
1,947.00	0.28	21.25	1,946.70	-1.18	4.81	1.74	0.45	-0.28	-52.61
2,041.00	0.24	327.73	2,040.70	-0.80	4.79	1.36	0.25	-0.04	-56.94
2,136.00	0.51	297.83	2,135.70	-0.43	4.31	0.94	0.34	0.28	-31.47
2,230.00	0.40	318.50	2,229.70	0.01	3.72	0.44	0.21	-0.12	21.99
2,325.00	0.51	298.10	2,324.70	0.46	3.13	-0.08	0.20	0.12	-21.47
2,420.00	0.59	294.53	2,419.69	0.86	2.31	-0.58	0.09	0.08	-3.76
2,516.00	2.74	351.35	2,515.65	3.33	1.52	-3.13	2.57	2.24	59.19
2,610.00	3.84	357.33	2,609.49	8.70	1.03	-8.51	1.22	1.17	6.36
2,705.00	7.35	18.05	2,704.03	17.66	2.77	-17.20	4.21	3.69	21.81
2,799.00	8.14	17.92	2,797.18	29.71	6.68	-28.70	0.84	0.84	-0.14
2,894.00	9.34	12.14	2,891.07	43.64	10.37	-42.10	1.56	1.26	-6.08
2,989.00	11.37	16.64	2,984.52	60.15	14.67	-57.98	2.30	2.14	4.74
3,084.00	12.49	15.07	3,077.47	79.04	20.03	-76.10	1.23	1.18	-1.65
3,178.00	13.53	16.88	3,169.05	99.38	25.86	-95.60	1.19	1.11	1.93
3,274.00	13.24	13.71	3,262.45	120.81	31.73	-116.17	0.82	-0.30	-3.30
3,369.00	13.11	10.24	3,354.95	141.98	36.22	-136.66	0.84	-0.14	-3.65
3,464.00	13.72	9.80	3,447.36	163.69	40.05	-157.76	0.65	0.64	-0.46
3,558.00	13.40	10.40	3,538.74	185.38	43.92	-178.84	0.37	-0.34	0.64
3,653.00	12.23	9.87	3,631.37	206.12	47.63	-198.99	1.24	-1.23	-0.56
3,747.00	12.31	19.70	3,723.23	225.37	52.71	-217.49	2.22	0.09	10.46
3,843.00	13.51	24.94	3,816.81	245.17	60.89	-236.18	1.75	1.25	5.46
3,937.00	14.98	26.95	3,907.91	265.96	71.03	-255.62	1.65	1.56	2.14
4,032.00	15.31	25.33	3,999.61	288.24	81.96	-276.44	0.56	0.35	-1.71
4,126.00	16.20	23.56	4,090.08	311.48	92.51	-298.25	1.08	0.95	-1.88
4,221.00	15.66	22.45	4,181.43	335.48	102.70	-320.87	0.65	-0.57	-1.17
4,316.00	14.77	18.70	4,273.11	358.80	111.48	-342.98	1.40	-0.94	-3.95
4,411.00	16.61	15.77	4,364.56	383.34	119.06	-366.44	2.11	1.94	-3.08
4,506.00	16.42	15.73	4,455.64	409.33	126.39	-391.38	0.20	-0.20	-0.04
4,601.00	17.35	12.02	4,546.55	436.11	132.98	-417.18	1.50	0.98	-3.91
4,696.00	15.70	8.31	4,637.63	462.68	137.79	-443.00	2.06	-1.74	-3.91

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Site:	Johnson Trust	MD Reference:	GL 4923' & KB 24.5' @ 4947.50ft (Patterson 346)
Well:	Johnson Trust 8	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

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)	
4,790.00	15.51	11.18	4,728.16	487.60	142.06	-467.23	0.85	-0.20	3.05	
4,885.00	16.34	14.07	4,819.52	513.02	147.77	-491.79	1.21	0.87	3.04	
4,979.00	17.62	14.61	4,909.42	539.62	154.58	-517.39	1.37	1.36	0.57	
5,074.00	16.25	14.31	5,000.30	566.41	161.49	-543.17	1.45	-1.44	-0.32	
5,168.00	14.38	13.55	5,090.95	590.50	167.47	-566.38	2.00	-1.99	-0.81	
5,263.00	13.54	11.31	5,183.15	612.88	172.42	-588.00	1.05	-0.88	-2.36	
5,357.00	12.70	13.08	5,274.69	633.73	176.92	-608.18	0.99	-0.89	1.88	
5,451.00	12.42	20.58	5,366.45	653.26	182.81	-626.86	1.76	-0.30	7.98	
5,546.00	10.79	21.50	5,459.51	671.10	189.66	-643.76	1.73	-1.72	0.97	
5,641.00	9.93	17.65	5,552.96	687.18	195.40	-659.04	1.16	-0.91	-4.05	
5,736.00	9.29	21.08	5,646.62	702.14	200.64	-673.27	0.90	-0.67	3.61	
5,831.00	7.82	23.69	5,740.56	715.22	206.00	-685.62	1.60	-1.55	2.75	
5,926.00	5.46	27.15	5,834.92	725.16	210.66	-694.93	2.52	-2.48	3.64	
6,020.00	3.89	32.07	5,928.61	731.84	214.39	-701.12	1.72	-1.67	5.23	
6,115.00	2.83	30.15	6,023.44	736.60	217.28	-705.51	1.12	-1.12	-2.02	
6,210.00	1.83	28.11	6,118.36	739.96	219.17	-708.62	1.06	-1.05	-2.15	
6,305.00	1.34	8.52	6,213.33	742.40	220.05	-710.94	0.76	-0.52	-20.62	
6,400.00	0.96	345.04	6,308.31	744.27	220.01	-712.80	0.63	-0.40	-24.72	
6,494.00	1.11	317.88	6,402.29	745.70	219.20	-714.32	0.54	0.16	-28.89	
6,588.00	1.07	308.86	6,496.28	746.93	217.90	-715.69	0.19	-0.04	-9.60	
6,683.00	1.29	301.29	6,591.25	748.04	216.30	-716.98	0.28	0.23	-7.97	
6,778.00	8.24	179.77	6,685.95	741.78	215.41	-710.87	9.45	7.32	-127.92	
6,873.00	17.85	176.99	6,778.39	720.38	216.21	-689.53	10.13	10.12	-2.93	
6,968.00	21.83	179.66	6,867.73	688.16	217.08	-657.44	4.30	4.19	2.81	
7,063.00	28.30	184.97	6,953.75	648.02	215.23	-617.80	7.20	6.81	5.59	
7,158.00	37.30	180.64	7,033.53	596.69	212.95	-567.11	9.78	9.47	-4.56	
7,254.00	50.36	181.46	7,102.64	530.36	211.68	-501.40	13.62	13.60	0.85	
7,350.00	58.65	182.52	7,158.33	452.32	208.93	-424.24	8.68	8.64	1.10	
7,445.00	67.74	179.56	7,201.14	367.64	207.48	-340.34	9.96	9.57	-3.12	
7,540.00	69.57	179.21	7,235.71	279.17	208.43	-252.38	1.96	1.93	-0.37	
7,635.00	69.65	178.04	7,268.81	190.15	210.57	-163.74	1.16	0.08	-1.23	
7,730.00	79.44	176.80	7,294.10	98.79	214.71	-72.54	10.38	10.31	-1.31	
7,825.00	88.05	178.83	7,304.44	4.52	218.29	21.49	9.31	9.06	2.14	
7,920.00	89.03	179.16	7,306.86	-90.43	219.96	115.97	1.09	1.03	0.35	
8,015.00	88.96	179.87	7,308.53	-185.41	220.76	210.37	0.75	-0.07	0.75	
8,109.00	89.77	179.07	7,309.57	-279.40	221.63	303.79	1.21	0.86	-0.85	
8,204.00	90.81	177.91	7,309.09	-374.37	224.13	398.38	1.64	1.09	-1.22	
8,298.00	91.14	177.42	7,307.49	-468.27	227.96	492.08	0.63	0.35	-0.52	
8,393.00	91.71	178.10	7,305.13	-563.17	231.67	586.74	0.93	0.60	0.72	
8,488.00	92.01	179.41	7,302.04	-658.10	233.74	681.24	1.41	0.32	1.38	
8,582.00	91.04	180.07	7,299.54	-752.06	234.16	774.58	1.25	-1.03	0.70	
8,677.00	88.79	181.31	7,299.68	-847.05	233.02	868.76	2.70	-2.37	1.31	

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Well:	Johnson Trust 8	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

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)
8,772.00	88.83	181.09	7,301.65	-942.00	231.03	962.80	0.24	0.04	-0.23
8,867.00	89.70	180.55	7,302.87	-1,036.99	229.67	1,056.95	1.08	0.92	-0.57
8,962.00	90.80	179.37	7,302.46	-1,131.98	229.74	1,151.28	1.70	1.16	-1.24
9,057.00	90.70	179.97	7,301.21	-1,226.97	230.28	1,245.66	0.64	-0.11	0.63
9,152.00	88.39	181.81	7,301.97	-1,321.95	228.81	1,339.78	3.11	-2.43	1.94
9,247.00	89.70	181.02	7,303.55	-1,416.90	226.46	1,433.78	1.61	1.38	-0.83
9,343.00	90.77	180.36	7,303.16	-1,512.89	225.31	1,528.95	1.31	1.11	-0.69
9,438.00	89.70	181.44	7,302.77	-1,607.88	223.82	1,623.09	1.60	-1.13	1.14
9,534.00	90.80	180.86	7,302.35	-1,703.85	221.89	1,718.15	1.30	1.15	-0.60
9,629.00	90.17	181.21	7,301.55	-1,798.83	220.17	1,812.25	0.76	-0.66	0.37
9,724.00	90.74	180.17	7,300.79	-1,893.82	219.03	1,906.43	1.25	0.60	-1.09
9,819.00	89.09	181.02	7,300.93	-1,988.81	218.04	2,000.63	1.95	-1.74	0.89
9,914.00	89.40	180.57	7,302.18	-2,083.80	216.72	2,094.78	0.58	0.33	-0.47
10,009.00	89.60	179.83	7,303.01	-2,178.79	216.39	2,189.06	0.81	0.21	-0.78
10,103.00	90.97	178.78	7,302.55	-2,272.78	217.53	2,282.52	1.84	1.46	-1.12
10,198.00	89.63	179.00	7,302.05	-2,367.76	219.37	2,377.04	1.43	-1.41	0.23
10,293.00	88.73	180.50	7,303.41	-2,462.74	219.79	2,471.40	1.84	-0.95	1.58
10,387.00	89.13	180.12	7,305.16	-2,556.73	219.28	2,564.65	0.59	0.43	-0.40
10,482.00	89.30	180.18	7,306.47	-2,651.72	219.03	2,658.94	0.19	0.18	0.06
10,577.00	89.73	178.98	7,307.27	-2,746.71	219.73	2,753.34	1.34	0.45	-1.26
10,671.00	90.27	178.60	7,307.27	-2,840.69	221.71	2,846.88	0.70	0.57	-0.40
10,767.00	90.60	179.31	7,306.54	-2,936.67	223.46	2,942.39	0.82	0.34	0.74
10,862.00	87.28	180.81	7,308.30	-3,031.64	223.36	3,036.67	3.83	-3.49	1.58
10,957.00	87.18	180.90	7,312.89	-3,126.51	221.95	3,130.71	0.14	-0.11	0.09
11,054.00	86.95	180.15	7,317.86	-3,223.38	221.06	3,226.78	0.81	-0.24	-0.77
11,147.00	87.95	180.13	7,321.99	-3,316.29	220.83	3,319.00	1.08	1.08	-0.02
11,241.00	90.37	180.49	7,323.37	-3,410.27	220.32	3,412.25	2.60	2.57	0.38
11,336.00	90.84	180.41	7,322.37	-3,505.26	219.58	3,506.48	0.50	0.49	-0.08
11,432.00	89.16	179.95	7,322.37	-3,601.26	219.28	3,601.76	1.81	-1.75	-0.48
11,527.00	87.92	179.84	7,324.79	-3,696.22	219.45	3,696.07	1.31	-1.31	-0.12
11,622.00	87.42	179.64	7,328.65	-3,791.14	219.88	3,790.37	0.57	-0.53	-0.21
11,718.00	86.95	179.57	7,333.37	-3,887.03	220.54	3,885.65	0.49	-0.49	-0.07
11,812.00	86.75	179.35	7,338.53	-3,980.88	221.43	3,978.94	0.32	-0.21	-0.23
Last SDI MWD Survey									
12,060.00	86.75	179.35	7,352.59	-4,228.46	224.24	4,225.10	0.00	0.00	0.00
Projection to TD									

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Johnson Trust 8
Project:	Weld County, CO NAD 83	TVD Reference:	GL 4923' & KB 24.5' @ 4947.50ft (Patterson 346)
Site:	Johnson Trust	MD Reference:	GL 4923' & KB 24.5' @ 4947.50ft (Patterson 346)
Well:	Johnson Trust 8	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Casper District

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
11,812.00	7,338.53	-3,980.88	221.43	Last SDI MWD Survey
12,060.00	7,352.59	-4,228.46	224.24	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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