Magpie Operating, Inc.

Well Name: **Bunker 8-2H**

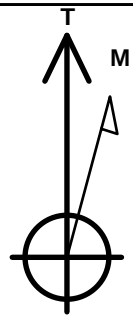
Surface Location: Bunker 8 Well Pad Sec.29-T5N-R68W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4994.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	377727.88	3130398.44	40.369320	-105.032010	

Original Well Elev WELL @ 5010.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1990'FSL, 2275'FWL, SEC.29	1.0	0.0	0.0	Point
BHL 984'FSL, 1990'FEL, SEC.30	4750.0	-1001.5	-4263.5	Point
LPL 989'FSL, 643'FEL, SEC.29	4815.0	-1023.6	2321.2	Point



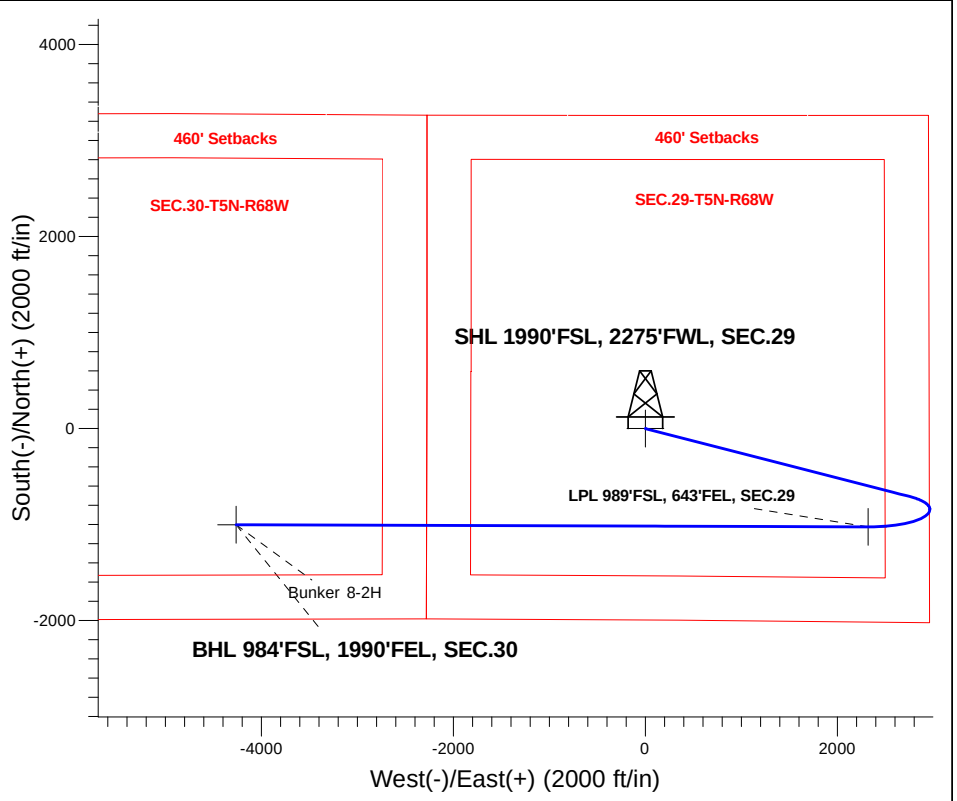
Azimuths to True North
Magnetic North: 8.37°

Magnetic Field
Strength: 52204.4snT
Dip Angle: 66.62°
Date: 12/7/2018
Model: HDGM

Bunker 8 Well Pad Sec.29-T5N-R68W
Bunker 8-2H
Plan #2 (12-06-18)
8:52, December 07 2018

ANNOTATIONS

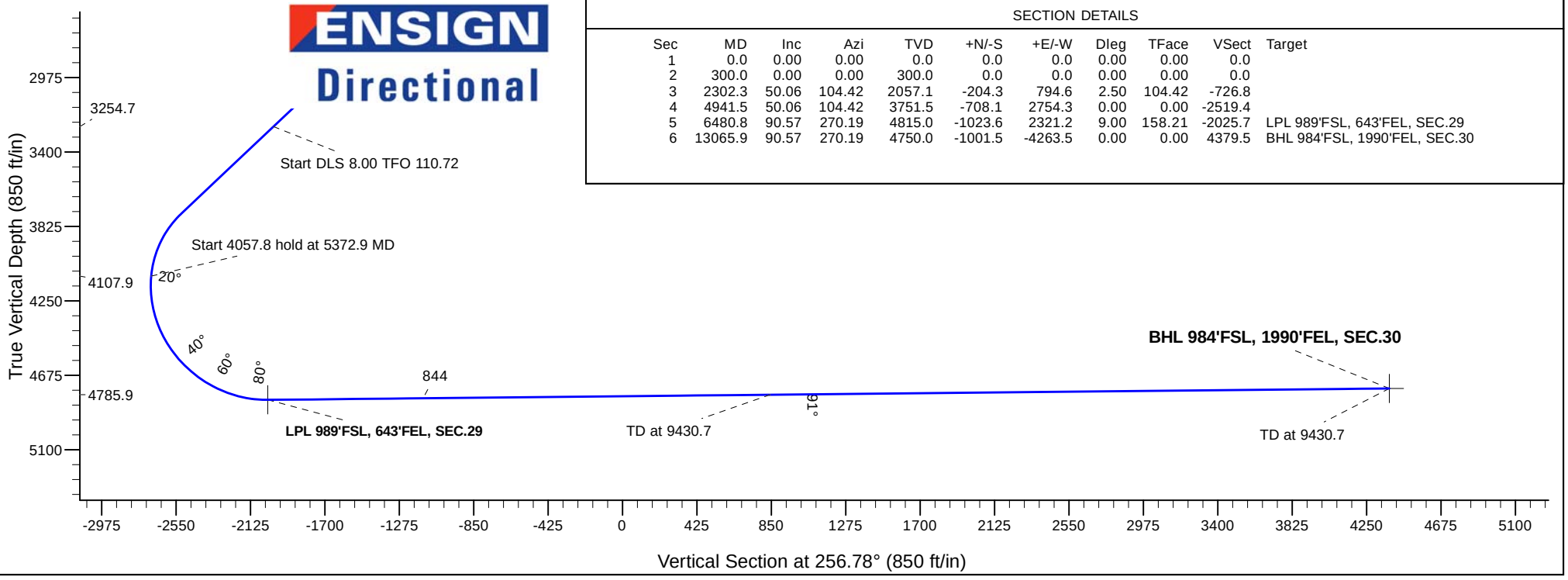
TVD	MD	Annotation
400.0	400.0	KOP - Start Build 2.00
1137.1	1157.0	Start 3010.7 hold at 1157.0 MD
3254.7	4167.7	Start DLS 8.00 TFO 110.72
4107.9	5372.9	Start 4057.8 hold at 5372.9 MD
4785.9	9430.7	TD at 9430.7



ENSIGN Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	2302.3	50.06	104.42	2057.1	-204.3	794.6	2.50	104.42	-726.8	
4	4941.5	50.06	104.42	3751.5	-708.1	2754.3	0.00	0.00	-2519.4	
5	6480.8	90.57	270.19	4815.0	-1023.6	2321.2	9.00	158.21	-2025.7	LPL 989'FSL, 643'FEL, SEC.29
6	13065.9	90.57	270.19	4750.0	-1001.5	-4263.5	0.00	0.00	4379.5	BHL 984'FSL, 1990'FEL, SEC.30



Magpie Operating, Inc.

SEC.29-T5N-R68W
Bunker 8 Well Pad Sec.29-T5N-R68W
Bunker 8-2H

Wellbore #1

Plan: Plan #2 (12-06-18)

Standard Planning Report

07 December, 2018

Database:	US_EDM	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Company:	Magpie Operating, Inc.	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Project:	SEC.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**North Reference:**	True
Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (12-06-18)		

Project SEC.29-T5N-R68W, Laramier County, CO

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 Bunker 8 Well Pad Sec.29-T5N-R68W

Site Position:		**Northing:**	1,377,695.11 usft	**Latitude:**	40.369230
From:	Lat/Long	**Easting:**	3,130,398.62 usft	**Longitude:**	-105.032010
Position Uncertainty:	0.0 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.30 °

Well Bunker 8-2H

Well Position	**+N/-S**	32.8 ft	**Northing:**	1,377,727.88 usft	**Latitude:**	40.369320
	+E/-W	0.0 ft	**Easting:**	3,130,398.44 usft	**Longitude:**	-105.032010
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	0.0 ft	**Ground Level:**	4,994.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/7/2018	8.37	66.62	52,204

Design Plan #2 (12-06-18)

Audit Notes:					
Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	256.78

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,302.3	50.06	104.42	2,057.1	-204.3	794.6	2.50	2.50	0.00	104.42	
4,941.5	50.06	104.42	3,751.5	-708.1	2,754.3	0.00	0.00	0.00	0.00	
6,480.8	90.57	270.19	4,815.0	-1,023.6	2,321.2	9.00	2.63	10.77	158.21	LPL 989'FSL, 643'FEl
13,065.9	90.57	270.19	4,750.0	-1,001.5	-4,263.5	0.00	0.00	0.00	0.00	BHL 984'FSL, 1990'Fl

Database:	US_EDM	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Company:	Magpie Operating, Inc.	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Project:	SEC.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**North Reference:**	True
Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (12-06-18)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	2.50	104.42	400.0	-0.5	2.1	-1.9	2.50	2.50	0.00
KOP - Start Build 2.00									
500.0	5.00	104.42	499.7	-2.2	8.4	-7.7	2.50	2.50	0.00
600.0	7.50	104.42	599.1	-4.9	19.0	-17.4	2.50	2.50	0.00
700.0	10.00	104.42	698.0	-8.7	33.7	-30.8	2.50	2.50	0.00
800.0	12.50	104.42	796.0	-13.5	52.6	-48.1	2.50	2.50	0.00
900.0	15.00	104.42	893.2	-19.4	75.6	-69.2	2.50	2.50	0.00
1,000.0	17.50	104.42	989.2	-26.4	102.7	-94.0	2.50	2.50	0.00
1,100.0	20.00	104.42	1,083.9	-34.4	133.9	-122.4	2.50	2.50	0.00
1,157.0	21.42	104.42	1,137.1	-39.4	153.4	-140.3	2.50	2.50	0.00
Start 3010.7 hold at 1157.0 MD									
1,200.0	22.50	104.42	1,177.0	-43.4	169.0	-154.6	2.50	2.50	0.00
1,300.0	25.00	104.42	1,268.6	-53.5	208.0	-190.2	2.50	2.50	0.00
1,400.0	27.50	104.42	1,358.3	-64.5	250.8	-229.4	2.50	2.50	0.00
1,500.0	30.00	104.42	1,445.9	-76.5	297.4	-272.0	2.50	2.50	0.00
1,600.0	32.50	104.42	1,531.4	-89.4	347.6	-318.0	2.50	2.50	0.00
1,700.0	35.00	104.42	1,614.5	-103.2	401.4	-367.2	2.50	2.50	0.00
1,800.0	37.50	104.42	1,695.2	-117.9	458.7	-419.6	2.50	2.50	0.00
1,900.0	40.00	104.42	1,773.2	-133.5	519.3	-475.0	2.50	2.50	0.00
2,000.0	42.50	104.42	1,848.3	-149.9	583.2	-533.4	2.50	2.50	0.00
2,100.0	45.00	104.42	1,920.6	-167.1	650.1	-594.7	2.50	2.50	0.00
2,200.0	47.50	104.42	1,989.7	-185.1	720.1	-658.7	2.50	2.50	0.00
2,300.0	50.00	104.42	2,055.6	-203.8	792.9	-725.3	2.50	2.50	0.00
2,302.3	50.06	104.42	2,057.1	-204.3	794.6	-726.8	2.50	2.50	0.00
2,400.0	50.06	104.42	2,119.8	-222.9	867.1	-793.2	0.00	0.00	0.00
2,500.0	50.06	104.42	2,184.1	-242.0	941.4	-861.1	0.00	0.00	0.00
2,600.0	50.06	104.42	2,248.3	-261.1	1,015.6	-929.0	0.00	0.00	0.00
2,700.0	50.06	104.42	2,312.5	-280.2	1,089.9	-997.0	0.00	0.00	0.00
2,800.0	50.06	104.42	2,376.7	-299.3	1,164.2	-1,064.9	0.00	0.00	0.00
2,900.0	50.06	104.42	2,440.9	-318.4	1,238.4	-1,132.8	0.00	0.00	0.00
3,000.0	50.06	104.42	2,505.1	-337.5	1,312.7	-1,200.7	0.00	0.00	0.00
3,100.0	50.06	104.42	2,569.3	-356.6	1,386.9	-1,268.6	0.00	0.00	0.00
3,200.0	50.06	104.42	2,633.5	-375.6	1,461.2	-1,336.6	0.00	0.00	0.00
3,300.0	50.06	104.42	2,697.7	-394.7	1,535.4	-1,404.5	0.00	0.00	0.00
3,400.0	50.06	104.42	2,761.9	-413.8	1,609.7	-1,472.4	0.00	0.00	0.00
3,500.0	50.06	104.42	2,826.1	-432.9	1,683.9	-1,540.3	0.00	0.00	0.00
3,600.0	50.06	104.42	2,890.3	-452.0	1,758.2	-1,608.2	0.00	0.00	0.00
3,700.0	50.06	104.42	2,954.5	-471.1	1,832.4	-1,676.2	0.00	0.00	0.00
3,800.0	50.06	104.42	3,018.7	-490.2	1,906.7	-1,744.1	0.00	0.00	0.00
3,900.0	50.06	104.42	3,082.9	-509.3	1,981.0	-1,812.0	0.00	0.00	0.00
4,000.0	50.06	104.42	3,147.1	-528.4	2,055.2	-1,879.9	0.00	0.00	0.00
4,100.0	50.06	104.42	3,211.3	-547.5	2,129.5	-1,947.9	0.00	0.00	0.00
4,167.7	50.06	104.42	3,254.7	-560.4	2,179.7	-1,993.8	0.00	0.00	0.00
Start DLS 8.00 TFO 110.72									
4,200.0	50.06	104.42	3,275.5	-566.5	2,203.7	-2,015.8	0.00	0.00	0.00
4,300.0	50.06	104.42	3,339.7	-585.6	2,278.0	-2,083.7	0.00	0.00	0.00
4,400.0	50.06	104.42	3,403.9	-604.7	2,352.2	-2,151.6	0.00	0.00	0.00
4,500.0	50.06	104.42	3,468.1	-623.8	2,426.5	-2,219.5	0.00	0.00	0.00
4,600.0	50.06	104.42	3,532.3	-642.9	2,500.7	-2,287.5	0.00	0.00	0.00

Database:	US_EDM	**Local Co-ordinate Reference:**	Well Bunker 8-2H
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Project:	SEC.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**North Reference:**	True
Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (12-06-18)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.0	50.06	104.42	3,596.5	-662.0	2,575.0	-2,355.4	0.00	0.00	0.00
4,800.0	50.06	104.42	3,660.7	-681.1	2,649.2	-2,423.3	0.00	0.00	0.00
4,900.0	50.06	104.42	3,724.9	-700.2	2,723.5	-2,491.2	0.00	0.00	0.00
4,941.5	50.06	104.42	3,751.5	-708.1	2,754.3	-2,519.4	0.00	0.00	0.00
5,000.0	45.20	107.17	3,791.0	-719.8	2,795.9	-2,557.2	9.00	-8.30	4.70
5,100.0	37.09	113.14	3,866.2	-742.2	2,857.6	-2,612.2	9.00	-8.11	5.97
5,200.0	29.42	121.79	3,949.8	-767.0	2,906.3	-2,653.9	9.00	-7.67	8.64
5,300.0	22.64	135.40	4,039.7	-793.7	2,940.8	-2,681.4	9.00	-6.78	13.62
5,372.9	18.82	150.57	4,107.9	-814.0	2,956.4	-2,692.0	9.00	-5.23	20.82
Start 4057.8 hold at 5372.9 MD									
5,400.0	17.80	157.64	4,133.7	-821.6	2,960.2	-2,693.9	9.00	-3.78	26.03
5,500.0	16.69	188.11	4,229.4	-850.0	2,964.0	-2,691.1	9.00	-1.11	30.47
5,600.0	19.94	215.13	4,324.5	-878.2	2,952.1	-2,673.1	9.00	3.25	27.03
5,700.0	25.97	232.47	4,416.6	-905.6	2,924.9	-2,640.3	9.00	6.02	17.34
5,800.0	33.29	243.15	4,503.5	-931.4	2,882.9	-2,593.6	9.00	7.32	10.67
5,900.0	41.22	250.22	4,583.1	-955.0	2,827.3	-2,534.0	9.00	7.93	7.07
6,000.0	49.46	255.32	4,653.3	-975.8	2,759.4	-2,463.2	9.00	8.24	5.10
6,100.0	57.88	259.28	4,712.6	-993.3	2,680.9	-2,382.7	9.00	8.42	3.97
6,200.0	66.40	262.57	4,759.3	-1,007.2	2,593.7	-2,294.7	9.00	8.52	3.29
6,300.0	74.98	265.46	4,792.3	-1,016.9	2,499.9	-2,201.1	9.00	8.58	2.88
6,400.0	83.59	268.11	4,810.9	-1,022.4	2,401.9	-2,104.5	9.00	8.61	2.66
6,480.8	90.57	270.19	4,815.0	-1,023.6	2,321.2	-2,025.7	9.00	8.63	2.57
6,500.0	90.57	270.19	4,814.8	-1,023.5	2,302.1	-2,007.0	0.00	0.00	0.00
6,600.0	90.57	270.19	4,813.8	-1,023.2	2,202.1	-1,909.8	0.00	0.00	0.00
6,700.0	90.57	270.19	4,812.8	-1,022.9	2,102.1	-1,812.5	0.00	0.00	0.00
6,800.0	90.57	270.19	4,811.8	-1,022.5	2,002.1	-1,715.2	0.00	0.00	0.00
6,900.0	90.57	270.19	4,810.9	-1,022.2	1,902.1	-1,618.0	0.00	0.00	0.00
7,000.0	90.57	270.19	4,809.9	-1,021.8	1,802.1	-1,520.7	0.00	0.00	0.00
7,100.0	90.57	270.19	4,808.9	-1,021.5	1,702.1	-1,423.4	0.00	0.00	0.00
7,200.0	90.57	270.19	4,807.9	-1,021.2	1,602.1	-1,326.2	0.00	0.00	0.00
7,300.0	90.57	270.19	4,806.9	-1,020.8	1,502.1	-1,228.9	0.00	0.00	0.00
7,400.0	90.57	270.19	4,805.9	-1,020.5	1,402.1	-1,131.6	0.00	0.00	0.00
7,500.0	90.57	270.19	4,804.9	-1,020.2	1,302.1	-1,034.4	0.00	0.00	0.00
7,600.0	90.57	270.19	4,804.0	-1,019.8	1,202.1	-937.1	0.00	0.00	0.00
7,700.0	90.57	270.19	4,803.0	-1,019.5	1,102.2	-839.8	0.00	0.00	0.00
7,800.0	90.57	270.19	4,802.0	-1,019.2	1,002.2	-742.6	0.00	0.00	0.00
7,900.0	90.57	270.19	4,801.0	-1,018.8	902.2	-645.3	0.00	0.00	0.00
8,000.0	90.57	270.19	4,800.0	-1,018.5	802.2	-548.0	0.00	0.00	0.00
8,100.0	90.57	270.19	4,799.0	-1,018.2	702.2	-450.7	0.00	0.00	0.00
8,200.0	90.57	270.19	4,798.0	-1,017.8	602.2	-353.5	0.00	0.00	0.00
8,300.0	90.57	270.19	4,797.0	-1,017.5	502.2	-256.2	0.00	0.00	0.00
8,400.0	90.57	270.19	4,796.1	-1,017.1	402.2	-158.9	0.00	0.00	0.00
8,500.0	90.57	270.19	4,795.1	-1,016.8	302.2	-61.7	0.00	0.00	0.00
8,600.0	90.57	270.19	4,794.1	-1,016.5	202.2	35.6	0.00	0.00	0.00
8,700.0	90.57	270.19	4,793.1	-1,016.1	102.2	132.9	0.00	0.00	0.00
8,800.0	90.57	270.19	4,792.1	-1,015.8	2.2	230.1	0.00	0.00	0.00
8,900.0	90.57	270.19	4,791.1	-1,015.5	-97.8	327.4	0.00	0.00	0.00
9,000.0	90.57	270.19	4,790.1	-1,015.1	-197.8	424.7	0.00	0.00	0.00
9,100.0	90.57	270.19	4,789.1	-1,014.8	-297.8	521.9	0.00	0.00	0.00
9,200.0	90.57	270.19	4,788.2	-1,014.5	-397.8	619.2	0.00	0.00	0.00
9,300.0	90.57	270.19	4,787.2	-1,014.1	-497.8	716.5	0.00	0.00	0.00
9,400.0	90.57	270.19	4,786.2	-1,013.8	-597.8	813.7	0.00	0.00	0.00
9,430.7	90.57	270.19	4,785.9	-1,013.7	-628.5	843.6	0.00	0.00	0.00
TD at 9430.7									

Database:	US_EDM	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Company:	Magpie Operating, Inc.	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Project:	SEC.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**North Reference:**	True
Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (12-06-18)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,500.0	90.57	270.19	4,785.2	-1,013.5	-697.7	911.0	0.00	0.00	0.00
9,600.0	90.57	270.19	4,784.2	-1,013.1	-797.7	1,008.3	0.00	0.00	0.00
9,700.0	90.57	270.19	4,783.2	-1,012.8	-897.7	1,105.5	0.00	0.00	0.00
9,800.0	90.57	270.19	4,782.2	-1,012.4	-997.7	1,202.8	0.00	0.00	0.00
9,900.0	90.57	270.19	4,781.3	-1,012.1	-1,097.7	1,300.1	0.00	0.00	0.00
10,000.0	90.57	270.19	4,780.3	-1,011.8	-1,197.7	1,397.4	0.00	0.00	0.00
10,100.0	90.57	270.19	4,779.3	-1,011.4	-1,297.7	1,494.6	0.00	0.00	0.00
10,200.0	90.57	270.19	4,778.3	-1,011.1	-1,397.7	1,591.9	0.00	0.00	0.00
10,300.0	90.57	270.19	4,777.3	-1,010.8	-1,497.7	1,689.2	0.00	0.00	0.00
10,400.0	90.57	270.19	4,776.3	-1,010.4	-1,597.7	1,786.4	0.00	0.00	0.00
10,500.0	90.57	270.19	4,775.3	-1,010.1	-1,697.7	1,883.7	0.00	0.00	0.00
10,600.0	90.57	270.19	4,774.3	-1,009.8	-1,797.7	1,981.0	0.00	0.00	0.00
10,700.0	90.57	270.19	4,773.4	-1,009.4	-1,897.7	2,078.2	0.00	0.00	0.00
10,800.0	90.57	270.19	4,772.4	-1,009.1	-1,997.7	2,175.5	0.00	0.00	0.00
10,900.0	90.57	270.19	4,771.4	-1,008.8	-2,097.7	2,272.8	0.00	0.00	0.00
11,000.0	90.57	270.19	4,770.4	-1,008.4	-2,197.7	2,370.0	0.00	0.00	0.00
11,100.0	90.57	270.19	4,769.4	-1,008.1	-2,297.7	2,467.3	0.00	0.00	0.00
11,200.0	90.57	270.19	4,768.4	-1,007.7	-2,397.7	2,564.6	0.00	0.00	0.00
11,300.0	90.57	270.19	4,767.4	-1,007.4	-2,497.7	2,661.8	0.00	0.00	0.00
11,400.0	90.57	270.19	4,766.4	-1,007.1	-2,597.6	2,759.1	0.00	0.00	0.00
11,500.0	90.57	270.19	4,765.5	-1,006.7	-2,697.6	2,856.4	0.00	0.00	0.00
11,600.0	90.57	270.19	4,764.5	-1,006.4	-2,797.6	2,953.6	0.00	0.00	0.00
11,700.0	90.57	270.19	4,763.5	-1,006.1	-2,897.6	3,050.9	0.00	0.00	0.00
11,800.0	90.57	270.19	4,762.5	-1,005.7	-2,997.6	3,148.2	0.00	0.00	0.00
11,900.0	90.57	270.19	4,761.5	-1,005.4	-3,097.6	3,245.4	0.00	0.00	0.00
12,000.0	90.57	270.19	4,760.5	-1,005.1	-3,197.6	3,342.7	0.00	0.00	0.00
12,100.0	90.57	270.19	4,759.5	-1,004.7	-3,297.6	3,440.0	0.00	0.00	0.00
12,200.0	90.57	270.19	4,758.5	-1,004.4	-3,397.6	3,537.3	0.00	0.00	0.00
12,300.0	90.57	270.19	4,757.6	-1,004.0	-3,497.6	3,634.5	0.00	0.00	0.00
12,400.0	90.57	270.19	4,756.6	-1,003.7	-3,597.6	3,731.8	0.00	0.00	0.00
12,500.0	90.57	270.19	4,755.6	-1,003.4	-3,697.6	3,829.1	0.00	0.00	0.00
12,600.0	90.57	270.19	4,754.6	-1,003.0	-3,797.6	3,926.3	0.00	0.00	0.00
12,700.0	90.57	270.19	4,753.6	-1,002.7	-3,897.6	4,023.6	0.00	0.00	0.00
12,800.0	90.57	270.19	4,752.6	-1,002.4	-3,997.6	4,120.9	0.00	0.00	0.00
12,900.0	90.57	270.19	4,751.6	-1,002.0	-4,097.6	4,218.1	0.00	0.00	0.00
13,000.0	90.57	270.19	4,750.7	-1,001.7	-4,197.6	4,315.4	0.00	0.00	0.00
13,065.9	90.57	270.19	4,750.0	-1,001.5	-4,263.5	4,379.5	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 1990'FSL, 2275'FW - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,377,727.90	3,130,398.44	40.369320	-105.032010
BHL 984'FSL, 1990'FEL - plan hits target center - Point	0.00	0.00	4,750.0	-1,001.5	-4,263.5	1,376,703.96	3,126,140.48	40.366570	-105.047310
LPL 989'FSL, 643'FEL, S - plan hits target center - Point	0.00	0.00	4,815.0	-1,023.6	2,321.2	1,376,716.60	3,132,724.95	40.366510	-105.023680

Database:	US_EDM	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Company:	Magpie Operating, Inc.	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Project:	SEC.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**North Reference:**	True
Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (12-06-18)		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
400.0	400.0	-0.5	2.1	KOP - Start Build 2.00
1,157.0	1,137.1	-39.4	153.4	Start 3010.7 hold at 1157.0 MD
4,167.7	3,254.7	-560.4	2,179.7	Start DLS 8.00 TFO 110.72
5,372.9	4,107.9	-814.0	2,956.4	Start 4057.8 hold at 5372.9 MD
9,430.7	4,785.9	-1,013.7	-628.5	TD at 9430.7

ENSIGN Directional

Magpie Operating, Inc.

SEC.29-T5N-R68W
Bunker 8 Well Pad Sec.29-T5N-R68W
Bunker 8-2H

Wellbore #1
Plan #2 (12-06-18)

Anticollision Report

07 December, 2018

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Reference Plan #2 (12-06-18)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 800.0 ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.45 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 12/7/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	13,065.9	Plan #2 (12-06-18) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Bunker 8 Well Pad Sec.29-T5N-R68W						
Bunker 8-1H - Wellbore #1 - Plan #2 (12-06-18)	165.6	168.6	32.8	32.1	50.837	CC
Bunker 8-1H - Wellbore #1 - Plan #2 (12-06-18)	200.0	203.0	32.8	32.0	39.351	ES
Bunker 8-1H - Wellbore #1 - Plan #2 (12-06-18)	13,065.9	9,392.1	541.2	134.0	1.329	Level 3, SF
Bunker 8-3H - Wellbore #1 - Plan #2 (12-06-18)	332.2	330.3	28.8	27.3	18.849	CC
Bunker 8-3H - Wellbore #1 - Plan #2 (12-06-18)	400.0	398.0	29.1	27.2	15.358	ES
Bunker 8-3H - Wellbore #1 - Plan #2 (12-06-18)	13,065.9	12,762.3	538.9	123.7	1.298	Level 3, SF
Bunker 8-4H - Wellbore #1 - Plan #2 (12-06-18)	300.0	297.0	58.3	56.9	42.596	CC
Bunker 8-4H - Wellbore #1 - Plan #2 (12-06-18)	400.0	397.2	58.7	56.8	31.044	ES
Bunker 8-4H - Wellbore #1 - Plan #2 (12-06-18)	13,065.9	12,876.8	798.4	283.6	1.551	SF
Bunker 8-5H - Wellbore #1 - Plan #2 (12-06-18)	200.0	195.0	87.4	86.6	107.645	CC
Bunker 8-5H - Wellbore #1 - Plan #2 (12-06-18)	300.0	294.8	87.5	86.2	64.615	ES
Bunker 8-5H - Wellbore #1 - Plan #2 (12-06-18)	4,600.0	4,486.3	799.6	649.6	5.333	SF
Bunker 8-6H - Wellbore #1 - Plan #2 (12-06-18)	200.0	193.0	120.2	119.4	149.022	CC
Bunker 8-6H - Wellbore #1 - Plan #2 (12-06-18)	300.0	292.5	120.4	119.1	89.270	ES
Bunker 8-6H - Wellbore #1 - Plan #2 (12-06-18)	3,600.0	3,454.6	776.5	672.7	7.483	SF
Bunker 8-7H - Wellbore #1 - Plan #2 (12-06-18)	300.0	291.0	149.4	148.0	110.486	CC, ES
Bunker 8-7H - Wellbore #1 - Plan #2 (12-06-18)	3,100.0	2,955.4	784.3	707.0	10.140	SF
Bunker 8-8H - Wellbore #1 - Plan #2 (12-06-18)	300.0	289.0	178.5	177.2	132.581	CC, ES
Bunker 8-8H - Wellbore #1 - Plan #2 (12-06-18)	2,700.0	2,544.5	783.5	728.8	14.328	SF
Bunker 8-9H - Wellbore #1 - Plan #2 (12-16-18)	200.0	188.0	207.7	206.9	261.876	CC, ES
Bunker 8-9H - Wellbore #1 - Plan #2 (12-16-18)	2,400.0	2,158.7	771.4	727.8	17.719	SF

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-1H - Wellbore #1 - Plan #2 (12-06-18)

Survey Program: 0-MWD

Offset Site Error: 0.0 ft

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	3.0	3.0	0.0	0.0	180.00	-32.8	0.0	32.8	32.8	0.00	7,507.800	
100.0	100.0	103.0	103.0	0.1	0.1	180.00	-32.8	0.0	32.8	32.5	0.28	115.628	
165.6	165.6	168.6	168.6	0.3	0.3	180.00	-32.8	0.0	32.8	32.1	0.65	50.837	CC
200.0	200.0	203.0	203.0	0.4	0.4	180.00	-32.8	0.0	32.8	32.0	0.83	39.351	ES
300.0	300.0	301.9	301.8	0.7	0.7	178.97	-34.5	0.6	34.5	33.2	1.35	25.506	
400.0	400.0	400.0	399.8	0.9	0.9	74.98	-39.3	2.4	38.9	37.1	1.86	20.874	
500.0	499.7	498.9	498.4	1.2	1.2	79.06	-47.4	5.4	45.6	43.2	2.41	18.931	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-1H - Wellbore #1 - Plan #2 (12-06-18)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
600.0	599.1	596.8	595.6	1.5	1.6	84.82	-58.6	9.4	54.9	51.9	3.02	18.179	
700.0	698.0	694.1	691.6	1.9	2.0	90.79	-72.7	14.6	67.5	63.7	3.74	18.033	
800.0	796.0	790.5	786.4	2.4	2.4	96.13	-89.8	20.8	83.6	79.0	4.59	18.186	
900.0	893.2	886.0	879.5	2.9	2.9	100.57	-109.6	28.1	103.3	97.7	5.59	18.477	
1,000.0	989.2	980.5	970.8	3.6	3.5	104.11	-132.0	36.3	126.6	119.9	6.72	18.824	
1,100.0	1,083.9	1,073.7	1,060.2	4.3	4.1	106.89	-156.9	45.4	153.5	145.5	8.00	19.180	
1,200.0	1,177.0	1,165.6	1,147.4	5.2	4.8	109.03	-184.2	55.4	183.8	174.4	9.41	19.524	
1,300.0	1,268.6	1,256.1	1,232.3	6.2	5.6	110.67	-213.5	66.1	217.5	206.5	10.96	19.843	
1,400.0	1,358.3	1,346.6	1,316.3	7.4	6.4	111.98	-245.2	77.7	254.3	241.6	12.64	20.117	
1,500.0	1,445.9	1,438.0	1,401.0	8.6	7.2	113.45	-277.6	89.5	293.2	278.8	14.43	20.317	
1,600.0	1,531.4	1,528.3	1,484.6	10.0	8.0	115.03	-309.6	101.2	334.2	317.9	16.30	20.508	
1,700.0	1,614.5	1,617.2	1,566.9	11.5	8.9	116.61	-341.1	112.8	377.5	359.3	18.22	20.714	
1,800.0	1,695.2	1,704.5	1,647.7	13.1	9.7	118.14	-372.1	124.1	423.2	403.0	20.20	20.949	
1,900.0	1,773.2	1,790.1	1,727.0	14.9	10.5	119.58	-402.4	135.2	471.5	449.2	22.22	21.220	
2,000.0	1,848.3	1,873.8	1,804.5	16.7	11.3	120.90	-432.1	146.0	522.4	498.1	24.27	21.527	
2,100.0	1,920.6	1,955.5	1,880.2	18.7	12.0	122.09	-461.0	156.6	576.0	549.7	26.35	21.865	
2,200.0	1,989.7	2,034.9	1,953.7	20.9	12.8	123.13	-489.2	166.9	632.4	604.0	28.45	22.228	
2,302.3	2,057.1	2,113.8	2,026.8	23.2	13.5	124.02	-517.2	177.2	693.0	662.4	30.64	22.619	
2,400.0	2,119.8	2,187.9	2,095.4	25.5	14.2	126.17	-543.4	186.8	752.6	720.0	32.64	23.056	
8,000.0	4,800.0	4,650.0	4,362.7	115.3	35.5	-42.17	-1,411.9	354.4	741.0	641.7	99.31	7.461	
8,100.0	4,799.0	4,685.7	4,391.1	117.5	35.6	-44.90	-1,422.8	335.7	683.3	578.5	104.78	6.521	
8,200.0	4,798.0	4,721.5	4,418.6	119.7	35.7	-47.66	-1,433.5	315.5	633.4	523.1	110.30	5.743	
8,300.0	4,797.0	4,763.2	4,449.5	122.0	35.8	-50.89	-1,445.4	290.1	592.4	476.0	116.37	5.091	
8,400.0	4,796.1	4,812.0	4,483.8	124.3	35.9	-54.62	-1,458.6	258.0	561.3	438.4	122.95	4.565	
8,500.0	4,795.1	4,869.3	4,521.3	126.7	36.0	-58.86	-1,473.1	217.2	540.4	410.5	129.90	4.160	
8,600.0	4,794.1	4,936.7	4,561.3	129.2	36.1	-63.51	-1,488.7	165.4	529.0	392.1	136.93	3.864	
8,700.0	4,793.1	5,015.3	4,602.1	131.7	36.2	-68.34	-1,504.5	100.1	525.5	381.8	143.71	3.656	
8,708.9	4,793.0	5,022.9	4,605.7	131.9	36.3	-68.76	-1,505.9	93.6	525.5	381.2	144.30	3.642	
8,800.0	4,792.1	5,106.0	4,640.4	134.2	36.4	-72.91	-1,519.5	19.4	527.2	377.2	149.99	3.515	
8,900.0	4,791.1	5,208.1	4,671.8	136.8	36.5	-76.65	-1,531.8	-76.9	531.1	375.3	155.76	3.410	
9,000.0	4,790.1	5,319.1	4,691.1	139.4	36.7	-78.98	-1,539.6	-185.8	534.4	373.2	161.22	3.315	
9,100.0	4,789.1	5,431.4	4,694.6	142.0	36.9	-79.51	-1,541.3	-298.0	535.5	369.0	166.43	3.217	
9,200.0	4,788.2	5,531.4	4,692.8	144.7	37.4	-79.41	-1,540.9	-397.9	535.6	364.1	171.45	3.124	
9,300.0	4,787.2	5,631.4	4,690.9	147.4	38.3	-79.32	-1,540.5	-497.9	535.7	359.0	176.67	3.032	
9,400.0	4,786.2	5,731.4	4,689.0	150.2	39.6	-79.22	-1,540.2	-597.9	535.8	353.8	182.05	2.943	
9,500.0	4,785.2	5,831.3	4,687.1	153.0	41.4	-79.13	-1,539.8	-697.9	535.9	348.4	187.58	2.857	
9,600.0	4,784.2	5,931.3	4,685.2	155.8	43.7	-79.03	-1,539.4	-797.8	536.1	342.8	193.21	2.774	
9,700.0	4,783.2	6,031.3	4,683.3	158.6	46.2	-78.94	-1,539.0	-897.8	536.2	337.2	198.94	2.695	
9,800.0	4,782.2	6,131.3	4,681.4	161.5	49.0	-78.84	-1,538.6	-997.8	536.3	331.6	204.74	2.619	
9,900.0	4,781.3	6,231.3	4,679.6	164.4	51.8	-78.74	-1,538.2	-1,097.8	536.4	325.8	210.61	2.547	
10,000.0	4,780.3	6,331.3	4,677.7	167.3	54.8	-78.65	-1,537.8	-1,197.8	536.6	320.0	216.53	2.478	
10,100.0	4,779.3	6,431.3	4,675.8	170.2	57.8	-78.56	-1,537.5	-1,297.7	536.7	314.2	222.49	2.412	
10,200.0	4,778.3	6,531.3	4,673.9	173.1	60.9	-78.46	-1,537.1	-1,397.7	536.8	308.3	228.50	2.349	
10,300.0	4,777.3	6,631.3	4,672.0	176.1	64.0	-78.37	-1,536.7	-1,497.7	537.0	302.4	234.54	2.289	
10,400.0	4,776.3	6,731.3	4,670.1	179.1	67.2	-78.27	-1,536.3	-1,597.7	537.1	296.5	240.62	2.232	
10,500.0	4,775.3	6,831.3	4,668.3	182.1	70.4	-78.18	-1,535.9	-1,697.6	537.2	290.5	246.72	2.178	
10,600.0	4,774.3	6,931.3	4,666.4	185.1	73.6	-78.08	-1,535.5	-1,797.6	537.4	284.5	252.84	2.125	
10,700.0	4,773.4	7,031.3	4,664.5	188.1	76.8	-77.99	-1,535.2	-1,897.6	537.5	278.5	258.99	2.075	
10,800.0	4,772.4	7,131.3	4,662.6	191.1	80.1	-77.89	-1,534.8	-1,997.6	537.6	272.5	265.16	2.028	
10,900.0	4,771.4	7,231.3	4,660.7	194.2	83.4	-77.80	-1,534.4	-2,097.6	537.8	266.4	271.34	1.982	
11,000.0	4,770.4	7,331.3	4,658.8	197.3	86.6	-77.70	-1,534.0	-2,197.5	537.9	260.4	277.54	1.938	
11,100.0	4,769.4	7,431.3	4,657.0	200.4	89.9	-77.61	-1,533.6	-2,297.5	538.1	254.3	283.76	1.896	

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-1H - Wellbore #1 - Plan #2 (12-06-18)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,200.0	4,768.4	7,531.3	4,655.1	203.4	93.2	-77.51	-1,533.2	-2,397.5	538.2	248.2	289.98	1.856	
11,300.0	4,767.4	7,631.3	4,653.2	206.6	96.6	-77.42	-1,532.8	-2,497.5	538.4	242.1	296.22	1.817	
11,400.0	4,766.4	7,731.3	4,651.3	209.7	99.9	-77.33	-1,532.5	-2,597.4	538.5	236.0	302.47	1.780	
11,500.0	4,765.5	7,831.3	4,649.4	212.8	103.2	-77.23	-1,532.1	-2,697.4	538.7	229.9	308.73	1.745	
11,600.0	4,764.5	7,931.3	4,647.5	215.9	106.5	-77.14	-1,531.7	-2,797.4	538.8	223.8	314.99	1.711	
11,700.0	4,763.5	8,031.3	4,645.6	219.1	109.9	-77.04	-1,531.3	-2,897.4	539.0	217.7	321.27	1.678	
11,800.0	4,762.5	8,131.3	4,643.8	222.2	113.2	-76.95	-1,530.9	-2,997.3	539.1	211.6	327.55	1.646	
11,900.0	4,761.5	8,231.3	4,641.9	225.4	116.6	-76.85	-1,530.5	-3,097.3	539.3	205.4	333.83	1.615	
12,000.0	4,760.5	8,331.2	4,640.0	228.6	120.0	-76.76	-1,530.2	-3,197.3	539.4	199.3	340.13	1.586	
12,100.0	4,759.5	8,431.2	4,638.1	231.7	123.3	-76.67	-1,529.8	-3,297.3	539.6	193.2	346.42	1.558	
12,200.0	4,758.5	8,531.2	4,636.2	234.9	126.7	-76.57	-1,529.4	-3,397.3	539.8	187.0	352.72	1.530	
12,300.0	4,757.6	8,631.2	4,634.3	238.1	130.1	-76.48	-1,529.0	-3,497.2	539.9	180.9	359.03	1.504	
12,400.0	4,756.6	8,731.2	4,632.5	241.3	133.4	-76.38	-1,528.6	-3,597.2	540.1	174.7	365.34	1.478	Level 3
12,500.0	4,755.6	8,831.2	4,630.6	244.5	136.8	-76.29	-1,528.2	-3,697.2	540.2	168.6	371.65	1.454	Level 3
12,600.0	4,754.6	8,931.2	4,628.7	247.7	140.2	-76.20	-1,527.9	-3,797.2	540.4	162.5	377.96	1.430	Level 3
12,700.0	4,753.6	9,031.2	4,626.8	251.0	143.6	-76.10	-1,527.5	-3,897.1	540.6	156.3	384.27	1.407	Level 3
12,800.0	4,752.6	9,131.2	4,624.9	254.2	147.0	-76.01	-1,527.1	-3,997.1	540.7	150.2	390.59	1.384	Level 3
12,900.0	4,751.6	9,231.2	4,623.0	257.4	150.4	-75.92	-1,526.7	-4,097.1	540.9	144.0	396.91	1.363	Level 3
13,000.0	4,750.7	9,331.2	4,621.1	260.7	153.7	-75.82	-1,526.3	-4,197.1	541.1	137.9	403.22	1.342	Level 3
13,027.8	4,750.4	9,359.0	4,620.6	261.6	154.7	-75.80	-1,526.2	-4,224.9	541.1	136.2	404.98	1.336	Level 3
13,065.9	4,750.0	9,392.1	4,620.0	262.8	155.8	-75.77	-1,526.1	-4,258.0	541.2	134.0	407.23	1.329	Level 3, SF

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-3H - Wellbore #1 - Plan #2 (12-06-18)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.2				
100.0	100.0	98.0	98.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.27	106.918	
200.0	200.0	198.0	198.0	0.4	0.4	0.00	29.1	0.0	29.1	28.3	0.82	35.520	
300.0	300.0	298.1	298.1	0.7	0.7	4.12	28.8	2.1	28.9	27.5	1.36	21.247	
332.2	332.2	330.3	330.2	0.8	0.8	-97.57	28.6	3.7	28.8	27.3	1.53	18.849	CC
400.0	400.0	398.0	397.8	0.9	1.0	-91.81	27.8	8.5	29.1	27.2	1.89	15.358	ES
500.0	499.7	497.8	496.9	1.2	1.3	-83.75	26.2	19.1	30.3	27.8	2.49	12.191	
600.0	599.1	597.3	595.3	1.5	1.7	-76.68	23.9	34.0	32.5	29.3	3.19	10.210	
700.0	698.0	696.6	692.8	1.9	2.1	-70.86	21.0	53.0	35.5	31.5	4.00	8.885	
800.0	796.0	795.8	789.1	2.4	2.7	-66.29	17.5	76.1	39.2	34.3	4.94	7.945	
900.0	893.2	894.8	884.2	2.9	3.4	-62.84	13.3	103.3	43.4	37.4	6.00	7.239	
1,000.0	989.2	993.5	977.8	3.6	4.1	-60.30	8.5	134.4	48.1	40.9	7.21	6.678	
1,100.0	1,083.9	1,092.1	1,069.8	4.3	5.0	-58.49	3.2	169.5	53.2	44.6	8.56	6.211	
1,200.0	1,177.0	1,190.5	1,160.0	5.2	6.0	-57.26	-2.8	208.3	58.6	48.5	10.09	5.806	
1,300.0	1,268.6	1,288.7	1,248.2	6.2	7.1	-56.47	-9.3	250.8	64.2	52.4	11.79	5.449	
1,400.0	1,358.3	1,386.7	1,334.4	7.4	8.3	-56.04	-16.4	297.0	70.2	56.5	13.69	5.125	
1,500.0	1,445.9	1,484.6	1,418.4	8.6	9.6	-55.87	-24.0	346.6	76.4	60.6	15.81	4.832	
1,600.0	1,531.4	1,582.2	1,499.9	10.0	11.1	-55.91	-32.1	399.7	82.8	64.7	18.14	4.564	
1,700.0	1,614.5	1,679.7	1,579.0	11.5	12.7	-56.10	-40.7	456.0	89.5	68.8	20.71	4.319	
1,800.0	1,695.2	1,777.0	1,655.5	13.1	14.4	-56.43	-49.8	515.5	96.3	72.8	23.52	4.095	
1,900.0	1,773.2	1,874.2	1,729.2	14.9	16.2	-56.85	-59.4	578.0	103.4	76.8	26.58	3.891	
2,000.0	1,848.3	1,971.2	1,800.1	16.7	18.1	-57.34	-69.5	643.5	110.7	80.8	29.89	3.704	
2,100.0	1,920.6	2,068.0	1,867.9	18.7	20.1	-57.89	-79.9	711.8	118.2	84.7	33.46	3.533	
2,200.0	1,989.7	2,164.7	1,932.7	20.9	22.3	-58.47	-90.8	782.7	125.9	88.6	37.27	3.377	
2,302.3	2,057.1	2,263.5	1,995.8	23.2	24.6	-59.10	-102.3	857.8	133.9	92.4	41.43	3.231	
2,400.0	2,119.8	2,358.7	2,053.6	25.5	26.9	-59.27	-113.8	932.7	142.6	97.2	45.42	3.140	
2,500.0	2,184.1	2,458.3	2,113.4	27.8	29.4	-59.16	-125.8	1,011.4	152.0	102.5	49.48	3.072	
2,600.0	2,248.3	2,557.9	2,173.2	30.1	31.8	-59.07	-137.9	1,090.1	161.4	107.9	53.55	3.015	
2,700.0	2,312.5	2,657.4	2,232.9	32.5	34.3	-58.99	-149.9	1,168.7	170.9	113.2	57.64	2.964	
2,800.0	2,376.7	2,757.0	2,292.7	34.8	36.8	-58.91	-162.0	1,247.4	180.3	118.5	61.73	2.920	
2,900.0	2,440.9	2,856.5	2,352.5	37.2	39.3	-58.85	-174.1	1,326.1	189.7	123.9	65.83	2.882	
3,000.0	2,505.1	2,956.1	2,412.3	39.5	41.8	-58.78	-186.1	1,404.8	199.1	129.2	69.93	2.847	
3,100.0	2,569.3	3,055.6	2,472.0	41.9	44.3	-58.73	-198.2	1,483.5	208.5	134.5	74.04	2.816	
3,200.0	2,633.5	3,155.2	2,531.8	44.3	46.8	-58.68	-210.2	1,562.2	218.0	139.8	78.16	2.789	
3,300.0	2,697.7	3,254.7	2,591.6	46.6	49.3	-58.63	-222.3	1,640.9	227.4	145.1	82.27	2.764	
3,400.0	2,761.9	3,354.3	2,651.4	49.0	51.8	-58.59	-234.4	1,719.6	236.8	150.4	86.39	2.741	
3,500.0	2,826.1	3,453.9	2,711.1	51.4	54.3	-58.55	-246.4	1,798.3	246.2	155.7	90.51	2.720	
3,600.0	2,890.3	3,553.4	2,770.9	53.8	56.8	-58.51	-258.5	1,877.0	255.6	161.0	94.64	2.701	
3,700.0	2,954.5	3,653.0	2,830.7	56.1	59.3	-58.48	-270.5	1,955.7	265.1	166.3	98.76	2.684	
3,800.0	3,018.7	3,752.5	2,890.5	58.5	61.8	-58.45	-282.6	2,034.4	274.5	171.6	102.89	2.668	
3,900.0	3,082.9	3,852.1	2,950.2	60.9	64.3	-58.42	-294.6	2,113.1	283.9	176.9	107.02	2.653	
4,000.0	3,147.1	3,951.6	3,010.0	63.3	66.9	-58.39	-306.7	2,191.8	293.3	182.2	111.15	2.639	
4,100.0	3,211.3	4,051.2	3,069.8	65.6	69.4	-58.37	-318.8	2,270.5	302.7	187.5	115.28	2.626	
4,200.0	3,275.5	4,150.7	3,129.6	68.0	71.9	-58.34	-330.8	2,349.2	312.1	192.7	119.41	2.614	
4,300.0	3,339.7	4,250.3	3,189.3	70.4	74.4	-58.32	-342.9	2,427.9	321.6	198.0	123.54	2.603	
4,400.0	3,403.9	4,349.8	3,249.1	72.8	76.9	-58.30	-354.9	2,506.6	331.0	203.3	127.67	2.592	
4,500.0	3,468.1	4,449.4	3,308.9	75.2	79.4	-58.28	-367.0	2,585.2	340.4	208.6	131.81	2.583	
4,600.0	3,532.3	4,549.0	3,368.7	77.5	82.0	-58.26	-379.1	2,663.9	349.8	213.9	135.94	2.573	
4,700.0	3,596.5	4,680.3	3,450.8	79.9	85.1	-58.68	-395.6	2,765.0	357.4	216.2	141.19	2.531	
4,800.0	3,660.7	4,848.0	3,580.0	82.3	87.9	-63.13	-421.7	2,867.9	348.3	196.6	151.68	2.296	
4,900.0	3,724.9	4,992.1	3,708.8	84.7	89.3	-71.87	-447.7	2,926.3	324.1	159.4	164.76	1.967	
4,941.5	3,751.5	5,043.0	3,756.9	85.7	89.6	-76.46	-457.4	2,939.6	311.8	142.1	169.73	1.837	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-3H - Wellbore #1 - Plan #2 (12-06-18)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,950.0	3,757.0	5,052.9	3,766.3	85.9	89.7	-77.50	-459.4	2,941.8	309.3	138.8	170.48	1.814	
5,000.0	3,791.0	5,108.4	3,820.0	86.9	89.9	-83.88	-470.2	2,950.9	295.5	121.5	174.03	1.698	
5,050.0	3,827.4	5,160.4	3,870.7	87.8	90.0	-90.85	-480.5	2,955.2	284.2	107.9	176.30	1.612	
5,100.0	3,866.2	5,209.4	3,918.8	88.6	90.0	-98.49	-490.2	2,955.3	275.7	98.5	177.26	1.555	
5,150.0	3,907.1	5,256.0	3,964.3	89.3	90.0	-106.92	-499.4	2,951.9	270.5	93.6	176.88	1.529	
5,200.0	3,949.8	5,300.5	4,007.4	89.9	90.0	-116.32	-508.1	2,945.5	268.6	93.3	175.23	1.533	
5,203.6	3,952.9	5,303.5	4,010.4	90.0	90.0	-117.03	-508.7	2,944.9	268.6	93.5	175.06	1.534	
5,250.0	3,994.1	5,343.1	4,048.3	90.4	89.9	-126.96	-516.4	2,936.5	270.0	97.6	172.40	1.566	
5,300.0	4,039.7	5,384.3	4,087.1	90.8	89.8	-139.19	-524.2	2,925.2	274.4	105.9	168.59	1.628	
5,350.0	4,086.3	5,424.1	4,123.9	91.1	89.7	-153.47	-531.6	2,911.8	281.7	117.6	164.03	1.717	
5,400.0	4,133.7	5,462.9	4,158.8	91.3	89.6	-170.13	-538.7	2,896.6	291.2	132.3	158.98	1.832	
5,450.0	4,181.5	5,500.0	4,191.3	91.5	89.6	171.21	-545.3	2,880.0	302.7	148.9	153.79	1.968	
5,500.0	4,229.4	5,537.5	4,223.2	91.5	89.5	151.77	-551.7	2,861.2	315.5	167.0	148.46	2.125	
5,550.0	4,277.1	5,573.7	4,252.9	91.5	89.4	133.75	-557.7	2,841.4	329.4	185.9	143.44	2.296	
5,600.0	4,324.5	5,609.2	4,280.9	91.5	89.4	118.44	-563.4	2,820.3	343.8	205.0	138.81	2.477	
5,650.0	4,371.0	5,644.2	4,307.3	91.4	89.4	106.06	-568.8	2,798.0	358.6	224.0	134.69	2.663	
5,700.0	4,416.6	5,678.7	4,332.1	91.4	89.4	96.18	-573.8	2,774.6	373.5	242.3	131.17	2.847	
5,750.0	4,460.9	5,712.7	4,355.3	91.3	89.4	88.27	-578.5	2,750.2	388.2	259.9	128.29	3.026	
5,800.0	4,503.5	5,750.0	4,379.2	91.2	89.4	81.73	-583.3	2,722.0	402.5	276.6	125.83	3.199	
5,850.0	4,544.4	5,779.7	4,397.2	91.1	89.4	76.61	-587.0	2,698.6	416.2	291.6	124.57	3.341	
5,900.0	4,583.1	5,812.8	4,415.8	91.0	89.5	72.26	-590.7	2,671.5	429.3	305.5	123.74	3.469	
5,950.0	4,619.5	5,850.0	4,435.1	90.9	89.6	68.54	-594.6	2,639.9	441.6	318.2	123.37	3.579	
6,000.0	4,653.3	5,878.1	4,448.4	90.9	89.7	65.62	-597.4	2,615.3	452.9	328.9	124.03	3.652	
6,050.0	4,684.4	5,910.5	4,462.5	90.9	89.8	63.09	-600.2	2,586.3	463.3	338.3	125.08	3.704	
6,100.0	4,712.6	5,950.0	4,477.6	91.0	90.0	60.87	-603.3	2,550.0	472.8	346.3	126.49	3.738	
6,150.0	4,737.5	5,974.8	4,486.0	91.1	90.2	59.23	-605.0	2,526.7	481.0	352.3	128.70	3.737	
6,200.0	4,759.3	6,000.0	4,493.6	91.2	90.3	57.86	-606.5	2,502.7	488.2	357.0	131.21	3.721	
6,250.0	4,777.5	6,038.6	4,503.4	91.4	90.5	56.66	-608.5	2,465.4	494.0	360.1	133.90	3.689	
6,300.0	4,792.3	6,070.4	4,509.8	91.7	90.8	55.78	-609.8	2,434.3	498.7	361.8	136.91	3.643	
6,350.0	4,803.4	6,100.0	4,514.4	91.9	91.0	55.16	-610.8	2,405.1	502.2	362.1	140.09	3.585	
6,400.0	4,810.9	6,133.8	4,518.0	92.2	91.2	54.75	-611.5	2,371.5	504.4	361.0	143.38	3.518	
6,450.0	4,814.6	6,165.5	4,519.8	92.6	91.5	54.57	-611.9	2,339.9	505.3	358.6	146.71	3.444	
6,480.8	4,815.0	6,185.0	4,520.1	92.8	91.6	54.57	-611.9	2,320.4	505.2	356.5	148.76	3.396	
6,499.1	4,814.8	6,198.1	4,520.0	92.9	91.7	54.57	-611.9	2,307.3	505.2	356.2	149.00	3.390	
6,500.0	4,814.8	6,198.1	4,520.0	92.9	91.7	54.57	-611.9	2,307.3	505.2	356.2	149.00	3.390	
6,600.0	4,813.8	6,296.6	4,518.2	93.7	92.6	54.50	-611.6	2,208.8	505.6	355.2	150.48	3.360	
6,700.0	4,812.8	6,396.6	4,516.4	94.6	93.6	54.42	-611.3	2,108.9	506.1	354.0	152.17	3.326	
6,800.0	4,811.8	6,496.5	4,514.6	95.6	94.7	54.34	-610.9	2,008.9	506.6	352.6	154.04	3.289	
6,900.0	4,810.9	6,596.5	4,512.7	96.7	95.9	54.26	-610.6	1,908.9	507.1	351.0	156.09	3.249	
7,000.0	4,809.9	6,696.5	4,510.9	97.9	97.3	54.19	-610.2	1,808.9	507.6	349.3	158.31	3.206	
7,100.0	4,808.9	6,796.5	4,509.1	99.3	98.7	54.11	-609.9	1,708.9	508.1	347.4	160.70	3.162	
7,200.0	4,807.9	6,896.5	4,507.3	100.7	100.2	54.03	-609.6	1,609.0	508.6	345.3	163.24	3.116	
7,300.0	4,806.9	6,996.5	4,505.4	102.2	101.8	53.96	-609.2	1,509.0	509.1	343.1	165.93	3.068	
7,400.0	4,805.9	7,096.5	4,503.6	103.9	103.6	53.88	-608.9	1,409.0	509.6	340.8	168.76	3.019	
7,500.0	4,804.9	7,196.5	4,501.8	105.6	105.3	53.81	-608.6	1,309.0	510.1	338.3	171.72	2.970	
7,600.0	4,804.0	7,296.5	4,500.0	107.4	107.2	53.73	-608.2	1,209.0	510.6	335.8	174.80	2.921	
7,700.0	4,803.0	7,396.5	4,498.1	109.2	109.2	53.65	-607.9	1,109.1	511.0	333.0	178.00	2.871	
7,800.0	4,802.0	7,496.5	4,496.3	111.2	111.2	53.58	-607.6	1,009.1	511.5	330.2	181.31	2.821	
7,900.0	4,801.0	7,596.5	4,494.5	113.2	113.3	53.50	-607.2	909.1	512.0	327.3	184.72	2.772	
8,000.0	4,800.0	7,696.5	4,492.7	115.3	115.5	53.43	-606.9	809.1	512.5	324.3	188.23	2.723	
8,100.0	4,799.0	7,796.5	4,490.8	117.5	117.7	53.35	-606.5	709.1	513.0	321.2	191.83	2.674	
8,200.0	4,798.0	7,896.5	4,489.0	119.7	120.0	53.28	-606.2	609.2	513.5	318.0	195.51	2.627	

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-3H - Wellbore #1 - Plan #2 (12-06-18)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,300.0	4,797.0	7,996.5	4,487.2	122.0	122.3	53.20	-605.9	509.2	514.0	314.8	199.27	2.580	
8,400.0	4,796.1	8,096.5	4,485.4	124.3	124.7	53.13	-605.5	409.2	514.5	311.4	203.11	2.533	
8,500.0	4,795.1	8,196.5	4,483.5	126.7	127.1	53.05	-605.2	309.2	515.1	308.0	207.01	2.488	
8,600.0	4,794.1	8,296.5	4,481.7	129.2	129.6	52.98	-604.9	209.2	515.6	304.6	210.98	2.444	
8,700.0	4,793.1	8,396.5	4,479.9	131.7	132.2	52.91	-604.5	109.3	516.1	301.1	215.01	2.400	
8,800.0	4,792.1	8,496.5	4,478.1	134.2	134.7	52.83	-604.2	9.3	516.6	297.5	219.09	2.358	
8,900.0	4,791.1	8,596.5	4,476.2	136.8	137.3	52.76	-603.9	-90.7	517.1	293.8	223.23	2.316	
9,000.0	4,790.1	8,696.5	4,474.4	139.4	140.0	52.68	-603.5	-190.7	517.6	290.2	227.41	2.276	
9,100.0	4,789.1	8,796.5	4,472.6	142.0	142.7	52.61	-603.2	-290.6	518.1	286.4	231.64	2.237	
9,200.0	4,788.2	8,896.5	4,470.8	144.7	145.4	52.54	-602.8	-390.6	518.6	282.7	235.91	2.198	
9,300.0	4,787.2	8,996.5	4,468.9	147.4	148.1	52.46	-602.5	-490.6	519.1	278.9	240.22	2.161	
9,400.0	4,786.2	9,096.5	4,467.1	150.2	150.9	52.39	-602.2	-590.6	519.6	275.1	244.57	2.125	
9,500.0	4,785.2	9,196.5	4,465.3	153.0	153.7	52.32	-601.8	-690.6	520.1	271.2	248.95	2.089	
9,600.0	4,784.2	9,296.5	4,463.5	155.8	156.5	52.24	-601.5	-790.5	520.6	267.3	253.36	2.055	
9,700.0	4,783.2	9,396.4	4,461.6	158.6	159.4	52.17	-601.2	-890.5	521.2	263.4	257.81	2.022	
9,800.0	4,782.2	9,496.4	4,459.8	161.5	162.2	52.10	-600.8	-990.5	521.7	259.4	262.28	1.989	
9,900.0	4,781.3	9,596.4	4,458.0	164.4	165.1	52.03	-600.5	-1,090.5	522.2	255.4	266.77	1.957	
10,000.0	4,780.3	9,696.4	4,456.2	167.3	168.0	51.95	-600.2	-1,190.5	522.7	251.4	271.29	1.927	
10,100.0	4,779.3	9,796.4	4,454.4	170.2	171.0	51.88	-599.8	-1,290.4	523.2	247.4	275.83	1.897	
10,200.0	4,778.3	9,896.4	4,452.5	173.1	173.9	51.81	-599.5	-1,390.4	523.7	243.3	280.39	1.868	
10,300.0	4,777.3	9,996.4	4,450.7	176.1	176.9	51.74	-599.1	-1,490.4	524.3	239.3	284.97	1.840	
10,400.0	4,776.3	10,096.4	4,448.9	179.1	179.9	51.67	-598.8	-1,590.4	524.8	235.2	289.57	1.812	
10,500.0	4,775.3	10,196.4	4,447.1	182.1	182.9	51.60	-598.5	-1,690.4	525.3	231.1	294.18	1.786	
10,600.0	4,774.3	10,296.4	4,445.2	185.1	185.9	51.52	-598.1	-1,790.3	525.8	227.0	298.81	1.760	
10,700.0	4,773.4	10,396.4	4,443.4	188.1	189.0	51.45	-597.8	-1,890.3	526.3	222.9	303.45	1.735	
10,800.0	4,772.4	10,496.4	4,441.6	191.1	192.0	51.38	-597.5	-1,990.3	526.9	218.8	308.10	1.710	
10,900.0	4,771.4	10,596.4	4,439.8	194.2	195.1	51.31	-597.1	-2,090.3	527.4	214.6	312.76	1.686	
11,000.0	4,770.4	10,696.4	4,437.9	197.3	198.2	51.24	-596.8	-2,190.3	527.9	210.5	317.44	1.663	
11,100.0	4,769.4	10,796.4	4,436.1	200.4	201.2	51.17	-596.5	-2,290.2	528.4	206.3	322.12	1.640	
11,200.0	4,768.4	10,896.4	4,434.3	203.4	204.3	51.10	-596.1	-2,390.2	529.0	202.1	326.82	1.619	
11,300.0	4,767.4	10,996.4	4,432.5	206.6	207.4	51.03	-595.8	-2,490.2	529.5	198.0	331.52	1.597	
11,400.0	4,766.4	11,096.4	4,430.6	209.7	210.6	50.96	-595.5	-2,590.2	530.0	193.8	336.23	1.576	
11,500.0	4,765.5	11,196.4	4,428.8	212.8	213.7	50.89	-595.1	-2,690.2	530.5	189.6	340.94	1.556	
11,600.0	4,764.5	11,296.4	4,427.0	215.9	216.8	50.82	-594.8	-2,790.1	531.1	185.4	345.66	1.536	
11,700.0	4,763.5	11,396.4	4,425.2	219.1	220.0	50.75	-594.4	-2,890.1	531.6	181.2	350.39	1.517	
11,800.0	4,762.5	11,496.4	4,423.3	222.2	223.1	50.68	-594.1	-2,990.1	532.1	177.0	355.12	1.498	Level 3
11,900.0	4,761.5	11,596.4	4,421.5	225.4	226.3	50.61	-593.8	-3,090.1	532.7	172.8	359.85	1.480	Level 3
12,000.0	4,760.5	11,696.4	4,419.7	228.6	229.5	50.54	-593.4	-3,190.0	533.2	168.6	364.59	1.462	Level 3
12,100.0	4,759.5	11,796.4	4,417.9	231.7	232.7	50.47	-593.1	-3,290.0	533.7	164.4	369.33	1.445	Level 3
12,200.0	4,758.5	11,896.4	4,416.0	234.9	235.8	50.40	-592.8	-3,390.0	534.3	160.2	374.07	1.428	Level 3
12,300.0	4,757.6	11,996.4	4,414.2	238.1	239.0	50.33	-592.4	-3,490.0	534.8	156.0	378.81	1.412	Level 3
12,400.0	4,756.6	12,096.4	4,412.4	241.3	242.2	50.26	-592.1	-3,590.0	535.3	151.8	383.56	1.396	Level 3
12,500.0	4,755.6	12,196.3	4,410.6	244.5	245.4	50.19	-591.8	-3,689.9	535.9	147.6	388.31	1.380	Level 3
12,600.0	4,754.6	12,296.3	4,408.7	247.7	248.7	50.12	-591.4	-3,789.9	536.4	143.4	393.05	1.365	Level 3
12,700.0	4,753.6	12,396.3	4,406.9	251.0	251.9	50.06	-591.1	-3,889.9	536.9	139.1	397.80	1.350	Level 3
12,800.0	4,752.6	12,496.3	4,405.1	254.2	255.1	49.99	-590.7	-3,989.9	537.5	134.9	402.55	1.335	Level 3
12,900.0	4,751.6	12,596.3	4,403.3	257.4	258.3	49.92	-590.4	-4,089.9	538.0	130.7	407.30	1.321	Level 3
13,000.0	4,750.7	12,696.3	4,401.4	260.7	261.6	49.85	-590.1	-4,189.8	538.6	126.5	412.04	1.307	Level 3
13,065.9	4,750.0	12,762.3	4,400.2	262.8	263.7	49.81	-589.8	-4,255.8	538.9	123.7	415.17	1.298	Level 3, SF

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-4H - Wellbore #1 - Plan #2 (12-06-18)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	58.3	0.0	58.4				
100.0	100.0	97.0	97.0	0.1	0.1	0.00	58.3	0.0	58.3	58.0	0.27	214.920	
200.0	200.0	197.0	197.0	0.4	0.4	0.00	58.3	0.0	58.3	57.5	0.82	71.280	
300.0	300.0	297.0	297.0	0.7	0.7	0.00	58.3	0.0	58.3	56.9	1.37	42.596	CC
400.0	400.0	397.2	397.1	0.9	0.9	-104.47	58.1	2.1	58.7	56.8	1.89	31.044	ES
500.0	499.7	497.3	497.1	1.2	1.2	-104.37	57.7	8.5	59.9	57.4	2.43	24.637	
600.0	599.1	597.5	596.7	1.5	1.5	-104.13	56.9	19.2	61.8	58.8	3.06	20.222	
700.0	698.0	697.7	695.7	1.9	1.9	-103.78	55.9	34.3	64.6	60.7	3.81	16.952	
800.0	796.0	797.8	793.9	2.4	2.4	-103.33	54.5	53.7	68.1	63.3	4.72	14.432	
900.0	893.2	897.8	891.1	2.9	2.9	-102.81	52.9	77.3	72.3	66.5	5.81	12.455	
1,000.0	989.2	997.8	987.1	3.6	3.6	-102.25	50.9	105.2	77.4	70.3	7.10	10.893	
1,100.0	1,083.9	1,097.8	1,081.8	4.3	4.3	-101.67	48.7	137.1	83.2	74.5	8.62	9.652	
1,200.0	1,177.0	1,197.7	1,174.9	5.2	5.2	-101.08	46.1	173.1	89.7	79.3	10.36	8.660	
1,300.0	1,268.6	1,297.5	1,266.3	6.2	6.2	-100.49	43.3	213.2	96.9	84.6	12.33	7.861	
1,400.0	1,358.3	1,397.3	1,355.8	7.4	7.3	-99.92	40.3	257.1	104.9	90.4	14.55	7.211	
1,500.0	1,445.9	1,496.9	1,443.2	8.6	8.5	-99.37	36.9	304.8	113.6	96.6	17.02	6.677	
1,600.0	1,531.4	1,596.5	1,528.4	10.0	9.9	-98.84	33.3	356.2	123.0	103.2	19.73	6.233	
1,700.0	1,614.5	1,696.0	1,611.2	11.5	11.4	-98.33	29.4	411.2	133.0	110.3	22.69	5.861	
1,800.0	1,695.2	1,795.4	1,691.5	13.1	13.0	-97.84	25.3	469.6	143.7	117.8	25.91	5.546	
1,900.0	1,773.2	1,894.7	1,769.1	14.9	14.7	-97.37	21.0	531.5	155.0	125.6	29.38	5.276	
2,000.0	1,848.3	1,993.9	1,843.8	16.7	16.6	-96.92	16.4	596.5	166.9	133.8	33.10	5.043	
2,100.0	1,920.6	2,093.0	1,915.6	18.7	18.6	-96.49	11.7	664.7	179.4	142.3	37.06	4.841	
2,200.0	1,989.7	2,192.0	1,984.3	20.9	20.7	-96.08	6.7	735.8	192.5	151.2	41.27	4.664	
2,302.3	2,057.1	2,293.2	2,051.3	23.2	22.9	-95.67	1.4	811.5	206.4	160.5	45.81	4.504	
2,400.0	2,119.8	2,389.7	2,112.0	25.5	25.2	-95.10	-3.9	886.3	219.9	169.6	50.34	4.369	
2,500.0	2,184.1	2,488.7	2,173.0	27.8	27.6	-94.18	-9.3	964.1	233.9	178.9	55.06	4.249	
2,600.0	2,248.3	2,587.6	2,233.9	30.1	30.0	-93.37	-14.8	1,041.8	248.0	188.2	59.78	4.148	
2,700.0	2,312.5	2,686.6	2,294.9	32.5	32.4	-92.65	-20.2	1,119.5	262.0	197.5	64.51	4.062	
2,800.0	2,376.7	2,785.5	2,355.9	34.8	34.8	-91.99	-25.7	1,197.3	276.2	206.9	69.24	3.988	
2,900.0	2,440.9	2,884.5	2,416.9	37.2	37.3	-91.41	-31.2	1,275.0	290.3	216.3	73.97	3.925	
3,000.0	2,505.1	2,983.4	2,477.8	39.5	39.7	-90.87	-36.6	1,352.8	304.5	225.8	78.71	3.869	
3,100.0	2,569.3	3,082.4	2,538.8	41.9	42.1	-90.39	-42.1	1,430.5	318.7	235.3	83.44	3.819	
3,200.0	2,633.5	3,181.3	2,599.8	44.3	44.5	-89.94	-47.5	1,508.3	332.9	244.7	88.17	3.776	
3,300.0	2,697.7	3,280.3	2,660.8	46.6	47.0	-89.53	-53.0	1,586.0	347.2	254.3	92.90	3.737	
3,400.0	2,761.9	3,379.2	2,721.7	49.0	49.4	-89.16	-58.4	1,663.7	361.4	263.8	97.63	3.702	
3,500.0	2,826.1	3,478.2	2,782.7	51.4	51.8	-88.81	-63.9	1,741.5	375.7	273.3	102.36	3.670	
3,600.0	2,890.3	3,577.2	2,843.7	53.8	54.3	-88.49	-69.3	1,819.2	390.0	282.9	107.09	3.641	
3,700.0	2,954.5	3,676.1	2,904.7	56.1	56.7	-88.19	-74.8	1,897.0	404.3	292.4	111.82	3.615	
3,800.0	3,018.7	3,775.1	2,965.6	58.5	59.2	-87.91	-80.2	1,974.7	418.6	302.0	116.54	3.591	
3,900.0	3,082.9	3,874.0	3,026.6	60.9	61.6	-87.65	-85.7	2,052.4	432.9	311.6	121.27	3.570	
4,000.0	3,147.1	3,973.0	3,087.6	63.3	64.0	-87.41	-91.1	2,130.2	447.2	321.2	125.99	3.549	
4,100.0	3,211.3	4,071.9	3,148.6	65.6	66.5	-87.18	-96.6	2,207.9	461.5	330.8	130.71	3.531	
4,200.0	3,275.5	4,170.9	3,209.5	68.0	68.9	-86.96	-102.0	2,285.7	475.9	340.4	135.43	3.514	
4,300.0	3,339.7	4,269.8	3,270.5	70.4	71.4	-86.76	-107.5	2,363.4	490.2	350.0	140.15	3.498	
4,400.0	3,403.9	4,368.8	3,331.5	72.8	73.8	-86.57	-113.0	2,441.1	504.5	359.7	144.87	3.483	
4,500.0	3,468.1	4,467.7	3,392.5	75.2	76.3	-86.39	-118.4	2,518.9	518.9	369.3	149.59	3.469	
4,600.0	3,532.3	4,566.7	3,453.4	77.5	78.7	-86.22	-123.9	2,596.6	533.3	378.9	154.31	3.456	
4,700.0	3,596.5	4,665.6	3,514.4	79.9	81.2	-86.06	-129.3	2,674.4	547.6	388.6	159.03	3.444	
4,800.0	3,660.7	4,780.2	3,587.2	82.3	83.8	-86.16	-135.8	2,762.5	561.4	397.3	164.04	3.422	
4,900.0	3,724.9	4,910.7	3,685.9	84.7	86.1	-88.43	-144.6	2,847.1	570.3	401.0	169.27	3.369	
4,941.5	3,751.5	4,961.7	3,728.8	85.7	86.8	-89.97	-148.5	2,874.3	572.7	401.5	171.21	3.345	
4,950.0	3,757.0	4,971.9	3,737.7	85.9	86.9	-90.60	-149.3	2,879.4	573.2	401.6	171.51	3.342	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-4H - Wellbore #1 - Plan #2 (12-06-18)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	3,791.0	5,030.5	3,789.9	86.9	87.5	-94.52	-153.9	2,905.4	576.4	403.5	172.94	3.333	
5,050.0	3,827.4	5,086.8	3,842.2	87.8	88.0	-98.89	-158.6	2,925.9	580.6	406.8	173.83	3.340	
5,100.0	3,866.2	5,141.2	3,894.2	88.6	88.3	-103.81	-163.2	2,941.1	585.8	411.5	174.24	3.362	
5,150.0	3,907.1	5,193.8	3,945.5	89.3	88.5	-109.41	-167.8	2,951.6	591.9	417.7	174.21	3.398	
5,200.0	3,949.8	5,244.6	3,995.7	89.9	88.7	-115.93	-172.3	2,957.7	599.0	425.2	173.82	3.446	
5,250.0	3,994.1	5,294.0	4,044.8	90.4	88.7	-123.66	-176.6	2,959.7	606.9	433.8	173.12	3.506	
5,300.0	4,039.7	5,341.9	4,092.6	90.8	88.7	-133.04	-180.9	2,957.9	615.6	443.4	172.19	3.575	
5,350.0	4,086.3	5,388.7	4,138.8	91.1	88.7	-144.58	-185.0	2,952.8	625.0	453.9	171.08	3.653	
5,400.0	4,133.7	5,434.3	4,183.5	91.3	88.6	-158.65	-189.0	2,944.5	635.0	465.2	169.87	3.738	
5,450.0	4,181.5	5,478.9	4,226.5	91.5	88.5	-175.02	-192.8	2,933.3	645.5	476.9	168.61	3.828	
5,500.0	4,229.4	5,522.6	4,267.8	91.5	88.4	167.71	-196.5	2,919.4	656.4	489.0	167.35	3.922	
5,550.0	4,277.1	5,565.6	4,307.4	91.5	88.3	151.55	-200.0	2,903.0	667.5	501.3	166.14	4.017	
5,600.0	4,324.5	5,607.8	4,345.1	91.5	88.2	137.85	-203.4	2,884.4	678.7	513.7	165.03	4.112	
5,650.0	4,371.0	5,650.0	4,381.4	91.4	88.1	126.81	-206.6	2,863.3	689.9	525.9	164.05	4.206	
5,700.0	4,416.6	5,690.5	4,415.0	91.4	88.1	118.08	-209.6	2,840.7	701.1	537.8	163.25	4.294	
5,750.0	4,460.9	5,731.1	4,447.1	91.3	88.0	111.09	-212.4	2,816.1	712.0	549.4	162.65	4.378	
5,800.0	4,503.5	5,771.3	4,477.3	91.2	88.0	105.44	-215.1	2,789.7	722.7	560.4	162.26	4.454	
5,850.0	4,544.4	5,811.1	4,505.5	91.1	88.0	100.79	-217.6	2,761.7	732.9	570.8	162.10	4.521	
5,900.0	4,583.1	5,850.0	4,531.3	91.0	88.1	96.93	-219.9	2,732.7	742.7	580.5	162.20	4.579	
5,950.0	4,619.5	5,889.7	4,555.8	90.9	88.1	93.68	-222.1	2,701.5	752.0	589.4	162.55	4.626	
6,000.0	4,653.3	5,928.7	4,577.9	90.9	88.2	90.94	-224.0	2,669.5	760.6	597.4	163.15	4.662	
6,050.0	4,684.4	5,967.4	4,597.9	90.9	88.4	88.62	-225.8	2,636.4	768.5	604.5	164.00	4.686	
6,100.0	4,712.6	6,005.9	4,615.8	91.0	88.5	86.66	-227.4	2,602.3	775.6	610.6	165.07	4.699	
6,150.0	4,737.5	6,044.3	4,631.5	91.1	88.7	85.03	-228.8	2,567.3	782.0	615.7	166.35	4.701	
6,200.0	4,759.3	6,082.6	4,645.1	91.2	88.9	83.68	-230.0	2,531.6	787.5	619.7	167.81	4.693	
6,250.0	4,777.5	6,120.8	4,656.5	91.4	89.2	82.59	-231.0	2,495.2	792.2	622.8	169.42	4.676	
6,300.0	4,792.3	6,158.9	4,665.6	91.7	89.4	81.74	-231.8	2,458.2	795.9	624.8	171.14	4.651	
6,350.0	4,803.4	6,200.0	4,673.0	91.9	89.7	81.11	-232.4	2,417.8	798.7	625.8	172.95	4.618	
9,100.0	4,789.1	8,912.5	4,638.3	142.0	142.2	79.35	-228.6	-294.1	800.0	520.9	279.07	2.867	
9,200.0	4,788.2	9,012.5	4,636.7	144.7	144.9	79.31	-228.4	-394.1	799.9	515.5	284.40	2.813	
9,300.0	4,787.2	9,112.5	4,635.1	147.4	147.7	79.26	-228.3	-494.0	799.9	510.1	289.79	2.760	
9,400.0	4,786.2	9,212.5	4,633.5	150.2	150.4	79.22	-228.1	-594.0	799.8	504.6	295.22	2.709	
9,500.0	4,785.2	9,312.5	4,632.0	153.0	153.3	79.17	-227.9	-694.0	799.8	499.1	300.71	2.660	
9,600.0	4,784.2	9,412.5	4,630.4	155.8	156.1	79.13	-227.7	-794.0	799.7	493.5	306.25	2.611	
9,700.0	4,783.2	9,512.5	4,628.8	158.6	158.9	79.08	-227.6	-894.0	799.7	487.9	311.83	2.564	
9,800.0	4,782.2	9,612.5	4,627.2	161.5	161.8	79.04	-227.4	-994.0	799.6	482.2	317.46	2.519	
9,900.0	4,781.3	9,712.5	4,625.6	164.4	164.7	78.99	-227.2	-1,094.0	799.6	476.5	323.13	2.475	
10,000.0	4,780.3	9,812.5	4,624.0	167.3	167.7	78.95	-227.1	-1,193.9	799.5	470.7	328.83	2.431	
10,100.0	4,779.3	9,912.5	4,622.4	170.2	170.6	78.90	-226.9	-1,293.9	799.5	464.9	334.57	2.390	
10,200.0	4,778.3	10,012.5	4,620.8	173.1	173.6	78.86	-226.7	-1,393.9	799.5	459.1	340.35	2.349	
10,300.0	4,777.3	10,112.5	4,619.2	176.1	176.5	78.81	-226.6	-1,493.9	799.4	453.3	346.15	2.309	
10,400.0	4,776.3	10,212.5	4,617.6	179.1	179.5	78.76	-226.4	-1,593.9	799.4	447.4	351.99	2.271	
10,500.0	4,775.3	10,312.5	4,616.0	182.1	182.5	78.72	-226.2	-1,693.9	799.3	441.5	357.86	2.234	
10,600.0	4,774.3	10,412.5	4,614.4	185.1	185.6	78.67	-226.0	-1,793.8	799.3	435.5	363.75	2.197	
10,700.0	4,773.4	10,512.5	4,612.8	188.1	188.6	78.63	-225.9	-1,893.8	799.2	429.6	369.67	2.162	
10,800.0	4,772.4	10,612.5	4,611.2	191.1	191.7	78.58	-225.7	-1,993.8	799.2	423.6	375.62	2.128	
10,900.0	4,771.4	10,712.5	4,609.6	194.2	194.7	78.54	-225.5	-2,093.8	799.2	417.6	381.59	2.094	
11,000.0	4,770.4	10,812.5	4,608.0	197.3	197.8	78.49	-225.4	-2,193.8	799.1	411.5	387.58	2.062	
11,100.0	4,769.4	10,912.5	4,606.4	200.4	200.9	78.45	-225.2	-2,293.8	799.1	405.5	393.59	2.030	
11,200.0	4,768.4	11,012.5	4,604.8	203.4	204.0	78.40	-225.0	-2,393.8	799.0	399.4	399.62	2.000	
11,300.0	4,767.4	11,112.5	4,603.2	206.6	207.1	78.36	-224.9	-2,493.7	799.0	393.3	405.67	1.970	
11,400.0	4,766.4	11,212.5	4,601.6	209.7	210.2	78.31	-224.7	-2,593.7	799.0	387.2	411.74	1.940	

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-4H - Wellbore #1 - Plan #2 (12-06-18)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,500.0	4,765.5	11,312.5	4,600.0	212.8	213.3	78.27	-224.5	-2,693.7	798.9	381.1	417.82	1.912	
11,600.0	4,764.5	11,412.5	4,598.4	215.9	216.5	78.22	-224.3	-2,793.7	798.9	375.0	423.93	1.884	
11,700.0	4,763.5	11,512.5	4,596.8	219.1	219.6	78.18	-224.2	-2,893.7	798.9	368.8	430.04	1.858	
11,800.0	4,762.5	11,612.5	4,595.2	222.2	222.8	78.13	-224.0	-2,993.7	798.8	362.6	436.17	1.831	
11,900.0	4,761.5	11,712.5	4,593.6	225.4	226.0	78.09	-223.8	-3,093.7	798.8	356.5	442.32	1.806	
12,000.0	4,760.5	11,812.5	4,592.0	228.6	229.1	78.04	-223.7	-3,193.6	798.7	350.3	448.48	1.781	
12,100.0	4,759.5	11,912.5	4,590.4	231.7	232.3	77.99	-223.5	-3,293.6	798.7	344.1	454.65	1.757	
12,200.0	4,758.5	12,012.5	4,588.8	234.9	235.5	77.95	-223.3	-3,393.6	798.7	337.8	460.84	1.733	
12,300.0	4,757.6	12,112.5	4,587.2	238.1	238.7	77.90	-223.2	-3,493.6	798.6	331.6	467.03	1.710	
12,400.0	4,756.6	12,212.5	4,585.6	241.3	241.9	77.86	-223.0	-3,593.6	798.6	325.4	473.24	1.688	
12,500.0	4,755.6	12,312.5	4,584.0	244.5	245.1	77.81	-222.8	-3,693.6	798.6	319.1	479.45	1.666	
12,600.0	4,754.6	12,412.5	4,582.4	247.7	248.3	77.77	-222.6	-3,793.5	798.5	312.9	485.68	1.644	
12,700.0	4,753.6	12,512.5	4,580.8	251.0	251.6	77.72	-222.5	-3,893.5	798.5	306.6	491.91	1.623	
12,800.0	4,752.6	12,612.5	4,579.2	254.2	254.8	77.68	-222.3	-3,993.5	798.5	300.3	498.16	1.603	
12,900.0	4,751.6	12,712.5	4,577.6	257.4	258.0	77.63	-222.1	-4,093.5	798.4	294.0	504.41	1.583	
13,000.0	4,750.7	12,812.4	4,576.0	260.7	261.3	77.59	-222.0	-4,193.5	798.4	287.7	510.67	1.563	
13,048.0	4,750.2	12,860.4	4,575.3	262.2	262.8	77.56	-221.9	-4,241.5	798.4	284.7	513.68	1.554	
13,065.9	4,750.0	12,876.8	4,575.0	262.8	263.3	77.56	-221.9	-4,257.8	798.4	283.6	514.75	1.551	SF

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-5H - Wellbore #1 - Plan #2 (12-06-18)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.01	87.4	0.0	87.6				
100.0	100.0	95.0	95.0	0.1	0.1	0.01	87.4	0.0	87.4	87.2	0.27	325.680	
200.0	200.0	195.0	195.0	0.4	0.4	0.01	87.4	0.0	87.4	86.6	0.81	107.645	CC
300.0	300.0	294.8	294.8	0.7	0.7	1.28	87.5	2.0	87.5	86.2	1.35	64.615	ES
400.0	400.0	394.5	394.2	0.9	0.9	-100.41	87.7	8.2	88.4	86.5	1.89	46.768	
500.0	499.7	493.9	493.1	1.2	1.3	-97.74	87.9	18.8	90.7	88.2	2.48	36.533	
600.0	599.1	593.1	591.2	1.5	1.7	-95.22	88.3	33.6	94.4	91.2	3.18	29.654	
700.0	698.0	692.1	688.3	1.9	2.1	-92.94	88.9	52.6	99.4	95.4	4.02	24.725	
800.0	796.0	790.7	784.2	2.4	2.7	-90.95	89.5	75.7	105.8	100.8	5.02	21.061	
900.0	893.2	889.2	878.8	2.9	3.3	-89.26	90.2	102.8	113.4	107.2	6.20	18.275	
1,000.0	989.2	987.3	971.9	3.6	4.1	-87.86	91.1	133.9	122.1	114.6	7.58	16.122	
1,100.0	1,083.9	1,085.1	1,063.3	4.3	4.9	-86.73	92.0	168.7	132.1	122.9	9.15	14.431	
1,200.0	1,177.0	1,182.6	1,152.8	5.2	5.9	-85.83	93.0	207.4	143.1	132.1	10.94	13.084	
1,300.0	1,268.6	1,279.8	1,240.3	6.2	7.0	-85.13	94.2	249.6	155.2	142.2	12.94	11.996	
1,400.0	1,358.3	1,376.7	1,325.7	7.4	8.2	-84.59	95.4	295.4	168.3	153.1	15.16	11.102	
1,500.0	1,445.9	1,473.2	1,408.7	8.6	9.4	-84.18	96.7	344.5	182.4	164.8	17.61	10.358	
1,600.0	1,531.4	1,569.4	1,489.4	10.0	10.9	-83.87	98.2	397.0	197.4	177.1	20.28	9.733	
1,700.0	1,614.5	1,665.3	1,567.5	11.5	12.4	-83.65	99.7	452.5	213.4	190.2	23.19	9.200	
1,800.0	1,695.2	1,760.8	1,642.9	13.1	14.0	-83.49	101.3	511.1	230.2	203.9	26.34	8.742	
1,900.0	1,773.2	1,856.0	1,715.6	14.9	15.7	-83.37	102.9	572.5	248.0	218.2	29.71	8.345	
2,000.0	1,848.3	1,950.9	1,785.5	16.7	17.6	-83.29	104.6	636.7	266.5	233.2	33.32	7.999	
2,100.0	1,920.6	2,045.5	1,852.4	18.7	19.5	-83.23	106.5	703.5	285.8	248.7	37.15	7.694	
2,200.0	1,989.7	2,140.5	1,916.9	20.9	21.6	-83.20	108.3	773.2	305.9	264.6	41.21	7.422	
2,302.3	2,057.1	2,240.6	1,983.8	23.2	23.8	-83.71	110.3	847.6	326.3	280.6	45.67	7.144	
2,400.0	2,119.8	2,336.0	2,047.7	25.5	25.9	-84.94	112.3	918.5	345.7	295.6	50.10	6.901	
2,500.0	2,184.1	2,433.8	2,113.1	27.8	28.1	-86.06	114.2	991.2	365.7	311.1	54.64	6.693	
2,600.0	2,248.3	2,531.5	2,178.4	30.1	30.3	-87.07	116.2	1,063.8	385.8	326.7	59.18	6.519	
2,700.0	2,312.5	2,629.3	2,243.8	32.5	32.5	-87.98	118.2	1,136.4	406.1	342.3	63.73	6.371	
2,800.0	2,376.7	2,727.0	2,309.2	34.8	34.7	-88.80	120.1	1,209.0	426.4	358.1	68.29	6.244	
2,900.0	2,440.9	2,824.7	2,374.6	37.2	36.9	-89.55	122.1	1,281.7	446.8	374.0	72.84	6.134	
3,000.0	2,505.1	2,922.5	2,440.0	39.5	39.1	-90.23	124.0	1,354.3	467.3	389.9	77.39	6.038	
3,100.0	2,569.3	3,020.2	2,505.3	41.9	41.4	-90.85	126.0	1,426.9	487.8	405.9	81.94	5.953	
3,200.0	2,633.5	3,117.9	2,570.7	44.3	43.6	-91.43	128.0	1,499.5	508.4	421.9	86.49	5.878	
3,300.0	2,697.7	3,215.7	2,636.1	46.6	45.8	-91.96	129.9	1,572.2	529.0	438.0	91.03	5.811	
3,400.0	2,761.9	3,313.4	2,701.5	49.0	48.0	-92.44	131.9	1,644.8	549.7	454.1	95.58	5.751	
3,500.0	2,826.1	3,411.2	2,766.9	51.4	50.2	-92.90	133.9	1,717.4	570.3	470.2	100.12	5.697	
3,600.0	2,890.3	3,508.9	2,832.2	53.8	52.4	-93.32	135.8	1,790.0	591.1	486.4	104.66	5.648	
3,700.0	2,954.5	3,606.6	2,897.6	56.1	54.6	-93.72	137.8	1,862.7	611.8	502.6	109.19	5.603	
3,800.0	3,018.7	3,704.4	2,963.0	58.5	56.9	-94.08	139.8	1,935.3	632.6	518.9	113.73	5.563	
3,900.0	3,082.9	3,802.1	3,028.4	60.9	59.1	-94.43	141.7	2,007.9	653.4	535.2	118.26	5.525	
4,000.0	3,147.1	3,899.8	3,093.8	63.3	61.3	-94.75	143.7	2,080.5	674.3	551.5	122.79	5.491	
4,100.0	3,211.3	3,997.6	3,159.1	65.6	63.5	-95.06	145.6	2,153.2	695.1	567.8	127.32	5.460	
4,200.0	3,275.5	4,095.3	3,224.5	68.0	65.8	-95.34	147.6	2,225.8	716.0	584.1	131.84	5.430	
4,300.0	3,339.7	4,193.1	3,289.9	70.4	68.0	-95.61	149.6	2,298.4	736.8	600.5	136.37	5.403	
4,400.0	3,403.9	4,290.8	3,355.3	72.8	70.2	-95.87	151.5	2,371.0	757.7	616.9	140.89	5.378	
4,500.0	3,468.1	4,388.5	3,420.7	75.2	72.4	-96.11	153.5	2,443.7	778.7	633.2	145.41	5.355	
4,600.0	3,532.3	4,486.3	3,486.0	77.5	74.6	-96.34	155.5	2,516.3	799.6	649.6	149.93	5.333	SF

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-6H - Wellbore #1 - Plan #2 (12-06-18)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	120.2	0.0	120.4				
100.0	100.0	93.0	93.0	0.1	0.1	0.00	120.2	0.0	120.2	120.0	0.27	452.442	
200.0	200.0	193.0	193.0	0.4	0.4	0.00	120.2	0.0	120.2	119.4	0.81	149.022	CC
300.0	300.0	292.5	292.4	0.7	0.7	0.88	120.4	1.9	120.4	119.1	1.35	89.270	ES
400.0	400.0	391.7	391.5	0.9	0.9	-101.62	121.0	8.0	121.7	119.8	1.89	64.561	
500.0	499.7	490.7	489.9	1.2	1.3	-99.73	122.1	18.3	124.7	122.2	2.48	50.345	
600.0	599.1	589.5	587.6	1.5	1.6	-97.93	123.5	32.8	129.2	126.1	3.17	40.742	
700.0	698.0	687.9	684.3	1.9	2.1	-96.27	125.4	51.5	135.4	131.4	4.00	33.825	
800.0	796.0	786.1	779.8	2.4	2.6	-94.80	127.7	74.2	143.1	138.1	4.99	28.657	
900.0	893.2	884.0	873.9	2.9	3.3	-93.51	130.3	100.8	152.4	146.2	6.17	24.716	
1,000.0	989.2	981.5	966.4	3.6	4.0	-92.42	133.4	131.3	163.1	155.6	7.53	21.665	
1,100.0	1,083.9	1,078.6	1,057.2	4.3	4.9	-91.50	136.8	165.5	175.2	166.2	9.09	19.274	
1,200.0	1,177.0	1,175.4	1,146.2	5.2	5.8	-90.73	140.6	203.4	188.8	177.9	10.86	17.375	
1,300.0	1,268.6	1,271.7	1,233.1	6.2	6.9	-90.10	144.8	244.8	203.6	190.8	12.85	15.846	
1,400.0	1,358.3	1,367.6	1,317.8	7.4	8.0	-89.58	149.3	289.6	219.8	204.8	15.06	14.600	
1,500.0	1,445.9	1,463.1	1,400.1	8.6	9.3	-89.15	154.1	337.7	237.2	219.7	17.48	13.571	
1,600.0	1,531.4	1,558.2	1,480.1	10.0	10.7	-88.79	159.2	388.8	255.9	235.7	20.13	12.711	
1,700.0	1,614.5	1,652.8	1,557.4	11.5	12.1	-88.49	164.7	443.0	275.7	252.7	23.00	11.984	
1,800.0	1,695.2	1,747.0	1,632.2	13.1	13.7	-88.23	170.4	500.1	296.6	270.5	26.10	11.365	
1,900.0	1,773.2	1,840.8	1,704.2	14.9	15.4	-88.00	176.4	559.9	318.6	289.2	29.42	10.831	
2,000.0	1,848.3	1,934.1	1,773.3	16.7	17.2	-87.79	182.6	622.2	341.7	308.7	32.95	10.368	
2,100.0	1,920.6	2,027.0	1,839.6	18.7	19.1	-87.59	189.1	687.0	365.7	329.0	36.71	9.963	
2,200.0	1,989.7	2,119.5	1,902.9	20.9	21.0	-87.41	195.9	754.2	390.8	350.1	40.67	9.607	
2,302.3	2,057.1	2,213.8	1,964.5	23.2	23.2	-87.22	203.0	825.1	417.3	372.3	44.94	9.285	
2,400.0	2,119.8	2,303.4	2,020.3	25.5	25.3	-87.45	210.0	894.9	443.6	394.4	49.20	9.016	
2,500.0	2,184.1	2,397.9	2,076.8	27.8	27.6	-87.31	217.5	970.2	471.2	417.6	53.66	8.782	
2,600.0	2,248.3	2,493.9	2,134.1	30.1	29.9	-87.15	225.2	1,046.9	499.0	440.8	58.17	8.577	
2,700.0	2,312.5	2,590.0	2,191.4	32.5	32.3	-87.02	232.9	1,123.6	526.7	464.0	62.70	8.400	
2,800.0	2,376.7	2,686.1	2,248.7	34.8	34.7	-86.89	240.6	1,200.3	554.5	487.2	67.24	8.246	
2,900.0	2,440.9	2,782.1	2,306.1	37.2	37.1	-86.78	248.3	1,277.0	582.2	510.4	71.79	8.110	
3,000.0	2,505.1	2,878.2	2,363.4	39.5	39.5	-86.68	256.0	1,353.8	610.0	533.6	76.34	7.990	
3,100.0	2,569.3	2,974.3	2,420.7	41.9	41.8	-86.59	263.7	1,430.5	637.7	556.8	80.90	7.882	
3,200.0	2,633.5	3,070.3	2,478.0	44.3	44.2	-86.50	271.4	1,507.2	665.5	580.0	85.47	7.786	
3,300.0	2,697.7	3,166.4	2,535.3	46.6	46.6	-86.42	279.1	1,583.9	693.2	603.2	90.04	7.699	
3,400.0	2,761.9	3,262.5	2,592.6	49.0	49.0	-86.35	286.8	1,660.6	721.0	626.4	94.61	7.621	
3,500.0	2,826.1	3,358.5	2,649.9	51.4	51.4	-86.28	294.5	1,737.3	748.7	649.5	99.18	7.549	
3,600.0	2,890.3	3,454.6	2,707.2	53.8	53.8	-86.22	302.2	1,814.1	776.5	672.7	103.76	7.483	SF

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-7H - Wellbore #1 - Plan #2 (12-06-18)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	149.4	0.0	149.6				
100.0	100.0	91.0	91.0	0.1	0.1	0.00	149.4	0.0	149.4	149.1	0.26	568.000	
200.0	200.0	191.0	191.0	0.4	0.4	0.00	149.4	0.0	149.4	148.6	0.80	186.421	
300.0	300.0	291.0	291.0	0.7	0.7	0.00	149.4	0.0	149.4	148.0	1.35	110.486	CC, ES
400.0	400.0	389.8	389.8	0.9	0.9	-104.53	149.7	1.7	150.3	148.4	1.88	80.119	
500.0	499.7	488.5	488.3	1.2	1.2	-104.61	150.9	7.6	153.1	150.7	2.42	63.337	
600.0	599.1	587.1	586.3	1.5	1.5	-104.63	153.0	17.6	157.9	154.9	3.04	51.934	
700.0	698.0	685.5	683.7	1.9	1.9	-104.60	155.8	31.7	164.6	160.8	3.78	43.569	
800.0	796.0	783.8	780.2	2.4	2.3	-104.51	159.6	49.8	173.2	168.6	4.66	37.162	
900.0	893.2	881.8	875.6	2.9	2.8	-104.38	164.1	72.0	183.8	178.0	5.71	32.154	
1,000.0	989.2	979.5	969.6	3.6	3.4	-104.21	169.4	98.0	196.1	189.2	6.95	28.202	
1,100.0	1,083.9	1,076.9	1,062.1	4.3	4.2	-103.99	175.5	127.8	210.4	202.0	8.39	25.062	
1,200.0	1,177.0	1,174.0	1,152.9	5.2	5.0	-103.74	182.3	161.3	226.4	216.4	10.04	22.550	
1,300.0	1,268.6	1,270.6	1,241.8	6.2	5.9	-103.46	189.9	198.4	244.2	232.3	11.90	20.523	
1,400.0	1,358.3	1,366.8	1,328.7	7.4	6.9	-103.15	198.2	238.9	263.7	249.8	13.97	18.874	
1,500.0	1,445.9	1,462.5	1,413.3	8.6	8.0	-102.81	207.1	282.7	284.9	268.7	16.27	17.518	
1,600.0	1,531.4	1,557.8	1,495.6	10.0	9.3	-102.45	216.8	329.8	307.8	289.0	18.78	16.392	
1,700.0	1,614.5	1,652.6	1,575.4	11.5	10.6	-102.06	227.0	379.8	332.3	310.7	21.51	15.447	
1,800.0	1,695.2	1,746.9	1,652.7	13.1	12.1	-101.66	237.8	432.8	358.2	333.8	24.46	14.647	
1,900.0	1,773.2	1,840.6	1,727.2	14.9	13.6	-101.23	249.2	488.5	385.7	358.1	27.62	13.963	
2,000.0	1,848.3	1,933.9	1,798.9	16.7	15.2	-100.78	261.1	546.8	414.6	383.6	31.00	13.373	
2,100.0	1,920.6	2,026.6	1,867.9	18.7	17.0	-100.32	273.5	607.6	444.9	410.3	34.59	12.861	
2,200.0	1,989.7	2,118.8	1,933.8	20.9	18.8	-99.83	286.4	670.8	476.4	438.1	38.38	12.414	
2,302.3	2,057.1	2,212.7	1,998.3	23.2	20.8	-99.32	300.1	737.6	510.0	467.6	42.46	12.011	
2,400.0	2,119.8	2,302.0	2,056.9	25.5	22.8	-99.46	313.6	803.6	542.9	496.4	46.53	11.668	
2,500.0	2,184.1	2,393.0	2,114.0	27.8	24.9	-99.21	327.8	873.1	577.1	526.3	50.81	11.359	
2,600.0	2,248.3	2,486.6	2,171.0	30.1	27.1	-98.78	342.6	945.8	611.6	556.4	55.20	11.080	
2,700.0	2,312.5	2,580.4	2,228.1	32.5	29.3	-98.39	357.5	1,018.7	646.1	586.5	59.61	10.838	
2,800.0	2,376.7	2,674.1	2,285.2	34.8	31.6	-98.03	372.4	1,091.5	680.6	616.6	64.04	10.628	
2,900.0	2,440.9	2,767.9	2,342.3	37.2	33.8	-97.72	387.3	1,164.4	715.2	646.7	68.47	10.445	
3,000.0	2,505.1	2,861.7	2,399.4	39.5	36.1	-97.43	402.2	1,237.3	749.8	676.8	72.91	10.283	
3,100.0	2,569.3	2,955.4	2,456.5	41.9	38.4	-97.17	417.1	1,310.2	784.3	707.0	77.35	10.140	SF

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-8H - Wellbore #1 - Plan #2 (12-06-18)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	178.5	0.0	178.8				
100.0	100.0	89.0	89.0	0.1	0.1	0.00	178.5	0.0	178.5	178.2	0.26	685.984	
200.0	200.0	189.0	189.0	0.4	0.4	0.00	178.5	0.0	178.5	177.7	0.80	224.333	
300.0	300.0	289.0	289.0	0.7	0.7	0.00	178.5	0.0	178.5	177.2	1.35	132.581	CC, ES
400.0	400.0	389.0	389.0	0.9	0.9	-105.08	178.5	0.0	179.1	177.2	1.88	95.157	
500.0	499.7	486.8	486.8	1.2	1.2	-106.48	179.0	1.6	181.3	178.9	2.41	75.112	
600.0	599.1	584.5	584.3	1.5	1.5	-107.81	180.9	7.0	186.2	183.2	3.00	62.114	
700.0	698.0	682.2	681.4	1.9	1.8	-108.99	184.0	16.5	193.5	189.9	3.67	52.769	
800.0	796.0	779.7	778.0	2.4	2.1	-110.01	188.4	29.8	203.4	198.9	4.45	45.656	
900.0	893.2	877.1	873.6	2.9	2.5	-110.84	194.2	46.9	215.7	210.3	5.39	40.053	
1,000.0	989.2	974.2	968.2	3.6	3.0	-111.46	201.2	67.9	230.5	224.0	6.48	35.563	
1,100.0	1,083.9	1,070.9	1,061.4	4.3	3.6	-111.90	209.4	92.5	247.6	239.8	7.75	31.927	
1,200.0	1,177.0	1,167.3	1,153.1	5.2	4.3	-112.16	218.8	120.7	267.0	257.8	9.22	28.965	
1,300.0	1,268.6	1,263.2	1,243.0	6.2	5.0	-112.26	229.4	152.4	288.6	277.8	10.88	26.538	
1,400.0	1,358.3	1,358.7	1,330.9	7.4	5.9	-112.21	241.1	187.4	312.5	299.8	12.74	24.526	
1,500.0	1,445.9	1,453.5	1,416.8	8.6	6.9	-112.05	253.9	225.7	338.5	323.7	14.81	22.859	
1,600.0	1,531.4	1,547.8	1,500.4	10.0	8.0	-111.78	267.7	267.0	366.6	349.5	17.08	21.459	
1,700.0	1,614.5	1,641.4	1,581.6	11.5	9.1	-111.41	282.4	311.2	396.7	377.1	19.56	20.275	
1,800.0	1,695.2	1,734.3	1,660.2	13.1	10.4	-110.97	298.1	358.1	428.7	406.4	22.25	19.267	
1,900.0	1,773.2	1,826.6	1,736.2	14.9	11.7	-110.46	314.7	407.7	462.6	437.4	25.14	18.400	
2,000.0	1,848.3	1,918.2	1,809.6	16.7	13.2	-109.90	332.0	459.8	498.3	470.1	28.23	17.650	
2,100.0	1,920.6	2,009.1	1,880.1	18.7	14.7	-109.28	350.2	514.1	535.7	504.2	31.52	16.997	
2,200.0	1,989.7	2,100.0	1,948.3	20.9	16.4	-108.61	369.2	571.1	574.8	539.8	35.01	16.418	
2,302.3	2,057.1	2,190.8	2,014.0	23.2	18.1	-107.89	389.1	630.5	616.5	577.7	38.77	15.902	
2,400.0	2,119.8	2,277.9	2,074.7	25.5	19.9	-108.06	408.9	689.8	657.1	614.6	42.50	15.460	
2,500.0	2,184.1	2,366.8	2,134.1	27.8	21.8	-107.90	429.8	752.5	699.0	652.5	46.45	15.047	
2,600.0	2,248.3	2,455.2	2,190.6	30.1	23.7	-107.47	451.4	817.0	741.1	690.6	50.51	14.672	
2,700.0	2,312.5	2,544.5	2,245.5	32.5	25.8	-106.86	473.7	883.8	783.5	728.8	54.69	14.328	SF

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Offset Design Bunker 8 Well Pad Sec.29-T5N-R68W - Bunker 8-9H - Wellbore #1 - Plan #2 (12-16-18)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

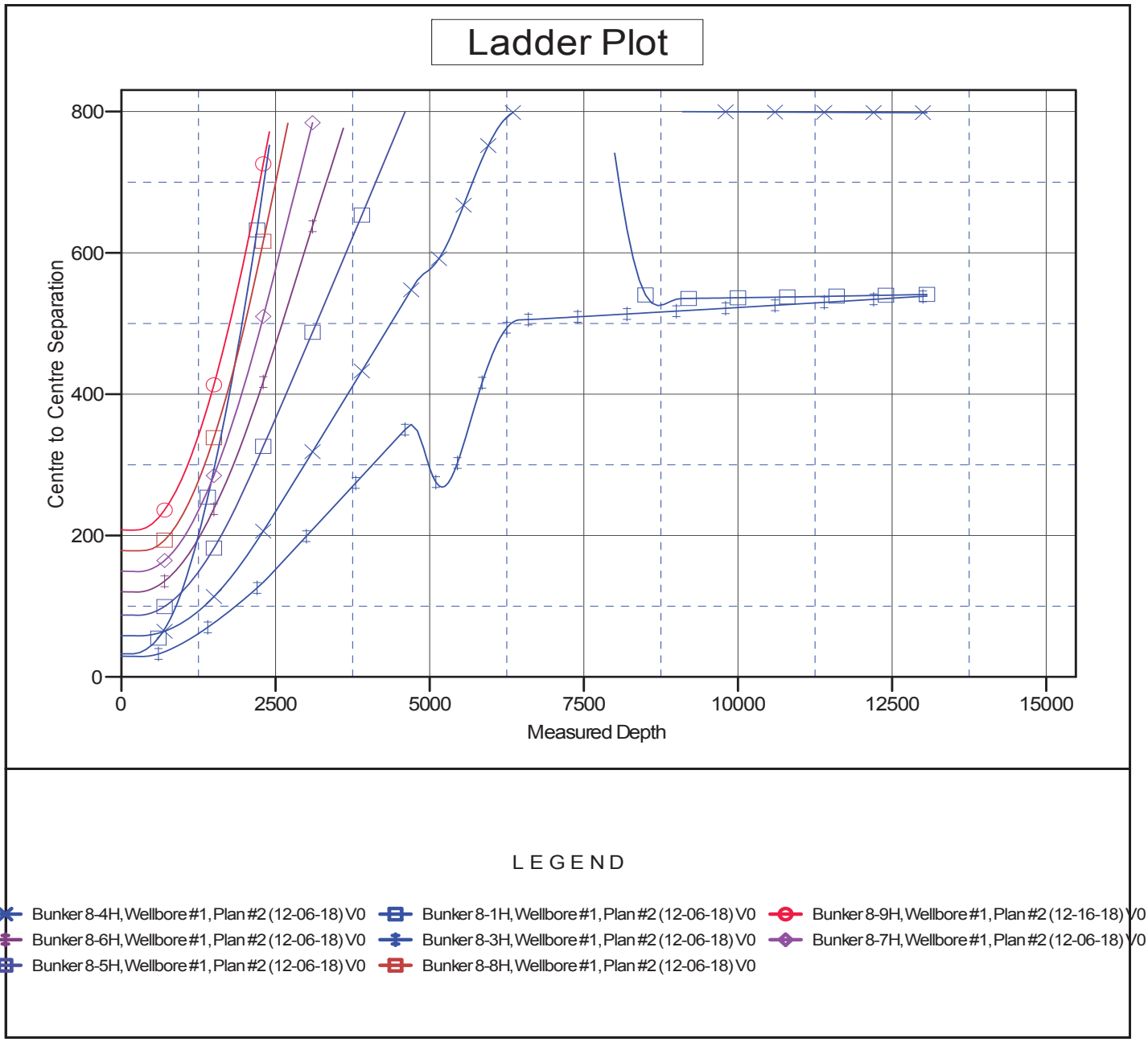
Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	207.7	0.0	208.0				
100.0	100.0	88.0	88.0	0.1	0.1	0.00	207.7	0.0	207.7	207.4	0.26	802.252	
200.0	200.0	188.0	188.0	0.4	0.4	0.00	207.7	0.0	207.7	206.9	0.79	261.876	CC, ES
300.0	300.0	285.0	284.9	0.7	0.6	0.40	208.3	1.5	208.3	207.0	1.33	156.367	
400.0	400.0	381.3	381.1	0.9	0.9	-103.11	210.4	6.6	211.2	209.3	1.87	113.152	
500.0	499.7	477.4	476.7	1.2	1.2	-102.27	214.2	15.4	216.7	214.3	2.44	88.709	
600.0	599.1	573.1	571.5	1.5	1.6	-101.53	219.4	27.9	225.1	221.9	3.11	72.350	
700.0	698.0	668.3	665.1	1.9	2.0	-100.88	226.2	43.9	236.0	232.1	3.89	60.605	
800.0	796.0	763.0	757.4	2.4	2.5	-100.34	234.4	63.4	249.6	244.8	4.82	51.803	
900.0	893.2	857.1	848.1	2.9	3.1	-99.89	244.0	86.2	265.8	259.9	5.90	45.045	
1,000.0	989.2	950.4	937.0	3.6	3.8	-99.51	255.0	112.2	284.4	277.3	7.15	39.776	
1,100.0	1,083.9	1,042.9	1,024.0	4.3	4.5	-99.19	267.3	141.2	305.5	297.0	8.58	35.618	
1,200.0	1,177.0	1,134.6	1,108.9	5.2	5.4	-98.90	280.8	173.1	329.0	318.9	10.19	32.302	
1,300.0	1,268.6	1,225.4	1,191.5	6.2	6.3	-98.64	295.4	207.8	354.9	342.9	11.98	29.624	
1,400.0	1,358.3	1,315.2	1,271.7	7.4	7.3	-98.39	311.1	245.1	383.0	369.0	13.95	27.443	
1,500.0	1,445.9	1,404.1	1,349.5	8.6	8.3	-98.14	327.9	284.8	413.2	397.1	16.11	25.644	
1,600.0	1,531.4	1,492.0	1,424.6	10.0	9.5	-97.87	345.6	326.7	445.6	427.2	18.46	24.135	
1,700.0	1,614.5	1,578.8	1,497.2	11.5	10.8	-97.58	364.2	370.7	480.1	459.1	21.00	22.862	
1,800.0	1,695.2	1,664.7	1,567.0	13.1	12.1	-97.27	383.6	416.7	516.5	492.8	23.71	21.782	
1,900.0	1,773.2	1,749.5	1,634.1	14.9	13.4	-96.92	403.7	464.4	554.8	528.2	26.60	20.858	
2,000.0	1,848.3	1,833.2	1,698.5	16.7	14.9	-96.54	424.6	513.8	594.9	565.2	29.65	20.061	
2,100.0	1,920.6	1,916.0	1,760.1	18.7	16.4	-96.13	446.0	564.7	636.7	603.8	32.87	19.368	
2,200.0	1,989.7	2,000.0	1,820.6	20.9	18.0	-95.70	468.7	618.4	680.1	643.8	36.29	18.742	
2,302.3	2,057.1	2,080.4	1,876.4	23.2	19.6	-95.18	491.2	671.7	726.1	686.3	39.88	18.207	
2,400.0	2,119.8	2,158.7	1,928.8	25.5	21.3	-95.78	513.8	725.3	771.4	727.8	43.53	17.719	SF

Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Bunker 8-2H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
Reference Design:	Plan #2 (12-06-18)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5010.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Bunker 8-2H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.30°



Company:	Magpie Operating, Inc.	**Local Co-ordinate Reference:**	Well Bunker 8-2H
Project:	SEC.29-T5N-R68W	**TVD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Reference Site:	Bunker 8 Well Pad Sec.29-T5N-R68W	**MD Reference:**	WELL @ 5010.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
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Well Error:	0.0 ft	**Output errors are at**	2.45 sigma
Reference Wellbore	Wellbore #1	**Database:**	US_EDM
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Reference Depths are relative to WELL @ 5010.0ft (Original Well Elev)
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Coordinates are relative to: Bunker 8-2H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.30°