



PERCUSSION
PETROLEUM
LLC

NM OIL CONSERVATION
ARTESIA DISTRICT

JUL 27 2018

RECEIVED

Percussion Petroleum, LLC

Eddy County, NM
Huber Fed
7H

30-015-44706

OH

Survey: Survey #1

Standard Survey Report

14 May, 2018

**Provide Signature Page for
Directional Survey**

WELLBENDERS
DIRECTIONAL SERVICES LLC





Azimuths to Grid North
True North: 0.07°
Magnetic North: 7.37°
Magnetic Field
Strength: 47977.4 nT
Dip Angle: 60.26°
Date: 5/11/2018
Model: IGRF2015



Company: Percussion Petroleum, LLC
Project: Eddy County, NM
Site: Huber Fed
Well: 7H
Wellbore: OH
Rig: Silver Oak 1
Design: Plan 98 / 8:33, May 14 2018

TOTAL CORRECTION
Magnetic North is 7.37° East of Grid North (Magnetic Convergence)

WELL DETAILS: 7H

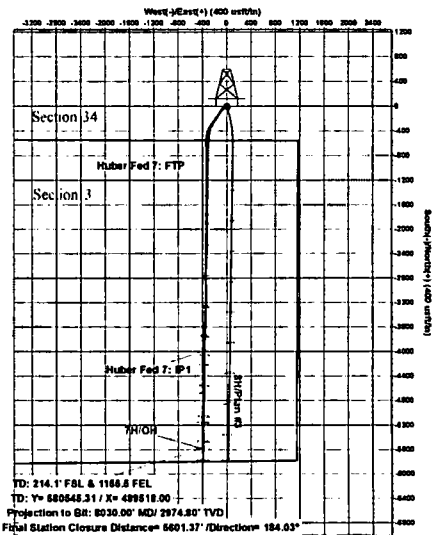
RKB=17" @ 3831.00usB (Silver Oak 1)				
3814.00				
+N-S	+E-W	Northing	Easting	Latitude
0.00	0.00	686132.80	489912.10	32.811588
-704.467889				

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Diag	Vsect
1	1234.00	11.20	215.80	1218.80	-88.80	-104.33	0.00	100.38
2	1294.00	11.20	215.80	1277.88	-108.48	-119.83	0.00	110.18
3	1338.83	12.06	213.38	1319.41	-116.83	-116.99	2.00	117.37
4	1530.88	12.06	213.38	1487.04	-323.78	-382.58	0.00	377.86
5	3329.08	80.00	180.84	2966.00	-888.80	-315.40	10.00	891.48
6	6433.99	80.00	180.84	2966.00	-3891.30	-388.10	0.00	3996.40
7	6434.17	88.81	180.73	2966.82	-4081.47	-388.97	2.00	4058.87
8	7814.02	88.81	180.73	2968.00	-6470.80	-385.02	0.00	6476.12
9	8224.23	88.81	180.73	2992.42	-6781.02	-389.96	0.00	6786.26

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting	Shape
Huber Fed 7: FTP	2966.00	-888.80	-315.40	686132.80	489912.10	Point
Huber Fed 7: IP1	2966.00	-391.30	-388.10	686141.80	489964.00	Point
Huber Fed 7: LTP	2966.00	-6470.80	-385.02	680681.80	489527.08	Point
Huber Fed 7: BHL	2992.42	-6781.00	-389.10	680351.80	489522.00	Point



TD: 214.1' FEL & 1184.8' FEL
TD: Y= 680648.31 / X= 489618.00
Projection to BH: 8030.00' MD/ 2974.80' TVD
Final Station Closure Distance= 6801.37' / Direction= 184.03°

PROJECT DETAILS: Eddy County, NM

Geodesy System: US State Plane 1983
Datum: North American Datum 1983
Elevation: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

Disclaimer:
This is a preliminary drawing.
It is not to be used for construction.
The user assumes all liability for any errors or omissions.
This drawing is the property of the company and is not to be used for any other purpose without the company's written consent.

Final Station Closure Distance= 6801.37' / Direction=

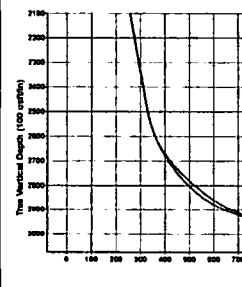
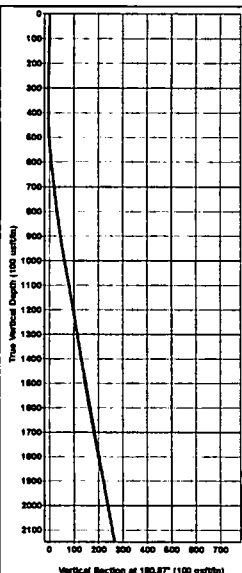
Projection to BH: 8030.00' MD/ 2974.80' TVD

TD: Y= 680648.31 / X= 489618.00

TD: 214.1' FEL &

Plan: Plan 98 (TUD) Silver Oak 1

Created By: Daniel Sam Date: 8:33, May 14 2018





Wellbenders Survey Report



Company: Percussion Petroleum, LLC
Project: Eddy County, NM
Site: Huber Fed
Well: 7H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 7H
TVD Reference: RKB=17' @ 3531.00usft (Silver Oak 1)
MD Reference: RKB=17' @ 3531.00usft (Silver Oak 1)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WBDS_SQL_2

Project	Eddy County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Huber Fed		
Site Position:		Northing:	586,082.90 usft
From:	Map	Easting:	499,887.10 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in
		Latitude:	32.611121
		Longitude:	-104.467950
		Grid Convergence:	-0.07 °

Well	7H		
Well Position	+N/-S	0.00 usft	Northing: 586,132.80 usft
	+E/-W	0.00 usft	Easting: 499,912.10 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32.6111259
		Longitude:	-104.467869
		Ground Level:	3,514.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	5/11/2018	7.30
		Dip Angle (°)	60.26
		Field Strength (nT)	47,977.44537819

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
		Direction (°)	180.87

Survey Program	Date 5/14/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
132.00	8,030.00	Survey #1 (OH)	MWD+IGRF
			Description
			OWSG MWD + IGRF or WMM

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
132.00	1.30	20.10	131.99	1.41	0.51	-1.41	0.98	0.98	0.00
224.00	1.50	37.00	223.96	3.35	1.60	-3.37	0.50	0.22	18.37
316.00	0.80	28.30	315.94	4.88	2.63	-4.91	0.78	-0.76	-9.46
409.00	0.70	249.00	408.94	5.24	2.40	-5.28	1.51	-0.11	-149.78
500.00	5.10	230.80	499.80	2.49	-1.25	-2.47	4.88	4.84	-20.00
591.00	10.50	233.50	589.93	-5.01	-11.06	5.18	5.95	5.93	2.97
683.00	11.50	233.90	680.23	-15.40	-25.21	15.78	1.09	1.09	0.43
775.00	11.50	236.20	770.39	-25.90	-40.24	26.51	0.50	0.00	2.50
866.00	12.30	231.40	859.43	-37.00	-55.35	37.83	1.40	0.88	-5.27



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MD Reference: RKB=17' @ 3531.00usft (Silver Oak 1)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WBDS_SQL_2

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
958.00	12.80	220.20	949.25	-50.90	-69.59	51.95	2.70	0.54	-12.17
1,050.00	13.40	217.40	1,038.86	-67.15	-82.64	68.40	0.95	0.65	-3.04
1,141.00	11.80	213.00	1,127.66	-83.33	-94.12	84.75	2.05	-1.76	-4.84
1,234.00	11.20	213.90	1,218.80	-98.80	-104.33	100.38	0.67	-0.65	0.97
1,361.00	11.40	216.60	1,343.33	-119.12	-118.70	120.91	0.45	0.16	2.13
1,455.00	11.10	219.30	1,435.53	-133.58	-129.97	135.54	0.64	-0.32	2.87
1,549.00	12.00	216.70	1,527.63	-148.41	-141.54	150.55	1.11	0.96	-2.77
1,643.00	12.20	215.90	1,619.54	-164.30	-153.20	166.60	0.28	0.21	-0.85
1,734.00	12.50	212.70	1,708.43	-180.37	-164.16	182.84	0.82	0.33	-3.52
1,828.00	12.70	212.10	1,800.17	-197.68	-175.15	200.32	0.25	0.21	-0.64
1,923.00	12.60	212.90	1,892.86	-215.23	-186.32	218.04	0.21	-0.11	0.84
2,017.00	12.20	213.50	1,984.67	-232.12	-197.37	235.09	0.45	-0.43	0.64
2,111.00	12.30	214.10	2,076.53	-248.70	-208.47	251.83	0.17	0.11	0.64
2,206.00	12.30	214.70	2,169.35	-265.39	-219.90	268.70	0.13	0.00	0.63
2,298.00	12.10	215.30	2,259.27	-281.32	-231.05	284.80	0.26	-0.22	0.65
2,393.00	12.30	216.40	2,352.13	-297.59	-242.81	301.24	0.32	0.21	1.16
2,486.00	12.20	217.60	2,443.01	-313.35	-254.69	317.18	0.29	-0.11	1.29
2,533.00	13.50	215.70	2,488.83	-321.74	-260.92	325.66	2.91	2.77	-4.04
2,580.00	17.80	213.00	2,534.08	-332.22	-268.04	336.26	9.28	9.15	-5.74
2,627.00	23.60	210.60	2,578.03	-346.36	-276.75	350.52	12.47	12.34	-5.11
2,674.00	29.80	207.40	2,620.00	-364.85	-286.92	369.16	13.54	13.19	-6.81
2,721.00	35.40	204.00	2,659.58	-387.67	-297.84	392.15	12.53	11.91	-7.23
2,767.00	39.50	198.60	2,696.10	-413.73	-307.93	418.35	11.41	8.91	-11.74
2,814.00	43.10	195.30	2,731.41	-443.39	-316.94	448.16	8.95	7.66	-7.02
2,860.00	47.30	192.30	2,763.82	-475.09	-324.69	479.96	10.23	9.13	-6.52
2,907.00	51.20	189.70	2,794.49	-510.03	-331.46	515.00	9.29	8.30	-5.53
2,954.00	53.40	185.50	2,823.24	-546.88	-336.36	551.92	8.48	4.68	-8.94
3,001.00	55.50	180.40	2,850.58	-585.04	-338.30	590.11	9.89	4.47	-10.85
3,048.00	57.80	175.60	2,876.43	-624.26	-336.91	629.30	9.83	4.89	-10.21
3,095.00	62.60	173.60	2,899.78	-664.84	-333.06	669.83	10.86	10.21	-4.26
3,141.00	67.30	174.50	2,919.25	-706.28	-328.75	711.19	10.37	10.22	1.96
3,188.00	71.60	179.00	2,935.75	-750.20	-326.28	755.06	12.81	9.15	9.57
3,236.00	77.20	181.10	2,948.66	-796.41	-326.33	801.27	12.40	11.67	4.37
3,283.00	84.00	181.60	2,956.33	-842.74	-327.42	847.61	14.51	14.47	1.06
3,331.00	90.10	179.70	2,958.80	-890.64	-327.96	895.52	13.31	12.71	-3.96
3,426.00	92.10	179.60	2,956.97	-985.62	-327.38	990.48	2.11	2.11	-0.11
3,521.00	90.20	179.50	2,955.07	-1,080.59	-326.64	1,085.43	2.00	-2.00	-0.11
3,615.00	91.10	179.80	2,954.00	-1,174.59	-326.06	1,179.40	1.01	0.96	0.32
3,709.00	89.70	180.40	2,953.34	-1,268.58	-326.23	1,273.39	1.62	-1.49	0.64
3,803.00	88.80	180.40	2,954.57	-1,362.57	-326.88	1,367.38	0.96	-0.96	0.00
3,896.00	89.70	180.20	2,955.79	-1,455.56	-327.37	1,460.36	0.99	0.97	-0.22
3,986.00	90.60	180.60	2,955.56	-1,545.55	-328.00	1,550.36	1.09	1.00	0.44
4,078.00	91.00	180.70	2,954.27	-1,637.54	-329.04	1,642.35	0.45	0.43	0.11
4,170.00	89.10	180.80	2,954.19	-1,729.53	-330.25	1,734.34	2.07	-2.07	0.11



Wellbenders Survey Report



Company: Percussion Petroleum, LLC
Project: Eddy County, NM
Site: Huber Fed
Well: 7H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 7H
TVD Reference: RKB=17' @ 3531.00usft (Silver Oak 1)
MD Reference: RKB=17' @ 3531.00usft (Silver Oak 1)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WBDS_SQL_2

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Bulld Rate (°/100ft)	Turn Rate (°/100ft)
4,263.00	89.90	180.60	2,955.00	-1,822.52	-331.38	1,827.34	0.89	0.86	-0.22
4,354.00	90.20	180.80	2,954.92	-1,913.51	-332.49	1,918.34	0.40	0.33	0.22
4,445.00	91.40	181.00	2,953.65	-2,004.49	-333.92	2,009.33	1.34	1.32	0.22
4,537.00	89.10	180.50	2,953.25	-2,096.47	-335.13	2,101.32	2.56	-2.50	-0.54
4,629.00	90.30	180.60	2,953.73	-2,188.47	-336.01	2,193.31	1.31	1.30	0.11
4,675.00	90.90	180.60	2,953.25	-2,234.46	-336.49	2,239.31	1.30	1.30	0.00
4,770.00	90.50	181.00	2,952.09	-2,329.44	-337.82	2,334.30	0.60	-0.42	0.42
4,865.00	88.70	181.90	2,952.75	-2,424.41	-340.22	2,429.29	2.12	-1.89	0.95
4,958.00	89.20	182.40	2,954.46	-2,517.32	-343.71	2,522.25	0.76	0.54	0.54
5,053.00	88.40	182.30	2,956.45	-2,612.22	-347.60	2,617.20	0.85	-0.84	-0.11
5,147.00	89.00	181.10	2,958.58	-2,706.15	-350.39	2,711.16	1.43	0.64	-1.28
5,242.00	87.80	179.70	2,961.23	-2,801.11	-351.06	2,806.12	1.94	-1.26	-1.47
5,335.00	87.90	178.20	2,964.72	-2,894.03	-349.35	2,899.00	1.62	0.11	-1.61
5,430.00	89.10	179.20	2,967.21	-2,988.97	-347.20	2,993.89	1.64	1.26	1.05
5,525.00	90.70	180.10	2,967.38	-3,083.96	-346.62	3,088.87	1.93	1.68	0.95
5,621.00	92.20	180.90	2,964.95	-3,179.92	-347.46	3,184.83	1.77	1.56	0.83
5,716.00	90.10	181.00	2,963.04	-3,274.89	-349.03	3,279.81	2.21	-2.21	0.11
5,810.00	91.00	181.30	2,962.14	-3,368.86	-350.92	3,373.80	1.01	0.96	0.32
5,904.00	91.80	181.80	2,959.84	-3,462.80	-353.46	3,467.77	1.00	0.85	0.53
5,998.00	90.60	182.50	2,957.87	-3,556.71	-356.98	3,561.72	1.48	-1.28	0.74
6,092.00	91.40	182.90	2,956.23	-3,650.59	-361.41	3,655.66	0.95	0.85	0.43
6,186.00	90.10	183.00	2,955.00	-3,744.46	-366.25	3,749.58	1.39	-1.38	0.11
6,280.00	90.50	183.00	2,954.51	-3,838.32	-371.17	3,843.52	0.43	0.43	0.00
6,374.00	90.70	182.00	2,953.52	-3,932.23	-375.27	3,937.47	1.08	0.21	-1.06
6,469.00	90.50	181.10	2,952.53	-4,027.19	-377.84	4,032.46	0.97	-0.21	-0.95
6,562.00	88.70	180.30	2,953.18	-4,120.17	-378.97	4,125.45	2.12	-1.94	-0.86
6,656.00	87.70	179.30	2,956.13	-4,214.12	-378.65	4,219.39	1.50	-1.06	-1.06
6,751.00	88.50	179.60	2,959.28	-4,309.07	-377.73	4,314.31	0.90	0.84	0.32
6,845.00	89.70	180.20	2,960.76	-4,403.05	-377.57	4,408.28	1.43	1.28	0.64
6,938.00	90.60	180.60	2,960.51	-4,496.05	-378.22	4,501.27	1.06	0.97	0.43
7,032.00	88.00	181.00	2,961.66	-4,590.03	-379.53	4,595.26	2.80	-2.77	0.43
7,127.00	87.60	181.10	2,965.31	-4,684.94	-381.27	4,690.19	0.43	-0.42	0.11
7,221.00	88.50	181.60	2,968.51	-4,778.86	-383.49	4,784.13	1.10	0.96	0.53
7,315.00	89.80	182.20	2,969.90	-4,872.79	-386.60	4,878.10	1.52	1.38	0.64
7,410.00	88.50	181.20	2,971.31	-4,967.74	-389.42	4,973.08	1.73	-1.37	-1.05
7,505.00	89.50	181.20	2,972.97	-5,062.70	-391.41	5,068.06	1.05	1.05	0.00
7,599.00	88.00	179.80	2,975.02	-5,156.67	-392.23	5,162.03	2.18	-1.60	-1.49
7,690.00	88.20	179.00	2,978.04	-5,247.61	-391.28	5,252.95	0.91	0.22	-0.88
7,781.00	89.70	180.10	2,979.71	-5,338.59	-390.56	5,343.91	2.04	1.65	1.21
7,874.00	90.90	180.70	2,979.22	-5,431.59	-391.21	5,436.90	1.44	1.29	0.65
7,960.00	91.90	181.20	2,977.12	-5,517.55	-392.64	5,522.87	1.30	1.16	0.58
8,030.00	91.90	181.20	2,974.80	-5,587.49	-394.10	5,592.83	0.00	0.00	0.00

TD: 214.1' FSL & 1155.5 FEL - TD: Y= 580545.31 / X= 499518.00 - Projection to Bit: 8030.00' MD/ 2974.80' TVD - Final Sta



Wellbenders Survey Report



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Project: Eddy County, NM
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Wellbore: OH
Design: OH

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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,030.00	2,974.80	-5,587.49	-394.10	TD: 214.1' FSL & 1155.5 FEL
8,030.00	2,974.80	-5,587.49	-394.10	TD: Y= 580545.31 / X= 499518.00
8,030.00	2,974.80	-5,587.49	-394.10	Projection to Bit: 8030.00' MD/ 2974.80' TVD
8,030.00	2,974.80	-5,587.49	-394.10	Final Station Closure Distance= 5601.37' /Direction= 184.03°

Checked By: _____ Approved By: _____ Date: _____