

Oilfield Services, Central U.S. Land
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

February 19, 2019

RECEIVED

OXY USA INC
5 GREENWAY PLAZA, SUITE 110
HOUSTON, TX 77046

APR 03 2019

DISTRICT II-ARTESIA O.C.D.

Re:

33, 23S, 31E, EDDY NM
-32.26793 -103.78859

CLIENT: OXY USA INC
WELL: Sterling Silver MDPI 33-4 Fed Com 1H
FIELD: Ingle Wells Bone Spring

RIG: H&P 556
COUNTY: EDDY
API NO: 30-015-45335
JOB NO: 18MLD4315

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>
Banks Kintang FE	Sterling Silver MDPI 33-4 Fed Com 1H Original Hole	576.00 Ft to 20366.00 Ft	January 18, 2018 to February 11, 2018	TelePacer/SlimPulse Third Party Corrected

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

ANDREW SALOMON
Field Service Manager

Schlumberger-Private

Oilfield Services, Central U.S. Land
Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
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Well Reference:
33, 23S, 31E, EDDY NM
-32.26793 -103.78859

I, Banks Kintang certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of January 18, 2018 through February 11, 2018, conduct or supervise the taking of the Telepacer&SlimPulse & Third Party Corrected surveys from a depth of 576.00 feet to a depth of 20366.00 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 Sterling Silver MDP1 33-4 Fed Com 1H Well (Original Hole) API No. 30-015-45335 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 
Banks Kintang
FE

Subscribed and Sworn to before me this 19th day of February (month) 2019 (yr)

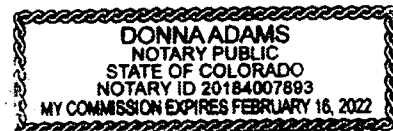
My Commission expires:

2-16-2022

D. Adams
Notary Public

Adams County Colorado
(County State)

(signature)





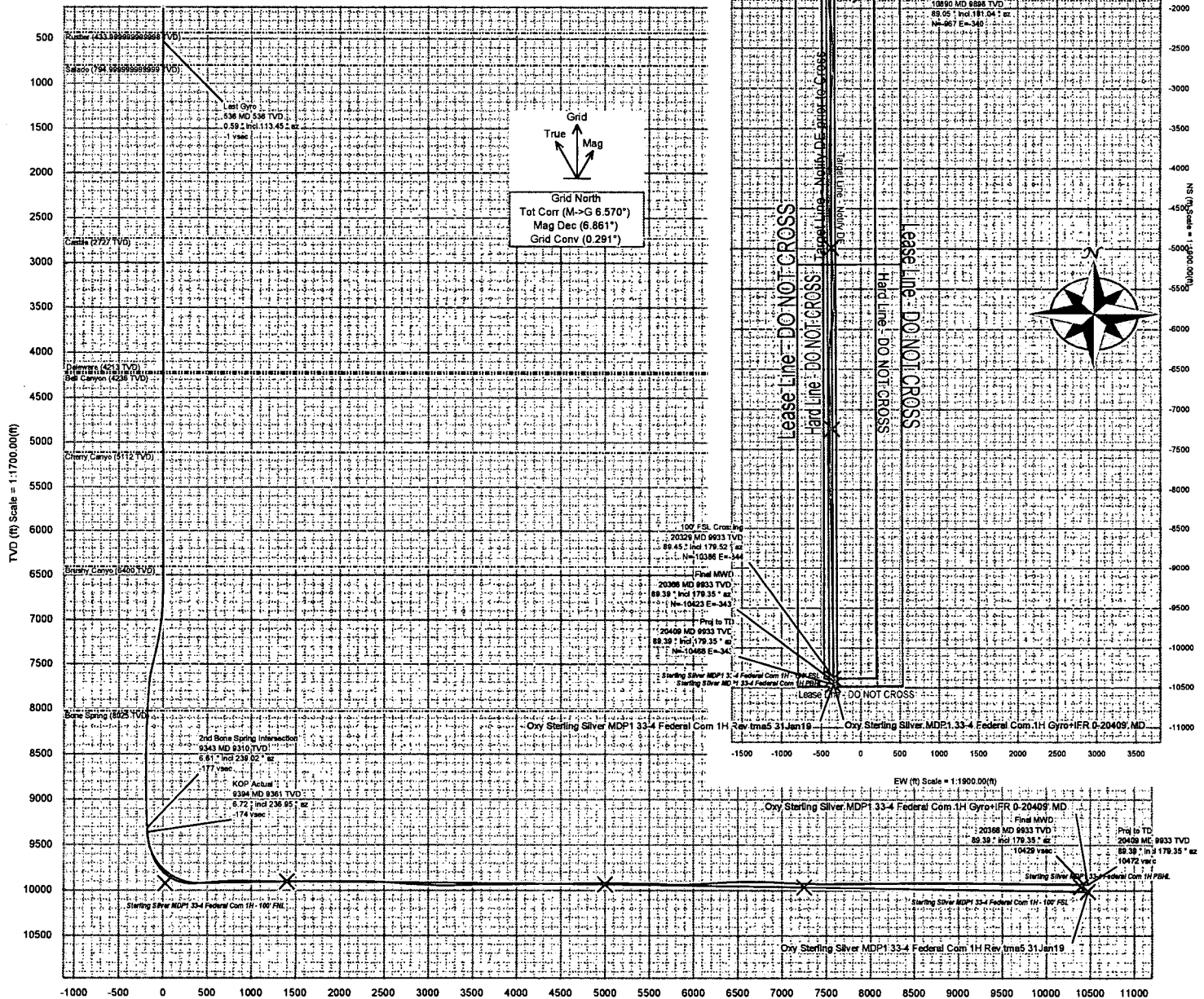
OXY



Borehole:	Well:	Field:	Structure:
Original Borehole	Sterling Silver MDP1 33-4 Federal Com 1H	NM Eddy County (NAD 83)	Oxy Sterling Silver MDP1 33-4 Federal Com 1H

Gravity & Magnetic Parameters				Surface Location				NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model: IFR1 Dip: 59.996° Date: 26-Jan-2019				Lat: N 32 16 4.56 Northing: 451634.38US Grid Conv: 0.2908°				Slot: MDP1 33-4 TVD Ref: RKB-30/3401 (41' above MSL)							
MagDec: 6.861° FS: 40006.7nT Gravity FS: 998.451mgm (R.80466 Based)				Lon: W 103 47 18.93 Easting: 709708.04US Scale Fact: 0.99994156				Plan: Oxy Sterling Silver MDP1 33-4 Federal Com 1H OyoHFR 0-20409° MD							

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)S(-)	E(+)W(-)	DLS
WRP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SHL	30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00
Last Gyro	536.00	0.59	113.45	535.99	-0.70	0.62	2.50	0.64
2nd Bone Spring Intersection	9342.50	6.61	239.02	9310.00	-176.91	185.00	-239.13	0.52
KOP Actual	9394.00	6.72	236.95	9361.15	-173.57	181.84	-244.20	0.52
100' FNL Crossing	9902.65	48.97	186.26	9811.56	21.96	-11.41	-316.11	10.33
Exit Target Box	10520.00	93.67	178.67	9906.58	608.30	-597.22	-341.50	0.97
Enter Target Box	10890.00	89.05	181.04	9898.13	977.77	-966.96	-339.71	1.81
100' FSL Crossing	20329.00	89.45	179.52	9932.60	10391.98	-10386.29	-343.69	0.48
Final MWD	20366.00	89.39	179.35	9932.98	10428.94	-10423.29	-343.32	0.48
Proj to TD	20409.00	89.39	179.35	9933.43	10471.89	-10466.28	-342.83	0.00



Vertical Section (ft) Azim = 181.92° Scale = 1:1700.00(ft) Origin = 0N/-S, 0E/-W



Oxy Sterling Silver MDP1 33-4 Federal Com 1H Gyro+IFR 0-20409' MD **Survey Geodetic Report** (Def Survey)

Report Date:	February 11, 2019 - 03:30 PM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	OXY	Vertical Section Azimuth:	181.915 ° (Grid North)
Field:	NM Eddy County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Sterling Silver MDP1 33-4 Federal Com 1H / Sterling Silver MDP1 33-4 Federal Com 1H	TVD Reference Datum:	RKB-30'
Well:	Sterling Silver MDP1 33-4 Federal Com 1H	TVD Reference Elevation:	3401.800 ft above MSL
Borehole:	Original Borehole	Seabed / Ground Elevation:	3371.800 ft above MSL
UWI / API#:	Unknown / 30-015-45335	Magnetic Declination:	6.861 °
Survey Name:	Oxy Sterling Silver MDP1 33-4 Federal Com 1H Gyro+IFR 0-20409' MD	Total Gravity Field Strength:	998.4507mgm (9.80665 Based)
Survey Date:	January 17, 2019	Gravity Model:	GARM
Tort / AHD / DDI / ERD Ratio:	288.437 ° / 11076.720 ft / 6.832 / 1.114	Total Magnetic Field Strength:	48006.700 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Magnetic Dip Angle:	59.996 °
Location Lat / Long:	N 32° 16' 4.55792", W 103° 47' 18.93089"	Declination Date:	January 26, 2019
Location Grid N/E Y/X:	N 461634.300 ftUS, E 709709.040 ftUS	Magnetic Declination Model:	IFR1
CRS Grid Convergence Angle:	0.2908 °	North Reference:	Grid North
Grid Scale Factor:	0.99994156	Grid Convergence Used:	0.2908 °
Version / Patch:	2.10.753.0	Total Corr Mag North->Grid North:	6.5702 °
		Local Coord Referenced To:	Well Head

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 ° ' ")
WRP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	461634.30	709709.04	N 32 16 4.56 W 103 47 18.93	
SHL	30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	461634.30	709709.04	N 32 16 4.56 W 103 47 18.93	
	105.00	0.26	84.20	105.00	-0.02	0.02	0.17	0.35	461634.32	709709.21	N 32 16 4.56 W 103 47 18.93	
	132.00	0.20	52.36	132.00	-0.06	0.05	0.27	0.51	461634.35	709709.31	N 32 16 4.56 W 103 47 18.93	
	189.00	0.35	25.12	189.00	-0.28	0.27	0.42	0.34	461634.57	709709.46	N 32 16 4.56 W 103 47 18.93	
	244.00	0.26	77.45	244.00	-0.47	0.45	0.61	0.51	461634.75	709709.65	N 32 16 4.56 W 103 47 18.92	
	306.00	0.38	81.73	306.00	-0.54	0.51	0.95	0.20	461634.81	709709.99	N 32 16 4.56 W 103 47 18.92	
	369.00	0.37	78.08	369.00	-0.63	0.58	1.36	0.04	461634.88	709710.40	N 32 16 4.56 W 103 47 18.92	
	432.00	0.40	73.38	431.99	-0.75	0.69	1.77	0.07	461634.99	709710.81	N 32 16 4.56 W 103 47 18.91	
	495.00	0.36	98.01	494.99	-0.79	0.72	2.18	0.26	461635.02	709711.22	N 32 16 4.56 W 103 47 18.91	
Last Gyro	536.00	0.59	113.45	535.99	-0.70	0.62	2.50	0.64	461634.92	709711.54	N 32 16 4.56 W 103 47 18.90	
	576.00	0.28	133.59	575.99	-0.56	0.47	2.76	0.85	461634.77	709711.80	N 32 16 4.56 W 103 47 18.90	
	668.00	0.06	273.33	667.99	-0.41	0.32	2.87	0.36	461634.62	709711.91	N 32 16 4.56 W 103 47 18.90	
	759.00	0.06	227.31	758.99	-0.38	0.29	2.79	0.05	461634.59	709711.83	N 32 16 4.56 W 103 47 18.90	
	850.00	0.00	198.54	849.99	-0.35	0.26	2.75	0.07	461634.56	709711.79	N 32 16 4.56 W 103 47 18.90	
	940.00	0.00	335.05	939.99	-0.35	0.26	2.75	0.00	461634.56	709711.79	N 32 16 4.56 W 103 47 18.90	
	1030.00	0.00	165.86	1029.99	-0.35	0.26	2.75	0.00	461634.56	709711.79	N 32 16 4.56 W 103 47 18.90	
	1121.00	0.06	179.19	1120.99	-0.30	0.21	2.76	0.07	461634.51	709711.79	N 32 16 4.56 W 103 47 18.90	
	1211.00	0.00	244.30	1210.99	-0.25	0.16	2.76	0.07	461634.46	709711.80	N 32 16 4.56 W 103 47 18.90	
	1302.00	0.00	334.13	1301.99	-0.25	0.16	2.76	0.00	461634.46	709711.80	N 32 16 4.56 W 103 47 18.90	
	1393.00	0.00	45.05	1392.99	-0.25	0.16	2.76	0.00	461634.46	709711.80	N 32 16 4.56 W 103 47 18.90	
	1487.00	0.00	279.06	1486.99	-0.25	0.16	2.76	0.00	461634.46	709711.80	N 32 16 4.56 W 103 47 18.90	
	1582.00	0.00	306.90	1581.99	-0.25	0.16	2.76	0.00	461634.46	709711.80	N 32 16 4.56 W 103 47 18.90	
	1676.00	0.06	5.29	1675.99	-0.30	0.21	2.76	0.06	461634.51	709711.80	N 32 16 4.56 W 103 47 18.90	
	1771.00	0.00	24.07	1770.99	-0.35	0.26	2.76	0.06	461634.56	709711.80	N 32 16 4.56 W 103 47 18.90	
	1960.00	0.00	240.40	1959.99	-0.35	0.26	2.76	0.00	461634.56	709711.80	N 32 16 4.56 W 103 47 18.90	
	2055.00	0.06	188.73	2054.99	-0.30	0.21	2.76	0.06	461634.51	709711.80	N 32 16 4.56 W 103 47 18.90	
	2149.00	0.00	161.89	2148.99	-0.25	0.16	2.75	0.06	461634.46	709711.79	N 32 16 4.56 W 103 47 18.90	
	2244.00	0.06	255.78	2243.99	-0.24	0.15	2.70	0.06	461634.45	709711.74	N 32 16 4.56 W 103 47 18.90	
	2338.00	0.06	112.60	2337.99	-0.21	0.12	2.70	0.12	461634.42	709711.74	N 32 16 4.56 W 103 47 18.90	
	2433.00	0.00	352.93	2432.99	-0.19	0.10	2.75	0.06	461634.40	709711.79	N 32 16 4.56 W 103 47 18.90	
	2528.00	0.00	77.47	2527.99	-0.19	0.10	2.75	0.00	461634.40	709711.79	N 32 16 4.56 W 103 47 18.90	
	2622.00	0.00	50.11	2621.99	-0.19	0.10	2.75	0.00	461634.40	709711.79	N 32 16 4.56 W 103 47 18.90	
	2717.00	0.06	116.52	2716.99	-0.17	0.08	2.79	0.06	461634.38	709711.83	N 32 16 4.56 W 103 47 18.90	
	2812.00	0.00	346.44	2811.99	-0.15	0.06	2.83	0.06	461634.36	709711.87	N 32 16 4.56 W 103 47 18.90	
	2906.00	0.00	328.34	2905.99	-0.15	0.06	2.83	0.00	461634.36	709711.87	N 32 16 4.56 W 103 47 18.90	
	3001.00	0.06	248.71	3000.99	-0.13	0.04	2.79	0.06	461634.34	709711.83	N 32 16 4.56 W 103 47 18.90	
	3095.00	0.00	324.12	3094.99	-0.11	0.02	2.74	0.06	461634.32	709711.78	N 32 16 4.56 W 103 47 18.90	
	3189.00	0.00	153.46	3188.99	-0.11	0.02	2.74	0.00	461634.32	709711.78	N 32 16 4.56 W 103 47 18.90	
	3285.00	0.00	232.45	3284.99	-0.11	0.02	2.74	0.00	461634.32	709711.78	N 32 16 4.56 W 103 47 18.90	
	3379.00	0.08	170.95	3378.99	-0.05	-0.04	2.75	0.09	461634.26	709711.79	N 32 16 4.56 W 103 47 18.90	
	3474.00	0.08	192.95	3473.99	0.08	-0.17	2.75	0.03	461634.13	709711.79	N 32 16 4.56 W 103 47 18.90	
	3568.00	0.06	271.00	3567.99	0.15	-0.24	2.68	0.10	461634.06	709711.72	N 32 16 4.56 W 103 47 18.90	
	3663.00	0.06	311.59	3662.99	0.12	-0.20	2.60	0.04	461634.10	709711.64	N 32 16 4.56 W 103 47 18.90	
	3758.00	0.06	185.39	3757.99	0.14	-0.22	2.56	0.11	461634.08	709711.60	N 32 16 4.56 W 103 47 18.90	
	3852.00	0.05	197.25	3851.99	0.22	-0.31	2.54	0.02	461633.99	709711.58	N 32 16 4.55 W 103 47 18.90	
	3947.00	0.06	225.61	3946.99	0.30	-0.38	2.49	-0.03	461633.92	709711.53	N 32 16 4.55 W 103 47 18.90	
	4136.00	0.06	343.68	4135.99	0.28	-0.36	2.39	-0.05	461633.94	709711.43	N 32 16 4.55 W 103 47 18.90	
	4210.00	0.00	27.05	4209.99	0.24	-0.32	2.38	0.06	461633.98	709711.42	N 32 16 4.55 W 103 47 18.90	
	4390.00	0.10	72.25	4389.99	0.19	-0.27	2.53	0.06	461634.03	709711.57	N 32 16 4.56 W 103 47 18.90	
4579.00	0.05	286.61	4578.99	0.11	-0.20	2.61	0.08	461634.10	709711.65	N 32 16 4.56 W 103 47 18.90		
4674.00	0.10	282.29	4673.99	0.09	-0.17	2.49	0.05	461634.13	709711.53	N 32 16 4.56 W 103 47 18.90		
4768.00	0.05	80.00	4767.99	0.06	-0.14	2.45	0.16	461634.16	709711.49	N 32 16 4.56 W 103 47 18.90		
4863.00	0.17	24.58	4862.99	-0.08	-0.01	2.55	0.16	461634.29	709711.59	N 32 16 4.56 W 103 47 18.90		
5052.00	0.28	182.01	5051.99	0.13	-0.22	2.65	0.23	461634.08	709711.69	N 32 16 4.56 W 103 47 18.90		
5147.00	0.22	96.74	5146.99	0.37	-0.47	2.82	0.36	461633.83	709711.86	N 32 16 4.55 W 103 47 18.90		
5336.00	0.19	240.38	5335.99	0.57	-0.67	2.91	0.21	461633.63	709711.95	N 32 16 4.55 W 103 47 18.90		
5526.00	0.29	320.31	5525.99	0.37	-0.45	2.33	0.17	461633.85	709711.37	N 32 16 4.55 W 103 47 18.90		
5620.00	0.30	182.77	5619.99	0.44	-0.51	2.16	0.59	461633.79	709711.20	N 32 16 4.55 W 103 47 18.91		
5715.00	0.09	104.38	5714.99	0.71	-0.78	2.22	0.31	461633.52	709711.26	N 32 16 4.55 W 103 47 18.91		
5809.00	0.05	83.02	5808.98	0.72	-0.80	2.34	0.05	461633.50	709711.38	N 32 16 4.55 W 103 47 18.90		
5998.00	0.07	170.56	5997.98	0.82	-0.90	2.44	0.04	461633.40	709711.48	N 32 16 4.55 W 103 47 18.90		
6093.00	0.10	45.35	6092.98	0.81	-0.90	2.51	0.16	461633.40	709711.55	N 32 16 4.55 W 103 47 18.90		
6188.00	0.10	0.33	6187.98	0.67	-0.76	2.57	0.08	461633.54	709711.61	N 32 16 4.55 W 103 47 18.90		
6282.00	0.05	40.78	6281.98	0.56	-0.64	2.59	0.07	461633.66	709711.63	N 32 16 4.55 W 103 47 18.90		
6377.00	0.11	56.67	6376.98	0.47	-0.56	2.70	0.07	461633.74	709711.74	N 32 16 4.55 W 103 47 18.90		
6471.00	0.07	100.96	6470.98	0.43	-0.52	2.83	0.08	461633.78	709711.87	N 32 16 4.55 W 103 47 18.90		
6566.00	0.11	163.26	6565.98	0.52	-0.62	2.91	0.10	461633.68	709711.95	N 32 16 4.55 W 103 47 18.90		
6661.00	0.06	50.73	6660.98	0.58	-0.68	2.98	0.15	461633.62	709712.02	N 32 16 4.55 W 103 47 18.90		
6755.00	1.69	4.96	6754.97	-0.84	0.73	3.13	1.75	461635.03	709712.17	N 32 16 4.57 W 103 47 18.89		
6850.00	3.87	1.89	6849.85	-5.44	5.33	3.36	2.30	461639.63	709712.40	N 32 16 4.61 W 103 47 18.89		
6944.00	6.30	1.09	6943.48	-13.77	13.66	3.56	2.59	461647.96	709712.60	N 32 16 4.69 W 103 47 18.89		
7039.00	6.47	0.79	7037.89	-24.34	24.23	3.74	0.18	461658.52	709712.78	N 32 16 4.80 W 103 47 18.89		
7133.00	8.47	359.97	7131.08	-36.55	36.45	3.81	2.13	461670.74	709712.85	N 32 16 4.92 W 103 47 18.88		
7227.00	11.34	359.56	7223.67	-52.71	52.61	3.73	3.05	461686.91	709712.77	N 32 16 5.08 W 103 47 18.88		
7322.00	13.23	355.87	7316.50	-72.85	72.80	2.88	2.15	461707.09	709711.92	N 32 16 5.28 W 103 47 18.89		
7417.00	14.67	340.53	7408.72	-94.87	94.99	-1.92	4.16	461729.29	709707.12	N 32 16 5.50 W 103 47 18.95		

Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ° °)	Longitude (E/W ° ° °)
	7511.00	16.21	326.26	7499.36	-116.63	117.13	-13.18	4.35	461751.43	709695.86	N 32 16 5.72 W	103 47 18.08
	7606.00	17.07	315.84	7590.40	-137.08	138.17	-30.26	3.26	461772.46	709678.78	N 32 16 5.93 W	103 47 19.28
	7700.00	12.80	304.12	7681.23	-152.21	153.92	-48.50	5.54	461788.21	709660.54	N 32 16 6.08 W	103 47 19.49
	7795.00	10.44	290.58	7774.29	-160.58	162.85	-65.28	3.78	461797.14	709643.76	N 32 16 6.17 W	103 47 19.68
	7890.00	10.93	291.17	7867.64	-166.30	169.13	-81.74	0.53	461803.42	709627.31	N 32 16 6.24 W	103 47 19.87
	7984.00	10.60	290.40	7959.99	-171.98	175.36	-98.15	0.38	461809.65	709610.90	N 32 16 6.30 W	103 47 20.06
	8079.00	8.70	290.62	8053.64	-177.06	180.93	-113.07	2.00	461815.22	709595.98	N 32 16 6.35 W	103 47 20.24
	8173.00	6.99	288.99	8146.76	-181.02	185.30	-125.13	1.83	461819.59	709583.92	N 32 16 6.40 W	103 47 20.38
	8268.00	5.88	287.62	8241.16	-184.03	188.65	-135.23	1.18	461822.94	709573.81	N 32 16 6.43 W	103 47 20.49
	8362.00	6.83	283.47	8334.58	-186.45	191.41	-145.26	1.12	461825.70	709563.79	N 32 16 6.46 W	103 47 20.61
	8457.00	7.44	288.33	8428.84	-189.32	194.66	-156.59	0.90	461828.95	709552.46	N 32 16 6.49 W	103 47 20.74
	8552.00	7.04	285.92	8523.09	-192.47	198.20	-168.03	0.53	461832.48	709541.02	N 32 16 6.53 W	103 47 20.88
	8646.00	5.78	276.85	8616.50	-194.27	200.34	-178.27	1.72	461834.63	709530.78	N 32 16 6.55 W	103 47 21.00
	8741.00	4.47	268.14	8711.12	-194.44	200.79	-186.72	1.60	461835.08	709522.33	N 32 16 6.55 W	103 47 21.09
	8836.00	4.03	260.68	8805.86	-193.54	200.13	-193.71	0.74	461834.42	709515.34	N 32 16 6.55 W	103 47 21.18
	8930.00	4.30	258.17	8899.61	-192.06	198.87	-200.42	0.35	461833.16	709508.63	N 32 16 6.54 W	103 47 21.25
	9025.00	5.02	257.37	8994.29	-190.17	197.23	-207.96	0.76	461831.52	709501.09	N 32 16 6.52 W	103 47 21.34
	9120.00	5.99	254.19	9088.86	-187.62	194.97	-216.79	1.07	461829.26	709492.27	N 32 16 6.50 W	103 47 21.44
	9140.00	6.14	253.04	9108.74	-186.96	194.38	-218.82	0.97	461828.67	709490.24	N 32 16 6.49 W	103 47 21.47
	9299.00	6.52	240.83	9266.78	-179.54	187.50	-234.83	0.88	461821.79	709474.22	N 32 16 6.42 W	103 47 21.65
2nd Bone Spring Intersection KOP Actual	9342.50	6.61	239.02	9310.00	-176.91	185.00	-239.13	0.52	461819.29	709469.92	N 32 16 6.40 W	103 47 21.70
	9394.00	6.72	238.95	9361.15	-173.57	181.84	-244.20	0.52	461816.13	709464.85	N 32 16 6.37 W	103 47 21.76
	9489.00	15.16	227.70	9454.34	-161.70	170.42	-258.07	9.05	461804.71	709450.98	N 32 16 6.26 W	103 47 21.93
	9584.00	18.56	217.04	9545.27	-140.66	149.98	-276.38	4.82	461784.28	709432.68	N 32 16 6.06 W	103 47 22.14
	9679.00	25.45	199.35	9633.39	-108.75	118.59	-292.28	9.99	461752.88	709416.77	N 32 16 5.75 W	103 47 22.33
	9774.00	34.03	190.79	9715.84	-62.91	73.11	-304.05	10.06	461707.40	709405.01	N 32 16 5.30 W	103 47 22.47
	9869.00	45.55	187.09	9788.72	-2.66	13.14	-313.25	12.38	461647.44	709395.81	N 32 16 4.70 W	103 47 22.58
100' FNL Crossing	9902.65	48.97	186.26	9811.56	21.96	-11.41	-316.11	10.33	461622.89	709392.95	N 32 16 4.46 W	103 47 22.61
	9964.00	55.22	184.94	9849.23	70.25	-59.56	-320.81	10.33	461574.74	709388.25	N 32 16 3.98 W	103 47 22.67
	10059.00	68.69	190.10	9893.82	153.43	-142.42	-331.99	14.96	461491.89	709377.07	N 32 16 3.17 W	103 47 22.81
	10153.00	80.65	188.58	9916.62	243.17	-231.71	-346.64	12.82	461402.60	709362.42	N 32 16 2.28 W	103 47 22.98
	10246.00	91.45	177.01	9925.25	338.62	-327.07	-351.23	16.45	461307.25	709357.83	N 32 16 1.34 W	103 47 23.04
	10340.00	94.00	177.43	9925.84	395.36	-383.83	-348.47	11.15	461250.39	709350.59	N 32 16 0.78 W	103 47 23.01
	10393.00	94.75	178.09	9915.90	461.88	-470.61	-345.08	4.53	461163.72	709358.98	N 32 16 59.92 W	103 47 22.98
Exit Target Box	10520.00	93.67	178.67	9906.59	608.30	-507.22	-341.50	0.97	461037.12	709367.56	N 32 15 58.67 W	103 47 22.94
	10580.00	93.16	178.95	9903.00	668.10	-657.10	-340.26	0.97	460977.24	709368.80	N 32 15 58.07 W	103 47 22.93
	10674.00	92.00	179.86	9898.77	761.91	-750.99	-339.29	1.57	460883.35	709369.77	N 32 15 57.14 W	103 47 22.93
	10767.00	90.34	179.79	9896.87	854.83	-843.97	-339.00	1.79	460790.38	709370.06	N 32 15 56.22 W	103 47 22.93
	10860.00	88.80	180.56	9897.57	947.78	-936.97	-339.29	1.85	460697.39	709369.77	N 32 15 55.30 W	103 47 22.94
Enter Target Box	10890.00	89.05	181.04	9898.13	977.77	-968.96	-339.71	1.81	460667.40	709369.36	N 32 15 55.01 W	103 47 22.94
	10954.00	89.59	182.07	9898.89	1041.76	-1030.93	-341.44	1.81	460603.43	709367.62	N 32 15 54.37 W	103 47 22.97
	11047.00	88.21	183.71	9900.68	1134.73	-1123.79	-346.13	2.30	460510.58	709362.93	N 32 15 53.46 W	103 47 23.03
	11142.00	88.66	188.10	9903.27	1229.44	-1218.22	-355.90	4.64	460416.15	709353.16	N 32 15 52.52 W	103 47 23.15
	11237.00	89.24	192.98	9905.02	1323.32	-1311.58	-373.27	5.17	460322.80	709335.79	N 32 15 51.60 W	103 47 23.36
	11331.00	90.04	189.65	9905.61	1416.04	-1403.73	-381.71	3.64	460230.65	709317.36	N 32 15 50.69 W	103 47 23.58
	11426.00	91.20	186.26	9904.58	1510.49	-1487.80	-404.85	3.77	460136.59	709304.21	N 32 15 49.76 W	103 47 23.73
	11521.00	90.83	183.37	9902.90	1605.34	-1592.44	-412.82	3.07	460041.96	709296.24	N 32 15 48.82 W	103 47 23.83
	11615.00	90.34	180.36	9901.94	1699.33	-1686.37	-415.88	3.24	459948.03	709293.18	N 32 15 47.89 W	103 47 23.87
	11710.00	90.62	176.37	9901.14	1794.12	-1781.31	-413.17	4.21	459853.10	709295.89	N 32 15 46.95 W	103 47 23.85
	11805.00	90.48	175.79	9900.23	1888.63	-1876.08	-406.68	0.63	459758.33	709302.39	N 32 15 46.01 W	103 47 23.78
	11900.00	90.65	175.91	9899.29	1983.09	-1970.83	-399.80	0.22	459663.59	709309.26	N 32 15 45.08 W	103 47 23.70
	11994.00	89.76	174.19	9898.95	2076.41	-2064.48	-391.69	2.06	459569.95	709317.37	N 32 15 44.15 W	103 47 23.61
	12089.00	89.18	173.72	9899.83	2170.49	-2158.94	-381.69	0.79	459475.49	709327.37	N 32 15 43.21 W	103 47 23.50
	12184.00	88.93	174.94	9901.40	2264.65	-2253.46	-372.31	1.31	459380.97	709336.76	N 32 15 42.28 W	103 47 23.40
	12279.00	89.31	174.82	9902.86	2358.92	-2348.07	-363.83	0.42	459286.37	709345.23	N 32 15 41.34 W	103 47 23.31
	12373.00	87.70	175.65	9905.31	2452.25	-2441.71	-356.02	1.93	459192.74	709353.04	N 32 15 40.42 W	103 47 23.22
	12468.00	85.42	177.46	9911.01	2546.65	-2536.36	-350.32	3.06	459098.09	709358.74	N 32 15 39.48 W	103 47 23.16
	12563.00	85.42	179.64	9918.60	2641.18	-2631.02	-347.93	2.29	459003.44	709361.13	N 32 15 38.54 W	103 47 23.14
	12658.00	86.59	182.25	9925.22	2735.92	-2725.77	-349.49	3.00	458908.70	709359.57	N 32 15 37.60 W	103 47 23.16
	12753.00	87.35	184.03	9930.24	2830.76	-2820.49	-354.69	2.03	458813.98	709354.37	N 32 15 36.67 W	103 47 23.23
	12848.00	88.18	185.39	9933.94	2925.58	-2915.09	-362.48	1.68	458719.39	709346.58	N 32 15 35.73 W	103 47 23.32
	12943.00	87.80	184.12	9937.28	3020.40	-3009.70	-370.35	1.39	458624.78	709338.71	N 32 15 34.80 W	103 47 23.42
	13038.00	86.56	182.45	9941.95	3115.25	-3104.43	-375.79	2.19	458530.06	709333.27	N 32 15 33.86 W	103 47 23.49
	13133.00	91.24	181.64	9943.77	3210.21	-3199.32	-378.18	5.00	458435.17	709329.88	N 32 15 32.92 W	103 47 23.54
	13222.00	92.03	180.53	9938.38	3399.10	-3388.21	-382.76	0.72	458246.30	709326.31	N 32 15 31.05 W	103 47 23.59
	13317.00	91.76	180.92	9935.24	3494.03	-3483.15	-383.96	0.50	458151.36	709325.10	N 32 15 30.11 W	103 47 23.61
	13412.00	91.00	181.74	9932.95	3589.00	-3578.09	-386.16	1.18	458056.42	709322.90	N 32 15 29.17 W	103 47 23.64
	13507.00	89.76	182.63	9932.33	3682.99	-3672.02	-389.75	1.62	457962.50	709319.32	N 32 15 28.24 W	103 47 23.69
	13701.00	89.93	182.00	9932.59	3777.99	-3766.94	-393.58	0.69	457867.59	709315.48	N 32 15 27.30 W	103 47 23.74
	13796.00	90.10	181.35	9932.56	3872.99	-3861.90	-396.36	0.71	457772.63	709312.70	N 32 15 26.36 W	103 47 23.77
	13890.00	91.00	180.43	9931.66	3966.97	-3955.88	-397.82	1.37	457678.66	709311.24	N 32 15 25.43 W	103 47 23.80
	14079.00	91.17	181.25	9928.08	4155.90	-4144.83	-400.59	0.44	457489.73	709308.47	N 32 15 23.57 W	103 47 23.84
	14173.00	91.17	180.58	9926.16	4249.86	-4238.79	-402.09	0.71	457395.76	709306.97	N 32 15 22.64 W	103 47 23.86
	14363.00	89.73	178.89	9924.67	4439.71	-4428.77	-401.21	1.17	457205.79	709307.85	N 32 15 20.76 W	103 47 23.86
	14552.00	91.10	177.31	9923.30	4628.27	-4617.65	-394.95	1.11	457016.92	709314.12	N 32 15 18.89 W	103 47 23.80
	14646.00	90.76	176.81	9921.77	4721.92	-4711.52	-390.13	0.64	456923.07	709318.94	N 32 15 17.96 W	103 47 23.75
	14741.00	91										

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 ° ' ")
	17958.00	90.35	179.25	9922.51	8024.15	-8015.80	-383.89	0.38	453618.99	709325.17	N 32 14 45.26	W 103 47 23.87
	18053.00	90.39	178.65	9921.89	8119.02	-8110.78	-382.15	0.63	453524.01	709326.92	N 32 14 44.32	W 103 47 23.86
	18148.00	90.42	178.64	9921.22	8213.86	-8205.75	-379.90	0.03	453429.05	709329.16	N 32 14 43.38	W 103 47 23.84
	18242.00	90.66	178.53	9920.34	8307.70	-8299.72	-377.58	0.28	453335.09	709331.48	N 32 14 42.45	W 103 47 23.82
	18337.00	90.49	178.64	9919.38	8402.53	-8394.68	-375.23	0.21	453240.13	709333.83	N 32 14 41.51	W 103 47 23.80
	18432.00	89.91	179.73	9919.05	8497.42	-8489.67	-373.88	1.30	453145.14	709335.18	N 32 14 40.57	W 103 47 23.79
	18526.00	89.94	179.75	9919.17	8591.35	-8583.67	-373.46	0.04	453051.15	709335.61	N 32 14 39.64	W 103 47 23.79
	18621.00	89.80	178.67	9919.39	8686.25	-8678.66	-372.15	1.15	452956.17	709336.92	N 32 14 38.70	W 103 47 23.78
	18716.00	89.94	178.60	9919.60	8781.09	-8773.63	-369.88	0.16	452861.20	709339.18	N 32 14 37.76	W 103 47 23.76
	18810.00	89.94	179.12	9919.70	8874.96	-8867.61	-368.01	0.55	452767.22	709341.05	N 32 14 36.83	W 103 47 23.74
	18905.00	90.08	179.30	9919.69	8969.85	-8962.60	-366.70	0.24	452672.24	709342.36	N 32 14 35.89	W 103 47 23.73
	18999.00	90.49	178.67	9919.22	9063.73	-9056.59	-365.04	0.80	452578.26	709344.02	N 32 14 34.96	W 103 47 23.72
	19094.00	88.77	178.59	9919.83	9158.56	-9151.55	-362.77	1.81	452483.30	709346.29	N 32 14 34.02	W 103 47 23.70
	19189.00	89.56	178.79	9921.22	9253.40	-9246.52	-360.60	0.86	452388.34	709348.47	N 32 14 33.08	W 103 47 23.68
	19283.00	89.12	180.64	9922.30	9347.32	-9340.51	-360.13	2.02	452294.36	709348.93	N 32 14 32.15	W 103 47 23.68
	19378.00	89.87	178.92	9923.14	9442.25	-9435.50	-359.76	1.98	452199.37	709349.30	N 32 14 31.21	W 103 47 23.68
	19473.00	89.08	178.85	9924.01	9537.11	-9530.47	-357.92	0.83	452104.40	709351.15	N 32 14 30.27	W 103 47 23.66
	19562.00	89.46	178.40	9926.42	9725.78	-9719.40	-353.38	0.31	451915.48	709355.68	N 32 14 28.40	W 103 47 23.62
	19756.00	89.18	178.86	9927.53	9819.62	-9813.37	-351.13	0.57	451821.52	709357.93	N 32 14 27.47	W 103 47 23.60
	19851.00	89.46	178.88	9928.66	9914.48	-9908.34	-349.26	0.30	451726.55	709359.80	N 32 14 26.53	W 103 47 23.58
	19946.00	89.39	179.33	9929.61	10009.36	-10003.33	-347.78	0.48	451631.58	709361.29	N 32 14 25.59	W 103 47 23.57
	20040.00	89.73	179.48	9930.33	10103.27	-10097.32	-346.80	0.40	451537.59	709362.26	N 32 14 24.66	W 103 47 23.57
	20135.00	89.53	178.98	9930.95	10198.16	-10192.31	-345.52	0.57	451442.61	709363.54	N 32 14 23.72	W 103 47 23.56
	20229.00	89.53	179.65	9931.72	10292.06	-10286.30	-344.40	0.71	451348.62	709364.66	N 32 14 22.79	W 103 47 23.55
	20324.00	89.46	179.54	9932.56	10386.98	-10381.29	-343.73	0.14	451253.63	709365.33	N 32 14 21.85	W 103 47 23.55
100' FSL	20329.00	89.45	179.52	9932.60	10391.98	-10386.29	-343.69	0.48	451248.64	709365.37	N 32 14 21.80	W 103 47 23.55
Crossing	20366.00	89.39	179.35	9932.98	10428.94	-10423.29	-343.32	0.48	451211.64	709365.74	N 32 14 21.44	W 103 47 23.54
Final MWD	20409.00	89.39	179.35	9933.43	10471.89	-10466.28	-342.83	0.00	451168.65	709366.23	N 32 14 21.01	W 103 47 23.54
Proj to TD												

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7855 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	30.000	1/98.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Sterling Silver MDP1 33-4 Federal Com 1H Gyro+IFR 0-20409' MD
	1	30.000	30.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Sterling Silver MDP1 33-4 Federal Com 1H Gyro+IFR 0-20409' MD
	1	30.000	536.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Sterling Silver MDP1 33-4 Federal Com
	1	536.000	20409.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Sterling Silver MDP1 33-4 Federal Com

...Original Borehole\Oxy Sterling Silver MDP1 33-4 Federal Com 1H Gyro+IFR 0-20409' MD