

Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-11 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)

Schlumberger

November 27, 2017

Oxy USA Inc.

30-015-44437

Re:

29, 24S, 29E, Eddy NM
N 32 18457 W -103.99958

CLIENT: Oxy USA Inc.
WELL: Cedar Canyon 27-28 Federal 43H
FIELD: Purple Sage Wellcamp

RIG: H&P 636
COUNTY: Eddy
API NO: 30-015-44437
JOB NO: 17MLD1298

Enclosed, please find the original copy of the survey performed on the referenced well by Drilling & Measurements, a division of Schlumberger Technology Corporation (P-5 No. 754900).
Other information required by your office is as follows.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Roscleigh Taylor FE	Cedar Canyon 27-28 Federal 43H Original Hole	877.00 Ft to 20228.00 Ft	October 20, 2017 to November 25, 2017	TelePacer SlimPulse

If any other information is required, please contact the undersigned at the above letterhead and phone number.
Sincerely,

Mike Stephens
Field Service Manager

Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)

Schlumberger

Well Reference:
29, 24S, 29E, Eddy NM
N 32.18457 W -103.99958

I, Roseleigh Taylor certify that: I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of October 20, 2017 through November 25, 2017, conduct or supervise the taking of the TelePacer & SkinPulse surveys from a depth of 877.00 feet to a depth of 20228.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of Oxy USA Inc. for the Cedar Canyon 27-28 Federal 43H Well (Original Hole) API No. 30-015-44437 in New Mexico; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation

By *Roseleigh Taylor*
Roseleigh Taylor
FLI

Subscribed and Sworn to before me this 18 day of December (month) 2017 (yr)

My Commission expires:

12-20-20

J. Allemand
Notary Public
Adams County Colorado
(County State)

JENNIFER ALLEMAND
Notary Public
State of Colorado
Notary ID # 20164047962
My Commission Expires 12-20-2020



OXY

Boreholes

Original Borehole

Well:

Oxy Cedar Canyon 27-28 Federal 43H

Field:

NM Eddy County (NAD 83)

Structure:

Oxy Cedar Canyon 27-28 Federal 434

Gravity & Magnetic Parameters	
Model:	NOGEM 8017
MagDec:	7.116°
Dip:	60.34°
FS:	4000.03mT
Date:	
Gravity FS:	

18-Oct-2017

FWD Alamy (B) Boud

PAGE 1 OF 6 *****

Surface Location	
Lat	N 32 11 4.40
Long	W 103 00 56.3

MATHEWS SHOW ME
Northrup
Easting

4370 ZK71
645811301

With Zoom, US Firms Can Better Fight Back

D.177B

A.000011

Info:

State:

Party:

Only Cedar Canyon
7-28 Federal Army
Only Cedar Canyon

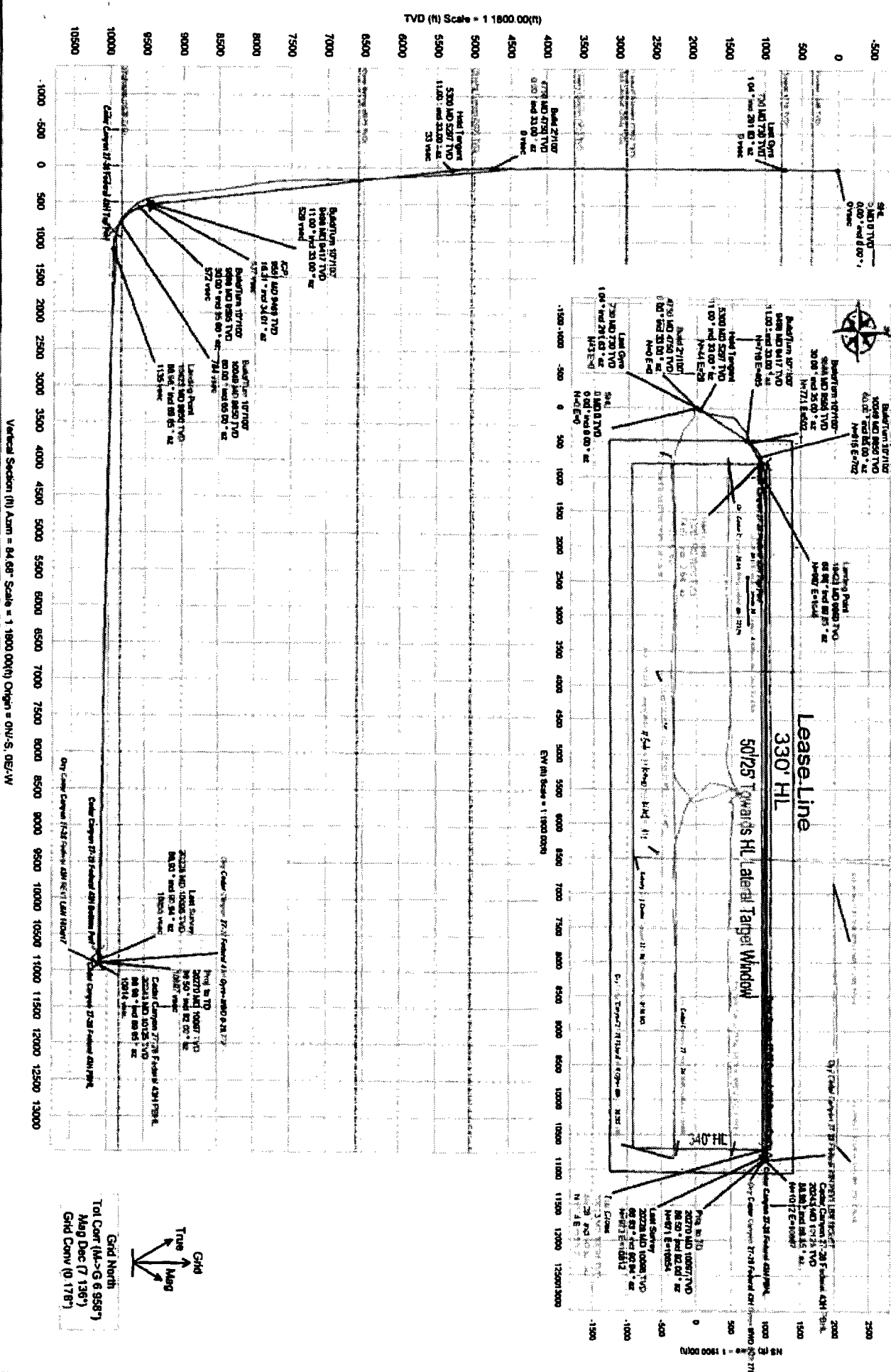
TV-D Ref:
20 Federal 4341 Ref

100-22572002.000
LHM 160-17

www.hollyj

00000000 0 00000000 0

Concentration of inhibitor (mole/l)	Rate of polymerization (mole/l·hr)
0	0.001
0.0001	0.0008
0.0002	0.0006
0.0004	0.0004
0.0006	0.0003
0.0008	0.00025
0.001	0.0002



Grid North
Tol Corr (M-G 6.958")
Mag Dec (7 136°)
Grid Conv (0.178")

Oxy Cedar Canyon 27-28 Federal 43H Gyro+MWD 0-20,270' Survey

Geodetic Report

(Def Survey)



Report Date: November 27, 2017 - 10:57 AM Client: OXY Field: NM Eddy County (NAD 83) Structure / Blot: Oxy Cedar Canyon 27-28 Federal 43H / Oxy Cedar Canyon 27-28 Federal 43H Well: Oxy Cedar Canyon 27-28 Federal 43H Borehole: Original Borehole UWB / API: Unknown / Unknown Survey Name: Oxy Cedar Canyon 27-28 Federal 43H Gyro+MWD 0-20,270' Survey Date: October 13, 2017 Tort / AHD / DDI / ERD Ratio: 252.908' / 11403.887' / 6.763' / 1.129 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet Location Lat / Long: N 32° 11' 4.45901" W 103° 58' 58.50120" Location Grid W/E V/X: N 431042 870 NUS, E 644588 380 NUS CRS Grid Convergence Angle: 0.1778° Grid Scale Factor: 0.9999213 Version / Patch: 2.10.565.0	Survey / DLS Computation: Minimum Curvature / Lubinski Vertical Section Azimuth: 84.878° (Grid North) Vertical Section Origin: 0.000 N, 0.000 E TVD Reference Datum: RK8=26.5' TVD Reference Elevation: 2963.500 N above MSL Seabed / Ground Elevation: 2937.000 N above MSL Magnetic Declination: 7.137° Total Gravity Field Strength: 986.4643mgals (0.80685 Based) Gravity Model: GARM Total Magnetic Field Strength: 48071.000 nT Magnetic Dip Angle: 58.980° Declination Date: October 13, 2017 Magnetic Declination Model: MOGM 2017 North Reference: Grid North Grid Convergence Used: 0.1778° Total Corr Mag North -> Grid North: 0.9597° Local Coord Referenced To: Well Head	
--	--	--

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	431042.07	644588.38	N 32° 11' 4.46" W 103° 58' 58.50"	
	87.15	0.12	358.55	87.15	0.01	0.09	0.00	0.14	431042.16	644588.38	N 32° 11' 4.46" W 103° 58' 58.50"	
	174.43	0.16	357.18	174.43	0.02	0.30	-0.01	0.05	431042.37	644588.37	N 32° 11' 4.46" W 103° 58' 58.50"	
	265.43	0.18	65.26	265.43	0.16	0.49	0.11	0.21	431042.56	644588.49	N 32° 11' 4.46" W 103° 58' 58.50"	
	360.13	0.37	42.85	360.13	0.53	0.78	0.46	0.23	431042.85	644588.84	N 32° 11' 4.47" W 103° 58' 58.50"	
	452.28	0.34	18.07	452.28	0.86	1.26	0.74	0.17	431043.33	644589.12	N 32° 11' 4.47" W 103° 58' 58.49"	
	547.15	0.38	346.95	547.14	0.93	1.83	0.78	0.21	431043.90	644589.14	N 32° 11' 4.48" W 103° 58' 58.49"	
	641.74	0.48	324.82	641.73	0.69	2.48	0.48	0.20	431044.53	644588.84	N 32° 11' 4.49" W 103° 58' 58.50"	
Last Gyro	730.00	1.04	291.83	729.98	-0.21	3.06	-0.50	0.78	431045.13	644587.89	N 32° 11' 4.49" W 103° 58' 58.51"	
	877.00	1.43	307.03	876.95	-2.75	4.66	-3.20	0.34	431046.73	644585.18	N 32° 11' 4.51" W 103° 58' 58.54"	
	968.00	1.41	309.49	967.92	-4.39	6.06	-4.97	0.07	431048.13	644583.41	N 32° 11' 4.52" W 103° 58' 58.56"	
	1059.00	0.13	284.40	1058.91	-5.28	6.79	-5.93	1.42	431048.86	644582.45	N 32° 11' 4.53" W 103° 58' 58.57"	
	1153.00	0.13	287.88	1152.91	-5.47	8.07	-6.13	0.03	431048.94	644582.25	N 32° 11' 4.53" W 103° 58' 58.57"	
	1343.00	0.08	348.75	1342.91	-5.67	7.10	-6.35	0.05	431049.17	644582.03	N 32° 11' 4.53" W 103° 58' 58.57"	
	1533.00	0.22	156.28	1532.91	-5.58	6.89	-6.25	0.18	431048.96	644582.13	N 32° 11' 4.53" W 103° 58' 58.57"	
	1628.00	0.17	313.98	1627.91	-5.62	8.82	-6.28	0.40	431048.89	644582.10	N 32° 11' 4.53" W 103° 58' 58.57"	
	1723.00	0.18	237.82	1722.91	-5.85	6.84	-6.51	0.23	431048.91	644581.87	N 32° 11' 4.53" W 103° 58' 58.58"	
	1818.00	0.13	202.39	1817.91	-6.03	6.86	-6.89	0.11	431048.73	644581.79	N 32° 11' 4.53" W 103° 58' 58.58"	
	1913.00	0.23	340.79	1912.91	-6.13	6.74	-6.78	0.36	431048.81	644581.60	N 32° 11' 4.53" W 103° 58' 58.58"	
	2008.00	0.13	350.00	2007.91	-6.18	7.02	-6.86	0.11	431048.09	644581.52	N 32° 11' 4.53" W 103° 58' 58.58"	
	2183.00	0.16	283.36	2182.91	-5.31	7.18	-7.81	0.17	431048.23	644581.37	N 32° 11' 4.53" W 103° 58' 58.58"	
	2198.00	0.18	142.14	2187.91	-6.36	7.07	-7.05	0.34	431048.14	644581.33	N 32° 11' 4.53" W 103° 58' 58.58"	
	2293.00	0.18	71.79	2292.91	-6.15	7.00	-6.83	0.21	431048.07	644581.55	N 32° 11' 4.53" W 103° 58' 58.58"	
	2388.00	0.13	165.07	2387.91	-6.00	8.83	-6.67	0.22	431048.00	644581.71	N 32° 11' 4.53" W 103° 58' 58.58"	
	2483.00	0.13	122.11	2482.91	-5.90	6.77	-6.56	0.10	431048.84	644581.82	N 32° 11' 4.53" W 103° 58' 58.58"	
	2578.00	0.13	308.85	2577.91	-5.89	8.78	-6.55	0.27	431048.85	644581.83	N 32° 11' 4.53" W 103° 58' 58.58"	
	2672.00	0.08	27.10	2671.91	-5.94	8.89	-6.81	0.14	431048.96	644581.77	N 32° 11' 4.53" W 103° 58' 58.58"	
	2767.00	0.17	307.87	2766.91	-6.02	7.03	-6.70	0.18	431048.09	644581.68	N 32° 11' 4.53" W 103° 58' 58.58"	
	2862.00	0.13	21.77	2861.91	-6.07	7.21	-6.77	0.19	431048.28	644581.81	N 32° 11' 4.53" W 103° 58' 58.58"	
	2957.00	0.08	57.45	2956.91	-5.96	7.35	-6.87	0.08	431048.42	644581.71	N 32° 11' 4.53" W 103° 58' 58.58"	
	3052.00	0.17	64.95	3051.91	-5.77	7.44	-6.49	0.10	431048.51	644581.89	N 32° 11' 4.53" W 103° 58' 58.58"	
	3147.00	0.18	216.87	3146.91	-5.74	7.38	-6.43	0.38	431048.45	644581.83	N 32° 11' 4.53" W 103° 58' 58.58"	
	3242.00	0.08	82.60	3241.91	-5.79	7.29	-6.50	0.25	431048.36	644581.86	N 32° 11' 4.53" W 103° 58' 58.58"	
	3337.00	0.17	116.20	3336.91	-5.83	7.25	-6.33	0.19	431048.32	644582.05	N 32° 11' 4.53" W 103° 58' 58.57"	
	3432.00	0.13	288.10	3431.91	-5.58	7.19	-6.28	0.18	431048.26	644582.10	N 32° 11' 4.53" W 103° 58' 58.57"	
	3527.00	0.08	302.58	3526.91	-5.86	7.32	-6.58	0.04	431048.39	644581.82	N 32° 11' 4.53" W 103° 58' 58.58"	
	3622.00	0.11	274.38	3621.91	-5.99	7.35	-6.70	0.07	431048.42	644581.66	N 32° 11' 4.53" W 103° 58' 58.58"	
	4001.00	0.13	341.91	4000.91	-6.22	7.87	-6.85	0.07	431048.64	644581.43	N 32° 11' 4.53" W 103° 58' 58.58"	
	4096.00	0.29	212.28	4095.91	-6.39	7.47	-7.11	0.41	431048.54	644581.27	N 32° 11' 4.53" W 103° 58' 58.58"	
	4191.00	0.93	87.78	4190.89	-5.80	7.36	-6.53	1.24	431048.83	644581.85	N 32° 11' 4.53" W 103° 58' 58.58"	
	4286.00	2.59	47.86	4285.85	-3.34	9.29	-4.22	1.84	431051.36	644584.18	N 32° 11' 4.59" W 103° 58' 58.55"	
	4381.00	4.18	45.84	4380.89	-1.05	13.12	-0.18	1.85	431055.19	644588.22	N 32° 11' 4.59" W 103° 58' 58.50"	
	4476.00	9.42	45.32	4474.38	7.14	19.81	5.43	1.35	431060.88	644593.81	N 32° 11' 4.64" W 103° 58' 58.44"	
	4569.00	7.90	38.81	4568.08	23.17	35.10	20.00	1.38	431077.17	644608.58	N 32° 11' 4.61" W 103° 58' 58.27"	
	4659.00	10.63	29.62	4658.58	42.30	60.52	36.85	1.83	431102.56	644625.23	N 32° 11' 5.06" W 103° 58' 58.07"	
	5045.00	12.38	25.39	5038.78	62.72	84.17	54.22	1.93	431128.23	644652.99	N 32° 11' 5.39" W 103° 58' 57.87"	
	5140.00	12.32	24.44	5128.66	72.93	112.60	62.78	0.26	431154.86	644651.14	N 32° 11' 5.57" W 103° 58' 57.77"	
	5235.00	12.47	21.92	5222.34	82.88	131.34	70.78	0.59	431173.40	644659.18	N 32° 11' 5.76" W 103° 58' 57.67"	
	5425.00	12.52	18.14	5407.85	99.98	170.18	84.17	0.86	431212.21	644672.54	N 32° 11' 6.14" W 103° 58' 57.52"	
	5614.00	13.24	8.47	5592.11	112.24	211.25	93.05	0.88	431253.30	644681.42	N 32° 11' 6.55" W 103° 58' 57.41"	
	5708.00	13.82	8.87	5684.47	117.04	233.29	95.81	0.88	431275.35	644684.19	N 32° 11' 6.78" W 103° 58' 57.34"	
	5899.00	13.83	8.25	5888.87	126.77	278.34	101.39	0.30	431320.39	644689.77	N 32° 11' 7.21" W 103° 58' 57.31"	
	5994.00	13.18	9.12	5961.34	132.13	306.27	104.74	0.72	431342.32	644693.11	N 32° 11' 7.43" W 103° 58' 57.27"	
	6184.00	12.58	10.65	6146.56	143.25	342.00	112.00	0.38	431384.04	644700.37	N 32° 11' 7.84" W 103° 58' 57.19"	
	6279.00	12.15	11.09	6238.38	148.80	381.97	115.83	0.48	431404.02	644704.29	N 32° 11' 8.04" W 103° 58' 57.14"	
	6374.00	11.74	8.73	6332.30	154.07	381.34	119.22	0.67	431423.38	644707.59	N 32° 11' 8.23" W 103° 58' 57.10"	
	6469.00	11.24	8.03	6425.40	158.71	400.04	122.14	0.53	431442.07	644710.51	N 32° 11' 8.41" W 103° 58' 57.07"	
	6564.00	10.39	9.03	6518.71	163.13	417.64	124.94	0.89	431459.88	644713.31	N 32° 11' 8.59" W 103° 58' 57.03"	
	6659.00	9.21	8.12	6412.32	167.02	433.63	127.36	1.25	431475.86	644715.73	N 32° 11' 8.75" W 103° 58' 57.00"	
	6754.00	7.95	2.48	6708.26	169.68	447.72	128.71	1.60	431489.75	644717.08	N 32° 11' 8.89" W 103° 58' 56.99"	
	6848.00	6.66	359.33	6798.49	171.00	459.66	126.93	1.44	431501.70	644717.30	N 32° 11' 9.00" W 103° 58' 56.96"	
	6944.00	5.10	386.24	6894.94	171.57	489.48	128.58	1.66	431511.52	644718.95	N 32° 11' 9.10" W 103° 58' 56.99"	
	7038.00	4.00	353.09	6988.89	171.59	478.81	127.92	1.20	431518.94	644718.29	N 32° 11' 9.17" W 103° 58' 57.00"	
	7133.00	3.62	351.84	7083.48	171.35	483.17	127.09	0.41	431525.20	644715.48	N 32° 11' 9.24" W 103° 58' 57.00"	
	7228.00	4.14	9.87	7178.28	172.10	489.52	127.25	1.39	431531.55	644715.82	N 32° 11' 9.30" W 103° 58' 57.00"	
	7323.00	5.00	19.53	7272.86	174.74	496.80	129.23	1.21	431538.83	644717.99	N 32° 11' 9.37" W 103° 58' 56.96"	
	7418.00	6.21	19.07	7367.51	178.80	505.56	132.29	1.27	431547.59	644720.68	N 32° 11' 9.46" W 103° 58' 56.94"	
	7513.00	8.74	16.57	7461.80	182.80	515.78	135.56	0.83	431557.78	644723.83	N 32° 11' 9.56" W 103° 58' 56.91"	
	7607.00	7.42	23.86	7555.18	187.82	526.56	139.59	1.20	431568.82	644727.95	N 32° 11' 9.67" W 103° 58' 56.86"	
	7702.00	7.72	33.52	7648.38	194.81	537.82	145.59	1.37	431579.55	644733.96	N 32° 11' 9.77" W 103° 58' 56.79"	
	7797.00	7.81	44.32	7743.48	203.79	547.52	153.68	1.56	431588.55	644742.05	N 32° 11' 9.87" W 103° 58' 56.69"	
	7892.00	9.00	51.14	7837.45	214.87	556.86	164.04	1.56	431598.89	644732.40	N 32° 11' 9.96" W 103° 58' 56.57"	
	7987.00	10.11	54.78	7931.13	228.39	566.33	178.83	1.33	431608.38	644735.00	N 32° 11' 10.06" W 103° 58' 56.43"	
	8082.00	12.07	54.36	8024.35	244.20							

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VREC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	6455.00	8.68	48.96	6587.27	332.14	644.66	273.53	0.87	431886.57	644861.89	N 32 11 10.83 W	103 59 55.30
	6456.00	8.59	48.18	6681.20	343.27	654.95	283.80	0.11	431896.57	644872.16	N 32 11 10.93 W	103 59 55.19
	6457.00	8.35	47.82	6775.16	354.32	664.11	294.00	0.33	431706.12	644882.36	N 32 11 11.02 W	103 59 55.08
	6458.00	7.72	49.90	6869.23	365.07	672.87	303.96	0.74	431714.88	644892.34	N 32 11 11.11 W	103 59 54.94
	6459.00	7.14	50.56	6963.43	376.20	680.73	313.42	0.82	431722.74	644901.78	N 32 11 11.19 W	103 59 54.83
	6460.00	7.35	52.99	7058.69	385.15	688.06	322.73	0.40	431730.07	644911.09	N 32 11 11.26 W	103 59 54.72
	6461.00	7.84	53.15	7149.86	395.73	695.52	332.67	0.52	431737.54	644921.02	N 32 11 11.33 W	103 59 54.61
	6462.00	8.40	50.79	7243.91	407.01	703.79	343.23	0.69	431745.81	644931.58	N 32 11 11.41 W	103 59 54.48
	6463.00	8.67	48.78	7330.27	413.95	708.26	348.69	0.70	431751.27	644938.04	N 32 11 11.47 W	103 59 54.41
	6464.00	18.28	67.88	7417.08	448.18	727.22	382.39	4.89	431789.24	644970.74	N 32 11 11.64 W	103 59 54.03
	6465.00	27.52	78.48	7503.11	462.77	737.41	416.18	12.26	431779.42	645004.53	N 32 11 11.74 W	103 59 53.63
	6466.00	35.34	72.17	7590.12	531.40	750.97	463.76	8.56	431792.88	645052.10	N 32 11 11.88 W	103 59 53.08
	6467.00	42.05	67.03	7677.48	588.02	771.81	518.70	7.81	431813.81	645107.04	N 32 11 12.08 W	103 59 52.44
	6468.00	49.73	60.89	7765.57	651.57	801.82	578.72	0.39	431843.83	645168.05	N 32 11 12.38 W	103 59 51.73
	6469.00	60.90	60.35	7853.98	721.98	838.82	648.89	11.89	431881.82	645235.22	N 32 11 12.75 W	103 59 50.94
	6470.00	71.00	64.28	7941.85	802.13	878.95	723.85	11.28	431921.95	645311.97	N 32 11 13.14 W	103 59 50.05
	6471.00	75.10	73.10	8029.10	888.48	912.50	807.33	9.87	431954.50	645399.95	N 32 11 13.48 W	103 59 48.07
	6472.00	90.44	85.47	8111.07	981.85	928.77	898.51	20.65	431971.78	645487.81	N 32 11 13.83 W	103 59 48.00
	6473.00	91.85	86.31	8193.18	1029.83	932.82	943.38	3.73	431874.92	645531.89	N 32 11 13.66 W	103 59 47.49
	6474.00	88.93	82.95	8275.44	1125.90	943.21	1052.87	4.05	431885.21	645614.17	N 32 11 13.76 W	103 59 46.22
	6475.00	88.90	81.44	8357.80	1230.84	958.10	1148.92	2.68	431896.10	645735.21	N 32 11 13.88 W	103 59 45.12
	6476.00	88.48	83.74	8440.13	1319.19	980.44	1234.01	1.24	432022.43	645822.29	N 32 11 14.12 W	103 59 42.94
	6477.00	88.58	85.05	8522.63	1514.01	989.70	1426.38	1.38	432031.89	646018.85	N 32 11 14.21 W	103 59 41.84
	6478.00	88.66	86.30	8605.27	1607.77	995.14	1522.04	3.45	432037.13	646110.30	N 32 11 14.26 W	103 59 40.75
	6479.00	88.90	88.67	8688.09	1702.34	998.82	1618.87	1.48	432038.81	646205.12	N 32 11 14.27 W	103 59 38.85
	6480.00	88.39	89.44	8771.48	1800.82	997.99	1718.70	0.38	432039.58	646303.94	N 32 11 14.28 W	103 59 38.50
	6481.00	88.39	89.44	8854.88	1895.30	998.51	1810.51	0.00	432040.50	646398.74	N 32 11 14.28 W	103 59 37.40
	6482.00	87.32	88.98	8938.29	2004.42	1001.18	2000.20	0.99	432043.19	646498.42	N 32 11 14.30 W	103 59 35.19
	6483.00	87.89	88.98	9021.70	2119.08	1002.72	2094.10	0.44	432044.71	646598.31	N 32 11 14.32 W	103 59 34.10
	6484.00	88.01	90.08	9105.11	2233.63	1003.37	2189.02	1.03	432045.38	646697.23	N 32 11 14.32 W	103 59 32.98
	6485.00	88.90	91.50	9188.52	2347.07	1002.08	2283.98	1.78	432044.97	646796.17	N 32 11 14.30 W	103 59 31.89
	6486.00	88.55	91.15	9271.93	2461.40	999.88	2378.93	0.52	432041.87	646895.12	N 32 11 14.28 W	103 59 30.78
	6487.00	88.45	91.54	9355.34	2575.73	997.85	2473.87	0.42	432038.84	646994.05	N 32 11 14.25 W	103 59 29.68
	6488.00	88.88	91.52	9438.75	2690.02	995.12	2568.81	0.43	432037.11	647093.00	N 32 11 14.23 W	103 59 28.57
	6489.00	87.52	90.83	9522.16	2744.38	993.34	2663.74	1.68	432035.33	647191.91	N 32 11 14.21 W	103 59 27.47
	6490.00	88.21	90.90	9605.57	2838.78	992.07	2758.67	0.78	432034.06	647290.83	N 32 11 14.18 W	103 59 26.37
	6491.00	88.14	90.26	9688.98	2933.23	991.11	2853.61	0.88	432033.10	647389.74	N 32 11 14.18 W	103 59 25.26
	6492.00	88.28	90.56	9772.39	3027.71	990.43	2948.57	0.36	432032.42	647488.65	N 32 11 14.17 W	103 59 24.16
	6493.00	88.87	90.56	9855.80	3122.16	988.57	3043.54	1.92	432029.14	647587.56	N 32 11 14.13 W	103 59 23.04
	6494.00	90.88	91.18	9939.21	3216.65	987.14	3138.49	1.38	432027.37	647686.47	N 32 11 14.10 W	103 59 21.94
	6495.00	90.38	89.81	10022.62	3311.14	985.38	3233.45	1.81	432027.11	647785.38	N 32 11 14.09 W	103 59 20.84
	6496.00	90.03	90.41	10106.03	3405.63	983.11	3328.42	1.81	432027.11	647884.29	N 32 11 14.09 W	103 59 19.74
	6497.00	89.31	90.40	10189.44	3500.14	984.44	3423.40	0.78	432026.43	647983.20	N 32 11 14.08 W	103 59 18.64
	6498.00	88.21	89.86	10272.85	3594.65	984.23	3518.37	1.29	432026.22	648082.11	N 32 11 14.06 W	103 59 17.54
	6499.00	87.00	89.06	10356.26	3689.16	988.02	3613.34	0.78	432026.01	648181.02	N 32 11 14.09 W	103 59 16.44
	6500.00	87.58	88.79	10439.67	3783.67	987.80	3708.31	0.68	432026.79	648280.93	N 32 11 14.11 W	103 59 15.34
	6501.00	87.48	87.75	10523.08	3878.18	990.83	3803.28	0.78	432026.58	648380.84	N 32 11 14.13 W	103 59 14.24
	6502.00	88.58	87.26	10606.49	3972.69	994.75	3898.25	1.23	432026.37	648480.75	N 32 11 14.17 W	103 59 13.14
	6503.00	88.66	87.02	10689.90	4067.20	998.67	3993.22	1.40	432026.16	648580.66	N 32 11 14.21 W	103 59 12.04
	6504.00	88.90	87.89	10773.31	4161.71	1003.73	4088.19	1.35	432025.95	648680.57	N 32 11 14.25 W	103 59 10.94
	6505.00	88.38	88.00	10856.72	4256.22	1008.31	4183.16	1.27	432025.74	648780.48	N 32 11 14.28 W	103 59 9.84
	6506.00	89.62	88.53	10940.13	4350.73	1007.52	4278.10	0.82	432025.53	648880.39	N 32 11 14.29 W	103 59 8.74
	6507.00	90.88	91.48	11023.54	4445.24	1005.84	4373.07	1.17	432025.32	648980.30	N 32 11 14.28 W	103 59 7.64
	6508.00	89.69	91.82	11106.95	4539.75	1003.11	4468.04	1.11	432025.11	649080.21	N 32 11 14.25 W	103 59 6.54
	6509.00	88.21	91.25	11190.36	4634.26	1000.58	4563.01	1.87	432024.90	649180.12	N 32 11 14.23 W	103 59 5.44
	6510.00	89.79	91.18	11273.77	4728.77	997.45	4657.98	1.08	432024.69	649280.03	N 32 11 14.21 W	103 59 4.34
	6511.00	89.11	90.87	11357.18	4823.28	994.64	4752.95	1.67	432024.48	649380.94	N 32 11 14.20 W	103 59 3.24
	6512.00	89.72	90.85	11440.59	4917.79	991.53	4847.92	0.65	432024.27	649480.85	N 32 11 14.17 W	103 59 2.14
	6513.00	89.79	91.54	11523.99	5012.30	988.54	4942.89	1.88	432024.06	649580.76	N 32 11 14.15 W	103 59 1.04
	6514.00	89.72	90.85	11607.40	5106.81	985.55	5037.86	0.65	432023.85	649680.67	N 32 11 14.14 W	103 59 99.27
	6515.00	89.11	90.87	11690.81	5201.32	982.56	5132.83	1.88	432023.64	649780.58	N 32 11 14.14 W	103 59 98.17
	6516.00	89.72	90.85	11774.22	5295.83	979.57	5227.80	0.65	432023.43	649880.49	N 32 11 14.14 W	103 59 97.07
	6517.00	89.79	91.54	11857.63	5390.34	976.58	5322.77	0.38	432023.22	649980.40	N 32 11 14.12 W	103 59 95.97
	6518.00	89.72	90.85	11941.04	5484.85	973.59	5417.74	1.15	432023.01	650080.31	N 32 11 14.10 W	103 59 94.87
	6519.00	89.52	90.73	12024.45	5579.36	969.60	5512.71	0.38	432022.80	650180.22	N 32 11 14.08 W	103 59 93.77
	6520.00	88.73	90.94	12107.86	5673.87	966.61	5607.68	1.93	432022.59	650280.13	N 32 11 14.06 W	103 59 92.67
	6521.00	89.17	90.86	12191.27	5768.38	963.62	5702.65	0.86	432022.38	650380.04	N 32 11 14.04 W	103 59 91.57
	6522.00	87.42	90.90	12274.68	5862.89	960.63	5797.62	0.48	432022.17	650480.95	N 32 11 14.00 W	103 59 90.47
	6523.00	87.59	90.01	12358.09	5957.40	957.64	5892.59	0.48	432021.96	650580.86	N 32 11 13.96 W	103 59 89.37
	6524.00	90.45	90.52	12441.50	6051.91	954.65	5987.56	0.39	432021.75	650680.77	N 32 11 13.96 W	103 59 88.27
	6525.00	89.83	91.08	12524.91	6146.42	951.66	6082.53	0.78	432021.54	650780.68	N 32 11 13.96 W	103 59 87.17
	6526.00	88.80	90.74	12608.32	6240.93	948.67	6177.50	2.27	432021.33	650880.59	N 32 11 13.94 W	103 59 86.07
	6527.00	89.83	90.25	12691.73	6335.44	945.68	6272.47	1.30	432021.12	650980.50	N 32 11 13.93 W	103 59 84.97
	6528.00	88.85	90.48	12775.14	6429.95	942.69	6367.44	0.46	432020.91	651080.41	N 32 11 13.92 W	103 59 83.87
	6529.00	91.20	90.80	12858.55	6524.46	939.70	6462.41	1.74	432020.70	651180.32	N 32 11 13.91 W	103 59 82.77
	6530.00	88.23	90.85	12941.96	6618.97	936.71	6557.38	0.33	432020.49	651280.23	N 32 11 13.90 W	103 59 81.67
	6531.00	88.48	90.80	13025.37								

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS ("/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
----------	------------	-------------	------------------	-------------	--------------	------------	------------	------------------	--------------------	-------------------	--------------------------	---------------------------

Survey Type: Dr Survey

Survey Error Model: ISCWSA Rev 0 --- 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/88.425	30.000	NAL_NSQ+MSHOT-Depth Only	Original Borehole / Oxy Cedar Canyon 27-28 Federal 43H Gyro+MWD 0-20,270'
	1	26.500	26.500	Act Sine	30.000	NAL_NSQ+MSHOT-Depth Only	Original Borehole / Oxy Cedar Canyon 27-28 Federal 43H Gyro+MWD 0-20,270'
	1	26.500	730.000	Act Sine	30.000	NAL_NSQ+MSHOT	Original Borehole / Oxy Cedar Canyon 27-28 Federal 43H
	1	730.000	20270.000	Act Sine	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Cedar Canyon 27-28 Federal 43H