

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 07 2019

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**NGL WATER SOLUTIONS PERMIAN,
LLC**

EDDY COUNTY, NEW MEXICO (NAD 83)

SE SE SEC. 33 T23S R28E

STRIKER 3 SWD #1

01 January, 2018

30-015-44407

Survey: FINAL SURVEYS



Accepted for record
NMOCD

Survey Report



Company:	NGL WATER SOLUTIONS PERMIAN, LLC	Local Co-ordinate Reference:	Well STRIKER 3 SWD #1
Project:	EDDY COUNTY, NEW MEXICO (NAD 83)	TVD Reference:	KB (28') @ 3097.00usft (LATSHAW # 21)
Site:	SE SE SEC. 33 T23S R28E	MD Reference:	KB (28') @ 3097.00usft (LATSHAW # 21)
Well:	STRIKER 3 SWD #1	North Reference:	True
Wellbore:	JOB # 2017-480-21	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	EDM 5000.1 Single User Db

Project:	EDDY COUNTY, NEW MEXICO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site:	SE SE SEC. 33 T23S R28E		
Site Position:		Northing:	456,787.32 usft
From:	Lat/Long	Easting:	617,558.09 usft
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000 ft
		Latitude:	32.255543
		Longitude:	-104.086765
		Grid Convergence:	0.13 °

Well		STRIKER 3 SWD #1				
Well Position	+N/-S	0.00 usft	Northing:	456,787.32 usft	Latitude:	32.255543
	+E/-W	0.00 usft	Easting:	617,558.09 usft	Longitude:	-104.086765
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,069.00 usft

Wellbore		JOB # 2017-480-21			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	01/11/2017	7.15	60.00	47,866

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

Survey Program	Date	01/01/2018		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
593.00	14,865.00	FINAL SURVEYS (JOB # 2017-480-21)	MWD	MWD - Standard

Survey										
Measured	Inclination	Azimuth	Vertical	Subsea	+N-S	+E-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)	(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.00	0.00	0.00	0.00	3,097.00	0.00	0.00	0.00	0.00	0.00	0.00
593.00	1.00	188.50	592.97	2,504.03	-5.12	-0.76	-5.12	0.17	0.17	0.00
684.00	0.90	214.60	683.96	2,413.04	-6.49	-1.29	-6.49	0.48	-0.11	28.68
774.00	1.00	195.90	773.95	2,323.05	-7.83	-1.90	-7.83	0.36	0.11	-20.78
865.00	1.10	202.50	864.93	2,232.07	-9.40	-2.46	-9.40	0.17	0.11	7.25
1,050.00	1.20	190.60	1,049.89	2,047.11	-12.94	-3.49	-12.94	0.14	0.05	-6.43
1,144.00	1.00	214.10	1,143.88	1,953.12	-14.59	-4.13	-14.59	0.52	-0.21	25.00
1,238.00	1.00	168.30	1,237.86	1,859.14	-16.07	-4.43	-16.07	0.83	0.00	-48.72
1,327.00	1.00	165.60	1,326.85	1,770.15	-17.59	-4.08	-17.59	0.05	0.00	-3.03
1,421.00	0.80	153.30	1,420.84	1,676.16	-18.97	-3.58	-18.97	0.29	-0.21	-13.09
1,520.00	0.50	175.00	1,519.83	1,577.17	-20.01	-3.23	-20.01	0.39	-0.30	21.92
1,614.00	0.30	269.00	1,613.83	1,483.17	-20.43	-3.44	-20.43	0.64	-0.21	100.00
1,708.00	0.40	266.50	1,707.83	1,389.17	-20.45	-4.01	-20.45	0.11	0.11	-2.66

Survey Report



Company:	NGL WATER SOLUTIONS PERMIAN, LLC	Local Co-ordinate Reference:	Well STRIKER 3 SWD #1
Project:	EDDY COUNTY, NEW MEXICO (NAD 83)	TVD Reference:	KB (28') @ 3097.00usft (LATSHAW # 21)
Site:	SE SE SEC. 33 T23S R28E	MD Reference:	KB (28') @ 3097.00usft (LATSHAW # 21)
Well:	STRIKER 3 SWD #1	North Reference:	True
Wellbore:	JOB # 2017-480-21	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,803.00	0.40	125.30	1,802.83	1,294.17	-20.66	-4.07	-20.66	0.79	0.00	-148.63
1,897.00	1.00	122.20	1,896.82	1,200.18	-21.29	-3.11	-21.29	0.64	0.64	-3.30
1,992.00	1.20	96.40	1,991.80	1,105.20	-21.84	-1.42	-21.84	0.56	0.21	-27.16
2,087.00	1.70	100.30	2,086.77	1,010.23	-22.21	0.95	-22.21	0.54	0.53	4.11
2,181.00	1.70	100.30	2,180.73	916.27	-22.70	3.70	-22.70	0.00	0.00	0.00
2,275.00	3.40	101.70	2,274.63	822.37	-23.52	7.80	-23.52	1.81	1.81	1.49
2,370.00	4.10	92.80	2,369.43	727.57	-24.26	13.95	-24.26	0.96	0.74	-9.37
2,464.00	3.30	90.40	2,463.24	633.76	-24.44	20.01	-24.44	0.87	-0.85	-2.55
2,558.00	2.60	98.10	2,557.11	539.89	-24.76	24.83	-24.76	0.85	-0.74	8.19
2,617.00	2.50	102.00	2,616.05	480.95	-25.21	27.41	-25.21	0.34	-0.17	6.61
2,742.00	2.10	99.20	2,740.95	356.05	-26.15	32.34	-26.15	0.33	-0.32	-2.24
2,835.00	0.80	100.60	2,833.92	263.08	-26.54	34.66	-26.54	1.40	-1.40	1.51
2,929.00	0.40	320.80	2,927.92	169.08	-26.41	35.10	-26.41	1.21	-0.43	-148.72
3,024.00	1.00	325.40	3,022.91	74.09	-25.47	34.42	-25.47	0.63	0.63	4.84
3,118.00	0.90	342.10	3,116.90	-19.90	-24.09	33.72	-24.09	0.31	-0.11	17.77
3,212.00	1.60	318.00	3,210.87	-113.87	-22.41	32.62	-22.41	0.92	0.74	-25.64
3,307.00	1.80	324.20	3,305.83	-208.83	-20.22	30.86	-20.22	0.29	0.21	6.53
3,401.00	1.60	320.60	3,399.79	-302.79	-18.00	29.16	-18.00	0.24	-0.21	-3.83
3,495.00	1.50	320.60	3,493.76	-396.76	-16.04	27.55	-16.04	0.11	-0.11	0.00
3,589.00	1.40	320.90	3,587.73	-490.73	-14.20	26.04	-14.20	0.11	-0.11	0.32
3,683.00	1.00	319.00	3,681.71	-584.71	-12.69	24.78	-12.69	0.43	-0.43	-2.02
3,778.00	1.20	324.30	3,776.69	-679.69	-11.25	23.66	-11.25	0.24	0.21	5.58
3,873.00	1.50	311.00	3,871.66	-774.66	-9.63	22.14	-9.63	0.45	0.32	-14.00
3,968.00	1.50	298.20	3,966.63	-869.63	-8.23	20.10	-8.23	0.35	0.00	-13.47
4,062.00	1.40	294.70	4,060.60	-963.60	-7.17	17.98	-7.17	0.14	-0.11	-3.72
4,157.00	1.20	303.30	4,155.57	-1,058.57	-6.13	16.09	-6.13	0.29	-0.21	9.05
4,251.00	1.00	286.80	4,249.56	-1,152.56	-5.36	14.48	-5.36	0.40	-0.21	-17.55
4,345.00	1.00	293.70	4,343.54	-1,246.54	-4.79	12.95	-4.79	0.13	0.00	7.34
4,440.00	1.10	271.30	4,438.53	-1,341.53	-4.44	11.27	-4.44	0.44	0.11	-23.58
4,534.00	1.00	285.90	4,532.51	-1,435.51	-4.19	9.58	-4.19	0.30	-0.11	15.53
4,629.00	1.20	274.70	4,627.49	-1,530.49	-3.88	7.80	-3.88	0.31	0.21	-11.79
4,724.00	1.00	273.90	4,722.48	-1,625.48	-3.74	5.98	-3.74	0.21	-0.21	-0.84
4,818.00	0.90	257.70	4,816.46	-1,719.46	-3.85	4.44	-3.85	0.30	-0.11	-17.23
4,912.00	0.80	256.60	4,910.45	-1,813.45	-4.16	3.08	-4.16	0.11	-0.11	-1.17
5,008.00	0.70	249.70	5,006.45	-1,909.45	-4.51	1.88	-4.51	0.14	-0.10	-7.19
5,103.00	0.80	272.80	5,101.44	-2,004.44	-4.68	0.67	-4.68	0.33	0.11	24.32
5,198.00	0.90	267.00	5,196.43	-2,099.43	-4.69	-0.74	-4.69	0.14	0.11	-6.11
5,292.00	0.70	250.50	5,290.42	-2,193.42	-4.92	-2.02	-4.92	0.32	-0.21	-17.55
5,386.00	0.70	247.14	5,384.41	-2,287.41	-5.33	-3.09	-5.33	0.04	0.00	-3.57
5,481.00	0.80	259.90	5,479.40	-2,382.40	-5.68	-4.28	-5.68	0.20	0.11	13.43
5,575.00	0.70	250.40	5,573.40	-2,476.40	-5.98	-5.46	-5.98	0.17	-0.11	-10.11
5,670.00	0.90	223.20	5,668.39	-2,571.39	-6.72	-6.52	-6.72	0.45	0.21	-28.63
5,764.00	0.50	280.10	5,762.38	-2,665.38	-7.19	-7.43	-7.19	0.80	-0.43	60.53
5,860.00	0.60	264.90	5,858.38	-2,761.38	-7.16	-8.34	-7.16	0.18	0.10	-15.83
5,954.00	0.60	334.80	5,952.37	-2,855.37	-6.76	-9.04	-6.76	0.73	0.00	74.36
6,048.00	0.60	11.40	6,046.37	-2,949.37	-5.83	-9.15	-5.83	0.40	0.00	38.94
6,143.00	0.50	10.80	6,141.36	-3,044.36	-4.94	-8.98	-4.94	0.11	-0.11	-0.63
6,237.00	0.40	337.30	6,235.36	-3,138.36	-4.23	-9.03	-4.23	0.29	-0.11	-35.64
6,330.00	0.70	344.50	6,328.36	-3,231.36	-3.38	-9.30	-3.38	0.33	0.32	7.74
6,425.00	0.90	347.50	6,423.35	-3,326.35	-2.10	-9.62	-2.10	0.22	0.21	3.16
6,519.00	1.20	345.10	6,517.33	-3,420.33	-0.42	-10.03	-0.42	0.32	0.32	-2.55
6,613.00	1.00	340.30	6,611.31	-3,514.31	1.30	-10.56	1.30	0.23	-0.21	-5.11
6,706.00	0.50	36.60	6,704.31	-3,607.31	2.39	-10.60	2.39	0.90	-0.54	60.54

Survey Report



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Wellbore:	JOB # 2017-480-21	Survey Calculation Method:	Minimum Curvature
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Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,801.00	0.90	93.90	6,799.30	-3,702.30	2.67	-9.60	2.67	0.80	0.42	60.32
6,896.00	1.50	113.80	6,894.28	-3,797.28	2.12	-7.72	2.12	0.76	0.63	20.95
6,990.00	0.60	98.60	6,988.26	-3,891.26	1.55	-6.11	1.55	0.99	-0.96	-16.17
7,084.00	0.40	67.90	7,082.26	-3,985.26	1.60	-5.32	1.60	0.35	-0.21	-32.66
7,179.00	0.40	78.70	7,177.26	-4,080.26	1.79	-4.69	1.79	0.08	0.00	11.37
7,273.00	0.30	107.30	7,271.25	-4,174.25	1.78	-4.13	1.78	0.21	-0.11	30.43
7,367.00	0.50	75.30	7,365.25	-4,268.25	1.81	-3.50	1.81	0.31	0.21	-34.04
7,461.00	0.60	85.10	7,459.25	-4,362.25	1.96	-2.61	1.96	0.15	0.11	10.43
7,556.00	0.40	102.90	7,554.24	-4,457.24	1.92	-1.79	1.92	0.26	-0.21	18.74
7,649.00	0.50	169.30	7,647.24	-4,550.24	1.45	-1.40	1.45	0.54	0.11	71.40
7,744.00	1.20	181.50	7,742.23	-4,645.23	0.05	-1.35	0.05	0.76	0.74	12.84
7,837.00	1.20	188.00	7,835.21	-4,738.21	-1.89	-1.51	-1.89	0.15	0.00	6.99
7,932.00	1.60	203.50	7,930.18	-4,833.18	-4.09	-2.18	-4.09	0.58	0.42	16.32
8,027.00	2.10	209.50	8,025.13	-4,928.13	-6.82	-3.56	-6.82	0.56	0.53	6.32
8,121.00	1.50	192.90	8,119.09	-5,022.09	-9.52	-4.69	-9.52	0.84	-0.64	-17.66
8,215.00	0.90	171.70	8,213.07	-5,116.07	-11.45	-4.85	-11.45	0.78	-0.64	-22.55
8,309.00	0.70	165.10	8,307.06	-5,210.06	-12.73	-4.60	-12.73	0.23	-0.21	-7.02
8,403.00	0.80	180.40	8,401.05	-5,304.05	-13.94	-4.46	-13.94	0.24	0.11	16.28
8,498.00	0.70	158.00	8,496.04	-5,399.04	-15.14	-4.24	-15.14	0.32	-0.11	-23.58
8,591.00	0.80	113.20	8,589.03	-5,492.03	-15.93	-3.44	-15.93	0.62	0.11	-48.17
8,685.00	0.80	101.60	8,683.02	-5,586.02	-16.32	-2.19	-16.32	0.17	0.00	-12.34
8,780.00	1.30	116.70	8,778.01	-5,681.01	-16.93	-0.58	-16.93	0.60	0.53	15.89
8,874.00	1.20	117.80	8,871.99	-5,774.99	-17.87	1.25	-17.87	0.11	-0.11	1.17
8,969.00	1.00	140.30	8,966.97	-5,869.97	-18.97	2.66	-18.97	0.50	-0.21	23.68
9,063.00	1.10	158.30	9,060.95	-5,963.95	-20.44	3.51	-20.44	0.36	0.11	19.15
9,157.00	1.50	189.10	9,154.93	-6,057.93	-22.50	3.65	-22.50	0.84	0.43	32.77
9,251.00	1.60	188.30	9,248.90	-6,151.90	-25.01	3.27	-25.01	0.11	0.11	-0.85
9,345.00	1.70	187.00	9,342.86	-6,245.86	-27.69	2.91	-27.69	0.11	0.11	-1.38
9,439.00	1.70	199.40	9,436.82	-6,339.82	-30.39	2.28	-30.39	0.39	0.00	13.19
9,523.00	1.60	201.20	9,520.78	-6,423.78	-32.66	1.44	-32.66	0.13	-0.12	2.14
9,627.00	1.90	201.30	9,624.73	-6,527.73	-35.62	0.29	-35.62	0.29	0.29	0.10
9,721.00	1.50	299.50	9,718.71	-6,621.71	-36.47	-1.35	-36.47	2.75	-0.43	104.47
9,816.00	2.00	306.80	9,813.66	-6,716.66	-34.86	-3.76	-34.86	0.58	0.53	7.68
9,909.00	1.70	299.30	9,906.61	-6,809.61	-33.21	-6.26	-33.21	0.41	-0.32	-8.06
10,003.00	1.50	297.00	10,000.58	-6,903.58	-31.97	-8.57	-31.97	0.22	-0.21	-2.45
10,097.00	1.60	289.80	10,094.54	-6,997.54	-30.97	-10.91	-30.97	0.23	0.11	-7.66
10,191.00	1.60	284.40	10,188.51	-7,091.51	-30.20	-13.41	-30.20	0.16	0.00	-5.74
10,286.00	1.70	277.30	10,283.47	-7,186.47	-29.69	-16.09	-29.69	0.24	0.11	-7.47
10,380.00	1.80	277.20	10,377.42	-7,280.42	-29.33	-18.94	-29.33	0.11	0.11	-0.11
10,474.00	2.40	326.60	10,471.37	-7,374.37	-27.50	-21.49	-27.50	1.95	0.64	52.55
10,568.00	2.70	340.80	10,565.27	-7,468.27	-23.77	-23.30	-23.77	0.74	0.32	15.11
10,662.00	1.50	1.10	10,659.21	-7,562.21	-20.45	-24.01	-20.45	1.48	-1.28	21.60
10,757.00	1.10	8.90	10,754.19	-7,657.19	-18.30	-23.84	-18.30	0.46	-0.42	8.21
10,851.00	1.10	3.50	10,848.17	-7,751.17	-16.51	-23.65	-16.51	0.11	0.00	-5.74
10,944.00	0.90	352.50	10,941.15	-7,844.15	-14.89	-23.69	-14.89	0.30	-0.22	-11.83
11,039.00	1.00	26.80	11,036.14	-7,939.14	-13.41	-23.41	-13.41	0.60	0.11	36.11
11,134.00	0.90	30.80	11,131.13	-8,034.13	-12.03	-22.65	-12.03	0.13	-0.11	4.21
11,228.00	0.80	26.50	11,225.12	-8,128.12	-10.81	-21.98	-10.81	0.13	-0.11	-4.57
11,322.00	0.70	31.80	11,319.11	-8,222.11	-9.74	-21.39	-9.74	0.13	-0.11	5.64
11,416.00	0.40	31.40	11,413.11	-8,316.11	-8.97	-20.91	-8.97	0.32	-0.32	-0.43
11,511.00	0.30	44.60	11,508.10	-8,411.10	-8.51	-20.57	-8.51	0.13	-0.11	13.89
11,605.00	0.40	51.20	11,602.10	-8,505.10	-8.13	-20.14	-8.13	0.11	0.11	7.02
11,699.00	0.50	53.30	11,696.10	-8,599.10	-7.68	-19.55	-7.68	0.11	0.11	2.23

Survey Report



Company:	NGL WATER SOLUTIONS PERMIAN, LLC	Local Co-ordinate Reference:	Well STRIKER 3 SWD #1
Project:	EDDY COUNTY, NEW MEXICO (NAD 83)	TVD Reference:	KB (28') @ 3097.00usft (LATSHAW # 21)
Site:	SE SE SEC. 33 T23S R28E	MD Reference:	KB (28') @ 3097.00usft (LATSHAW # 21)
Well:	STRIKER 3 SWD #1	North Reference:	True
Wellbore:	JOB # 2017-480-21	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,793.00	0.40	43.40	11,790.10	-8,693.10	-7.19	-19.00	-7.19	0.13	-0.11	-10.53
11,888.00	0.30	45.70	11,885.09	-8,788.09	-6.78	-18.59	-6.78	0.11	-0.11	2.42
11,982.00	0.30	44.90	11,979.09	-8,882.09	-6.43	-18.24	-6.43	0.00	0.00	-0.85
12,075.00	0.30	62.30	12,072.09	-8,975.09	-6.15	-17.86	-6.15	0.10	0.00	18.71
12,171.00	0.30	76.80	12,168.09	-9,071.09	-5.97	-17.39	-5.97	0.08	0.00	15.10
12,262.00	0.30	66.60	12,259.09	-9,162.09	-5.82	-16.94	-5.82	0.06	0.00	-11.21
12,357.00	0.30	41.40	12,354.09	-9,257.09	-5.54	-16.55	-5.54	0.14	0.00	-26.53
12,451.00	0.30	16.00	12,448.09	-9,351.09	-5.12	-16.32	-5.12	0.14	0.00	-27.02
12,545.00	0.40	319.60	12,542.09	-9,445.09	-4.63	-16.46	-4.63	0.36	0.11	-60.00
12,639.00	0.40	302.50	12,636.08	-9,539.08	-4.20	-16.95	-4.20	0.13	0.00	-18.19
12,734.00	0.60	304.00	12,731.08	-9,634.08	-3.75	-17.64	-3.75	0.21	0.21	1.58
12,828.00	0.50	271.20	12,825.08	-9,728.08	-3.46	-18.46	-3.46	0.35	-0.11	-34.89
12,922.00	0.50	260.20	12,919.07	-9,822.07	-3.53	-19.27	-3.53	0.10	0.00	-11.70
13,017.00	0.50	264.20	13,014.07	-9,917.07	-3.64	-20.10	-3.64	0.04	0.00	4.21
13,111.00	0.60	263.00	13,108.06	-10,011.06	-3.74	-20.99	-3.74	0.11	0.11	-1.28
13,206.00	0.60	258.30	13,203.06	-10,106.06	-3.90	-21.97	-3.90	0.05	0.00	-4.95
13,301.00	0.60	254.30	13,298.05	-10,201.05	-4.14	-22.94	-4.14	0.04	0.00	-4.21
13,395.00	0.70	245.80	13,392.05	-10,295.05	-4.51	-23.94	-4.51	0.15	0.11	-9.04
13,489.00	0.30	252.10	13,486.04	-10,389.04	-4.82	-24.69	-4.82	0.43	-0.43	6.70
13,582.00	0.30	257.70	13,579.04	-10,482.04	-4.94	-25.16	-4.94	0.03	0.00	6.02
13,676.00	0.60	251.80	13,673.04	-10,576.04	-5.15	-25.87	-5.15	0.32	0.32	-6.28
13,770.00	0.80	259.00	13,767.03	-10,670.03	-5.43	-26.98	-5.43	0.23	0.21	7.66
13,864.00	1.20	257.40	13,861.02	-10,764.02	-5.77	-28.59	-5.77	0.43	0.43	-1.70
13,925.00	1.60	264.40	13,922.00	-10,825.00	-5.99	-30.06	-5.99	0.71	0.66	11.48
14,018.00	1.90	265.50	14,014.96	-10,917.96	-6.24	-32.89	-6.24	0.32	0.32	1.18
14,112.00	2.00	296.50	14,108.90	-11,011.90	-5.63	-35.91	-5.63	1.11	0.11	32.98
14,206.00	2.10	285.90	14,202.84	-11,105.84	-4.42	-39.03	-4.42	0.42	0.11	-11.28
14,302.00	2.80	282.30	14,298.76	-11,201.76	-3.44	-43.02	-3.44	0.75	0.73	-3.75
14,397.00	0.80	95.70	14,393.73	-11,296.73	-3.01	-44.62	-3.01	3.79	-2.11	182.53
14,491.00	0.50	42.20	14,487.72	-11,390.72	-2.78	-43.70	-2.78	0.68	-0.32	-56.91
14,585.00	2.60	81.90	14,581.68	-11,484.68	-2.17	-41.31	-2.17	2.38	2.23	42.23
14,678.00	1.80	92.10	14,674.61	-11,577.61	-1.93	-37.76	-1.93	0.95	-0.86	10.97
LAST SURVEY JAN 1, 2018										
14,772.00	1.70	97.00	14,768.57	-11,671.57	-2.15	-34.90	-2.15	0.19	-0.11	5.21
PROJECTION TO TD										
14,865.00	1.70	97.00	14,861.53	-11,764.53	-2.49	-32.16	-2.49	0.00	0.00	0.00

Survey Report



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Project:	EDDY COUNTY, NEW MEXICO (NAD 83)	TVD Reference:	KB (28') @ 3097.00usft (LATSHAW # 21)
Site:	SE SE SEC. 33 T23S R28E	MD Reference:	KB (28') @ 3097.00usft (LATSHAW # 21)
Well:	STRIKER 3 SWD #1	North Reference:	True
Wellbore:	JOB # 2017-480-21	Survey Calculation Method:	Minimum Curvature
Design:	FINAL SURVEYS	Database:	EDM 5000.1 Single User Db

Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude
ABDN VERT WITT #001		0.00	0.00	6,300.20	88.00	337.00	456,876.09	617,894.86	32.255785 -104.085675
- survey misses target center by 358.15usft at 6301.65usft MD (6300.00 TVD, -3.69 N, -9.21 E)									
- Circle (radius 30.00)									
PROPOSED TD - STRIK		0.00	0.00	15,200.20	0.00	0.00	456,787.32	617,558.09	32.255543 -104.086765
- survey misses target center by 340.20usft at 14865.00usft MD (14861.53 TVD, -2.49 N, -32.16 E)									
- Circle (radius 40.00)									

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
14,772.00	14,768.57	-2.15	-34.90	LAST SURVEY JAN 1, 2018
14,865.00	14,861.53	-2.49	-32.16	PROJECTION TO TD

Checked By: _____ Approved By: _____ Date: _____



Project: EDDY COUNTY, NEW MEXICO (NAD 83)
Site: SE SE SEC. 33 T23S R28E
Well: STRIKER 3 SWD #1
Wellbore: JOB # 2017-480-21
Design: SURVEYS

PROJECT DETAILS: EDDY COUNTY, NEW MEXICO (NAD 83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
Padsite: SE SE SEC. 33 T23S R28E

WELL DETAILS: STRIKER 3 SWD #1

Ground Level: 3088.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	456787.32	617558.09	32.255543	-104.086765

DESIGN TARGET DETAILS

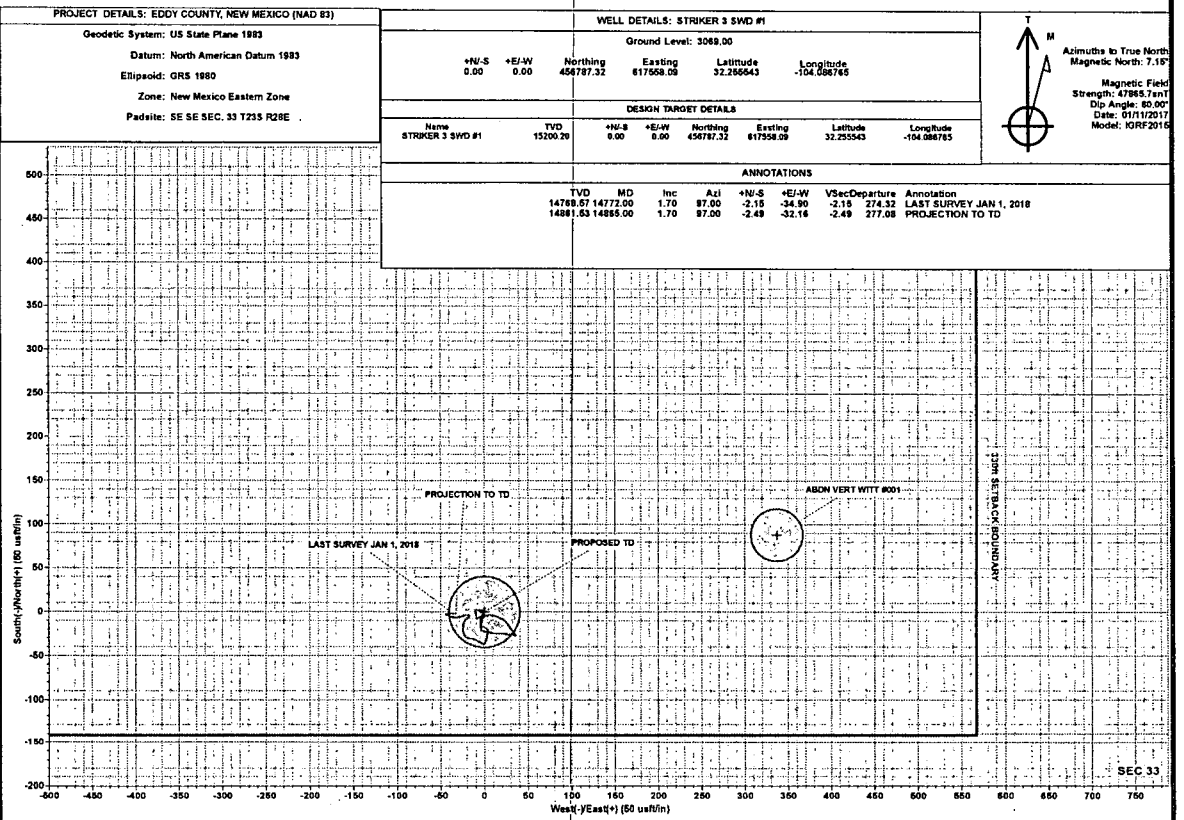
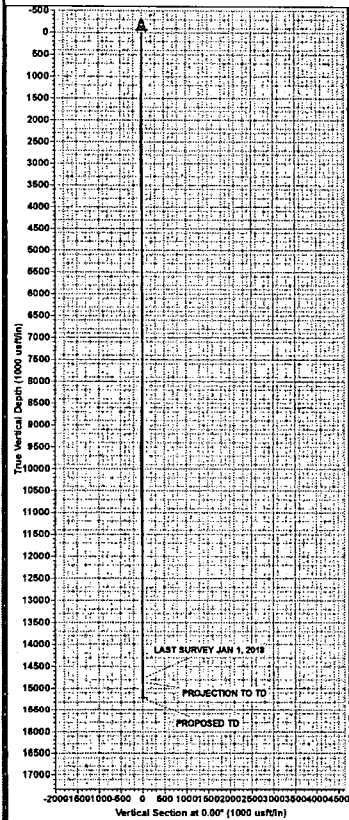
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
STRIKER 3 SWD #1	15200.20	0.00	0.00	456787.32	617558.09	32.255543	-104.086765

ANNOTATIONS

TVD	MD	Inc	Adj	+N/-S	+E/-W	VSec	Departure	Annotation
14788.57	14772.00	1.70	87.00	-2.15	-34.90	-2.15	274.32	LAST SURVEY JAN 1, 2018
14881.53	14885.00	1.70	87.00	-2.49	-32.16	-2.49	277.08	PROJECTION TO TD



Azimuths to True North
Magnetic North: 7.15°
Magnetic Field
Strength: 47865 Tens
Dip Angle: 60.00°
Date: 01/11/2017
Model: IGRF2016



RECEIVED



TUBULARS						WELL INFORMATION		DIRECTIONS TO SITE		PROPOSED INJECTION INTERVAL	
STRONG DETAILS (Size, WFF, Grade, Conn)	HOLE SIZE (in.)	O.D. (in.)	I.D. (in.)	HOLE DEPTH (ft)	SET DEPTH (ft)	RIG: Lathshaw #21 API# 30 015 44407 COUNTRY: Egypt S/W/R: Sec. 33 235 28E LATITUDE: LONGITUDE: SPUD DATE: 11/16/2017 RR DATE: 1/9/2018					
20" 94H J-55 BTC (12 js)	24	20.000	19.124	545'	542'						
19.375" 68H L-80 BTC (73 js)	17.5	13.375	12.415	2,676'	2,664'						
9.625" 47H L-80 BTC (138 js)	12.25	9.625	8.681	9,580'	9,544'						
7" 29H HCF-110 DTL-F1 (112 js)	8.5	7.000	6.13	13,591'	13,574'						
Open Hole Injection Interval	6.5	-	-	15,068'	-						
STRING COMPONENTS						HOLE INFORMATION / GEOTOP		CEMENT INFO		PROPOSED INJECTION STRING	
COMPONENT	O.D.	I.D.	Top	Bottom		28" Surface Hole T.D. = 545' Salado - 1000' Top of Salt - 1753' Bottom of Salt - 2403' Delaware - 2605' Bell Canyon - 2647' 17.5" 1st Int. Hole T.D. = 2676' Bone Spring Line 1 - 6368' Bone Spring Sand 1 - 7179' Bone Spring Line 2 - 7422' Bone Spring Sand 2 - 7940' Bone Spring Line 3 - 8244' Wolfcamp - 9458' 12.25" 2nd Int. Hole T.D. = 9580' Pennsylvanian - 11017' Alaska - 11707' Morrow - 11957' Barrett - 13325' Miss Limestone - 13509' Woodford - 13771' Devonian - 13958' 8.5" 3rd Int. Hole T.D. = 13951' Silurian Onondaga - 14,815' Onondaga - 14,815' Morrow - 14,767' 6.5" Injection Hole T.D. = 15068'		Pumped 193 bbls (809 sa) of 14.8 ppg, 1.34 ft3/sk, Class "C" cement. Circulated 58 bbls of cement to surface. (11/18/17) Pumped 379 bbls (1237 sa) of 13.7 ppg, 1.72 ft3/sk, Class "C" lead cement followed by 363 bbls (1521 sa) of 14.8 ppg, 1.34 ft3/sk Class "C" cement. 273 bbls of cement to surface. (11/24/17) Stage 1: 173 bbls (558 sa) of 13.5 ppg Class "H" lead cement, 1.74 ft3/sk followed by 108 bbls (497 sa) of 14.4 ppg Class "H" cement. 1.72 ft3/sk. 50 bbls of cement circulated to surface after DVT opened. Stage 2: 151 bbls (487 sa) of 13.5 ppg Class "C" lead cement, 1.74 ft3/sk followed by 209 bbls (931 sa) of 14.2 ppg Class "C" cement. 1.26 ft3/sk. 60 bbls of cement circulated to surface. (12/9/17)		DDR Does not have count of injection string joints. A total of 9279' of 5-1/2" 17H P110 LTC was run with a X/O DDR Does not have count of injection string joints. A total of 4649' of 4-1/2" 11.6H P110 LTC was run with a X/O 13929' Setting depth of Permanent Packer and Seal Assembly for Injection String.	
28" Surface Casing Shoe	20.000	19.124	-	542'							
13.375" 1st Intermediate Casing Shoe	13.375	12.415	-	2,664'							
9.625" Stage Tool	9.625	-	-	5,485'							
7" Liner Hanger (Downhole Tools)	8.681	7.000	9,342'	9,351'							
9.625" 2nd Intermediate Casing Shoe	9.625	8.681	-	9,544'							
Permanent Packer with Seal Assembly	6.125	4.500	-	13,929'							
8" Liner Shoe	7.000	6.125	-	13,974'							