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:
21, 24S, 29E, Eddy NM
N 32 20524 W -103.99755

I, Drew Mikkonen certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation, that I did on the day(s) of August 22, 2017 through September 16, 2017, conduct or supervise the taking of the TelePacer - SlimPulse surveys from a depth of 500.00 feet to a depth of 13318.00 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 amauthorized and qualified to make this report; that this survey was conducted at the request of Oxy U.S.A Inc for the Cedar Canyon 21Federal Com 23H Well (Original Hole) API No. 30-015-44191 in New Mexico; and that I have reviewed this report and find that itconforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

By
Drew Mikkonen
FS

Subscribed and Sworn to before me this 26th day of September (month) 2017 (yr)

My Commission expires:
Dec 20, 2020

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

Notary Public

Adams County Colorado
(County State)

Final PVA - Rev2

H&P 636 (RKB=26.5ft)

Schlumberger

OXY

Borehole: Original Borehole

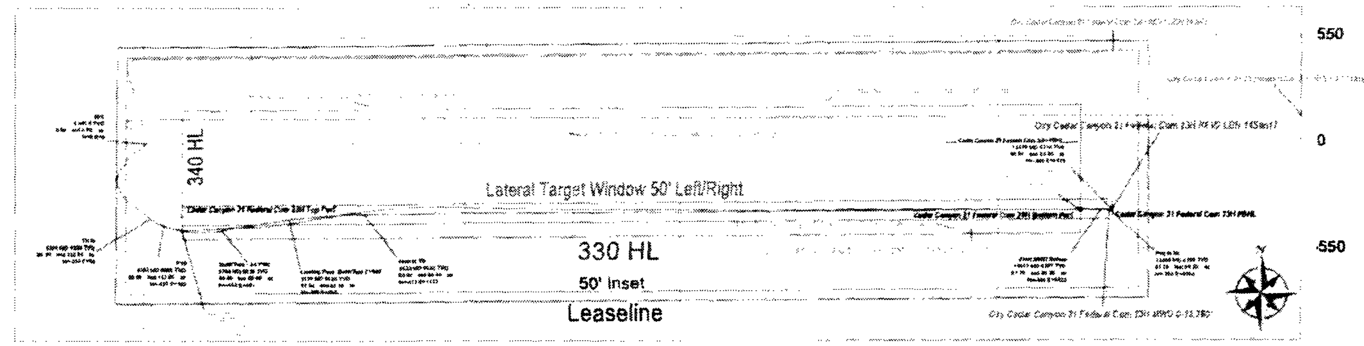
Well: Oxy Cedar Canyon 21 Federal Com 23H

Field: NM Eddy County (NAD 83)

Structure: Oxy Cedar Canyon 21 Federal Com 23H

Gravity & Magnetic Parameters							
Model:	HDGM 2017	Dip:	60.01°	Date:	14-Sep-2017		
MagDec:	7.157°	FS:	48086.105nT	Gravity FS:	998.463mgn (9.80665 Based)		

Surface Location		NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Lat:	N 32 12 18.88	Northing:	438584.0US	Grid Conv:	0.179°	Slot:	Oxy Cedar Canyon 21 Federal Com 23H	TVD Ref:	RKB=26.5ft above MSL
Lon:	W 103 58 51.18	Easting:	645184.1fUS	Scale Fact:	0.99992144	Plan:	Oxy Cedar Canyon 21 Federal Com 23H REV2 LBH 14Sep17		



NS (ft) Scale = 1:200.00(ft)

EW (ft) Scale = 1:200.00(ft)

Surface Location

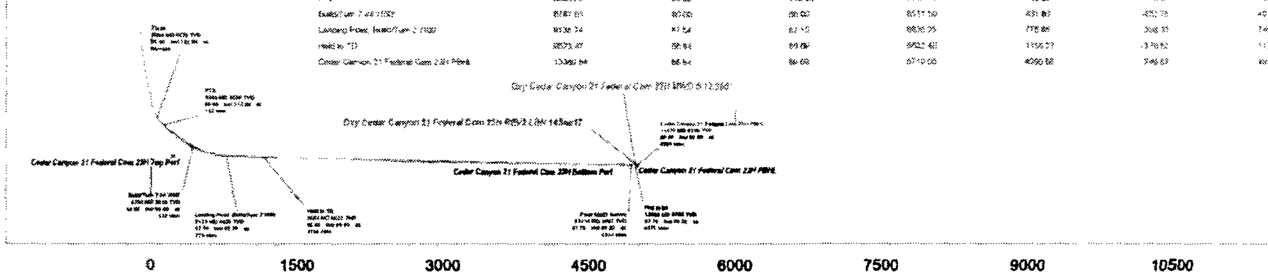
Northing	438584	Easting	645184.1	Latitude	N 32 12 18.88	Longitude	W 103 58 51.18	VSec Azimuth	94.02

Target Description

Target Name	Shape	Dimension	Latitude	Longitude	Northing	Easting	TVD	VSec
Cedar Canyon 21 Federal Com 23H Lateral Target Window	Rectangle	4781.26 x 100.00	N 32 12 15.21	W 103 59 21.07	438301.40	647161.90	[illegible]	2092.00
Oxy Cedar Canyon 21 Federal Com 23H Leaseline	Polyline	N/A	N 32 12 19.47	W 103 59 51.17	438624.00	645184.40	7957.50	-5.83
Oxy Cedar Canyon 21 Federal Com 23H Leaseline Inset	Polyline	N/A	N 32 12 19.47	W 103 59 51.1	438624.00	645184.40	7957.50	3.41
Oxy Cedar Canyon 21 Federal Com 23H Hardline	Polyline	N/A	N 32 12 19.47	W 103 59 51.11	438624.00	645184.40	7957.00	3.33
Cedar Canyon 21 Federal Com 23H Top Perf	Point	N/A	N 32 12 15.18	W 103 59 48.60	438166.80	645381.50	8820.00	223.25
Cedar Canyon 21 Federal Com 23H Bottom Perf	Point	N/A	N 32 12 15.25	W 103 58 55.11	438213.30	650012.30	8710.00	4831.32
Cedar Canyon 21 Federal Com 23H PBHL	Point	N/A	N 32 12 15.28	W 103 58 53.25	438214.30	650177.30	8710.00	4996.08

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
Rustler	254.00	1.18	50.48	254.00	0.22	0.30	0.24	0.97
Salado	685.81	0.77	64.38	685.00	2.27	1.34	2.27	0.46
Castile (Anhydrite)	1640.15	0.84	114.02	1640.00	8.82	-2.56	9.88	1.97
Lamar/Delaware	3083.17	0.52	276.87	3083.00	11.03	1.29	13.34	0.29
Bell Canyon	3110.17	0.70	200.30	3110.00	11.08	1.28	13.59	0.78
Cherry Canyon	3914.17	0.08	236.18	3914.00	10.81	0.05	10.88	0.70
Brushy Canyon	5156.17	0.94	282.13	5156.00	11.65	1.66	12.02	0.17
Bone Spring	6782.80	14.10	213.47	6765.00	103.90	126.60	113.08	1.30
KOP	8060.81	18.37	331.09	8040.00	-1.74	-343.37	-25.87	8.04
Tie In	8264.00	30.06	122.50	8230.12	63.20	169.19	35.72	
FTP	8369.55	50.06	112.00	8290.13	132.09	-428.66	102.44	13.86
Build/Turn 7.44/2002	8787.65	80.00	88.00	8511.50	431.80	-452.73	401.14	1.44
Landing Point, Build/Turn 2.1/100	9136.74	83.54	82.10	8836.25	775.86	-308.33	746.81	2.44
Hold to TD	9573.47	88.84	89.89	8922.40	1156.77	-378.62	1133.01	2.00
Cedar Canyon 21 Federal Com 23H PBHL	13382.56	88.84	89.60	8710.00	4990.68	-346.63	4978.80	0.00



TVD (ft) Scale = 1:400.00(ft)

Vertical Section (ft) Azim = 94.02° Scale = 1:400.00(ft) Origin = 0N/-S, 0E/-W

Grid

True

Mag

Grid North

Tot Corr (M->G 6.978°)

Mag Dec (7.157°)

Grid Conv (0.179°)

CONTROLLED

1	Originator
2	DE Sign Off Authority
3	Cash Line Manager
4	Client

Schlumberger

Oxy Cedar Canyon 21 Federal Com 23H MWD 0-13,360' Survey Geodetic Report

(Def Survey)

Report Date:	September 18, 2017 - 02:39 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	94.019 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Cedar Canyon 21 Federal Com 23H / Oxy Cedar Canyon 21 Federal Com 23H	**TVD Reference Datum:**	RKB=26.5'
Well:	Oxy Cedar Canyon 21 Federal Com 23H	**TVD Reference Elevation:**	2957.500 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	2931.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.164 °
Survey Name:	Oxy Cedar Canyon 21 Federal Com 23H MWD 0-13,360'	**Total Gravity Field Strength:**	998.4677mgn (9.80665 Based)
Survey Date:	August 16, 2017	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	204.254 ° / 5503.982 ft / 6.237 / 0.632	**Total Magnetic Field Strength:**	48095.258 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.012 °
Location Lat / Long:	N 32° 12' 18.87693", W 103° 59' 51.17941"	**Declination Date:**	August 16, 2017
Location Grid N/E Y/X:	N 438564.000 ftUS, E 645194.100 ftUS	**Magnetic Declination Model:**	HDGM 2017
CRS Grid Convergence Angle:	0.1790 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99992144	**Grid Convergence Used:**	0.1790 °
Version / Patch:	2.10.544.0	**Total Corr Mag North->Grid North:**	6.9853 °
		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 ° ' ")
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	438564.00	645194.10	N 32 12 18.88	W 103 59 51.18
	500.00	0.36	36.48	500.00	0.84	1.26	0.93	0.07	438565.26	645195.03	N 32 12 18.89	W 103 59 51.17
	523.00	0.41	76.67	523.00	0.96	1.34	1.05	1.17	438565.34	645195.16	N 32 12 18.89	W 103 59 51.17
	583.00	0.45	86.62	582.99	1.40	1.40	1.50	0.16	438565.40	645195.60	N 32 12 18.89	W 103 59 51.16
	644.00	0.88	96.12	643.99	2.08	1.36	2.10	0.40	438565.36	645196.20	N 32 12 18.89	W 103 59 51.15
	752.00	1.16	90.19	751.98	3.73	1.29	3.83	0.45	438565.29	645197.93	N 32 12 18.89	W 103 59 51.13
	838.00	1.31	93.73	837.96	5.58	1.22	5.68	0.20	438565.22	645199.78	N 32 12 18.89	W 103 59 51.11
	918.00	1.21	95.33	917.94	7.34	1.09	7.44	0.13	438565.09	645201.54	N 32 12 18.89	W 103 59 51.09
	1101.00	0.17	343.76	1100.92	9.18	1.17	9.28	0.70	438565.17	645203.38	N 32 12 18.89	W 103 59 51.07
	1190.00	0.16	329.85	1189.92	9.06	1.40	9.18	0.05	438565.40	645203.28	N 32 12 18.89	W 103 59 51.07
	1281.00	0.23	273.12	1280.92	8.81	1.52	8.94	0.21	438565.52	645203.03	N 32 12 18.89	W 103 59 51.08
	1372.00	0.50	214.74	1371.92	8.42	1.20	8.53	0.47	438565.20	645202.63	N 32 12 18.89	W 103 59 51.08
	1466.00	1.37	187.98	1465.91	8.13	0.25	8.14	1.01	438563.75	645202.24	N 32 12 18.87	W 103 59 51.08
	1592.00	1.41	141.30	1591.88	9.08	2.95	8.90	0.87	438561.05	645203.00	N 32 12 18.85	W 103 59 51.08
	1687.00	0.79	61.23	1686.86	10.43	3.55	10.20	1.57	438560.45	645204.30	N 32 12 18.84	W 103 59 51.06
	1782.00	0.23	302.03	1781.86	10.61	3.13	10.61	0.97	438560.87	645204.71	N 32 12 18.85	W 103 59 51.06
	1877.00	0.17	353.07	1876.86	10.61	2.89	10.44	0.19	438561.11	645204.54	N 32 12 18.85	W 103 59 51.06
	1972.00	0.62	14.23	1971.86	10.68	2.25	10.55	0.49	438561.75	645204.64	N 32 12 18.85	W 103 59 51.06
	2067.00	1.12	7.55	2066.85	10.83	0.83	10.79	0.54	438563.17	645204.89	N 32 12 18.87	W 103 59 51.05
	2162.00	0.20	22.62	2161.84	10.94	0.24	10.98	0.98	438564.24	645205.08	N 32 12 18.88	W 103 59 51.05
	2257.00	0.13	184.15	2256.84	10.97	0.29	11.02	0.35	438564.29	645205.12	N 32 12 18.88	W 103 59 51.05
	2352.00	0.53	49.03	2351.84	11.26	0.47	11.32	0.67	438564.47	645205.42	N 32 12 18.88	W 103 59 51.05
	2446.00	0.08	186.31	2445.84	11.56	0.69	11.64	0.63	438564.69	645205.74	N 32 12 18.88	W 103 59 51.04
	2541.00	0.11	219.60	2540.84	11.51	0.56	11.57	0.08	438564.56	645205.67	N 32 12 18.88	W 103 59 51.04
	2636.00	0.17	153.66	2635.84	11.52	0.36	11.58	0.17	438564.36	645205.68	N 32 12 18.88	W 103 59 51.04
	2731.00	0.28	20.45	2730.83	11.66	0.45	11.72	0.44	438564.45	645205.82	N 32 12 18.88	W 103 59 51.04
	2921.00	0.23	300.65	2920.83	11.45	1.08	11.56	0.17	438565.08	645205.65	N 32 12 18.89	W 103 59 51.04
	3016.00	0.08	1.48	3015.83	11.28	1.25	11.39	0.21	438565.25	645205.49	N 32 12 18.89	W 103 59 51.05
	3111.00	0.25	260.20	3110.83	11.07	1.28	11.19	0.29	438565.28	645205.29	N 32 12 18.89	W 103 59 51.05
	3205.00	0.18	186.00	3204.83	10.87	1.10	10.97	0.28	438565.09	645205.07	N 32 12 18.89	W 103 59 51.05
	3300.00	0.18	89.08	3299.83	11.01	0.95	11.11	0.28	438564.95	645205.21	N 32 12 18.89	W 103 59 51.05
	3490.00	0.13	221.13	3489.83	11.16	0.79	11.26	0.15	438564.79	645205.36	N 32 12 18.88	W 103 59 51.05
	3585.00	0.16	216.93	3584.83	11.04	0.60	11.11	0.03	438564.60	645205.21	N 32 12 18.88	W 103 59 51.05
	3775.00	0.16	174.67	3774.83	10.94	0.13	10.98	0.06	438564.13	645205.08	N 32 12 18.88	W 103 59 51.05
	3870.00	0.16	266.93	3869.83	10.83	0.03	10.86	0.28	438564.03	645204.96	N 32 12 18.88	W 103 59 51.05
	3965.00	0.16	33.20	3964.83	10.77	0.18	10.81	0.27	438564.18	645204.91	N 32 12 18.88	W 103 59 51.05
	4154.00	0.16	160.11	4153.83	11.01	0.16	11.04	0.15	438564.16	645205.14	N 32 12 18.88	W 103 59 51.05
	4344.00	0.20	53.89	4343.83	11.37	0.10	11.40	0.15	438564.10	645205.50	N 32 12 18.88	W 103 59 51.05
	4439.00	0.13	18.36	4438.83	11.52	0.30	11.57	0.13	438564.30	645205.67	N 32 12 18.88	W 103 59 51.04
	4629.00	0.16	340.96	4628.83	11.47	0.76	11.55	0.05	438564.76	645205.65	N 32 12 18.88	W 103 59 51.04
	4819.00	0.20	29.08	4818.83	11.51	1.30	11.63	0.08	438565.30	645205.72	N 32 12 18.89	W 103 59 51.04
	5009.00	0.20	56.40	5008.83	11.91	1.77	12.08	0.05	438565.77	645206.16	N 32 12 18.89	W 103 59 51.04
	5104.00	0.16	217.42	5103.83	11.97	1.76	12.12	0.37	438565.76	645206.22	N 32 12 18.89	W 103 59 51.04
	5294.00	0.16	14.74	5293.83	11.87	1.80	12.03	0.17	438565.80	645206.13	N 32 12 18.89	W 103 59 51.04
	5389.00	0.25	177.51	5388.83	11.92	1.73	12.07	0.43	438565.73	645206.17	N 32 12 18.89	W 103 59 51.04
	5578.00	0.13	115.26	5578.83	12.17	1.22	12.28	0.12	438565.22	645206.38	N 32 12 18.89	W 103 59 51.04
	5674.00	1.12	239.95	5673.82	11.50	0.71	11.58	1.26	438564.71	645205.68	N 32 12 18.88	W 103 59 51.04
	5769.00	1.96	179.10	5768.79	10.87	1.38	10.80	1.81	438562.62	645204.90	N 32 12 18.86	W 103 59 51.05
	5864.00	4.82	239.44	5863.64	7.72	5.04	7.39	4.43	438558.96	645201.48	N 32 12 18.83	W 103 59 51.09
	5958.00	6.23	235.76	5957.20	0.46	9.91	-0.23	1.55	438554.09	645193.87	N 32 12 18.78	W 103 59 51.18
	6053.00	7.52	234.14	6051.50	-8.42	-16.50	-9.60	1.48	438547.50	645184.50	N 32 12 18.71	W 103 59 51.29
	6148.00	8.81	230.37	6145.53	-18.52	-24.84	-20.31	1.37	438539.17	645173.79	N 32 12 18.63	W 103 59 51.42
	6243.00	10.64	227.82	6239.16	-29.85	-35.37	-32.41	1.98	438528.64	645161.69	N 32 12 18.53	W 103 59 51.56
	6338.00	11.38	224.47	6332.41	-42.00	-47.94	-45.48	1.03	438516.06	645148.63	N 32 12 18.40	W 103 59 51.71
	6433.00	12.66	224.29	6425.32	-54.81	-62.08	-59.31	1.35	438501.92	645134.79	N 32 12 18.26	W 103 59 51.87
	6528.00	14.15	223.72	6517.73	-68.96	-77.93	-74.61	1.57	438486.08	645119.50	N 32 12 18.11	W 103 59 52.05
	6622.00	14.46	218.53	6608.82	-82.97	-95.40	-89.88	1.38	438468.61	645104.23	N 32 12 17.94	W 103 59 52.23
	6717.00	13.64	216.68	6700.98	-95.75	-113.65	-103.97	1.00	438450.36	645090.14	N 32 12 17.76	W 103 59 52.39
	6812.00	14.36	212.13	6793.16	-107.35	-132.61	-116.93	1.36	438431.40	645077.18	N 32 12 17.57	W 103 59 52.55
	6859.00	14.18	208.59	6838.71	-112.49	-142.60	-122.78	1.90	438421.41	645071.33	N 32 12 17.47	W 103 59 52.61
	6907.00	13.69	197.26	6885.31	-116.23	-153.19	-127.28	5.77	438410.82	645066.83	N 32 12 17.37	W 103 59 52.67
	7002.00	13.32	198.33	6977.66	-121.14	-174.43	-133.70	0.45	438389.59	645060.42	N 32 12 17.16	W 103 59 52.74
	7097.00	11.00	183.27	7070.55	-123.36	-193.99	-137.29	3.77	438370.03	645056.82	N 32 12 16.96	W 103 59 52.78
	7192.00	10.70	171.10	7163.67	-121.26	-211.75	-136.44	2.43	438352.27	645057.67	N 32 12 16.79	W 103 59 52.78
	7287.00	11.45	159.88	7257.12	-115.44	-229.32	-131.63	2.40	438334.70	645062.28	N 32 12 16.61	W 103 59 52.72
	7383.00	11.39	153.12	7351.22	-106.67	-246.72	-124.27	1.39	438317.30	645069.64	N 32 12 16.44	W 103 59 52.63
	7477.00	10.59	147.67	7443.60	-96.78	-262.30	-115.45	1.39	438301.72	645078.66	N 32 12 16.28	W 103 59 52.53
	7572.00	10.55	140.35	7536.89	-85.60	-276.37	-105.24	1.41	438287.65	645088.87	N 32 12 16.15	W 103 59 52.41
	7667.00	11.13	137.52	7630.19	-72.95	-289.83	-93.49	0.83	438274.19	645100.61	N 32 12 16.01	W 103 59 52.28
	7762.00	10.82	131.91	7723.48	-59.26	-302.55	-80.67	1.17	438261.47	645113.44	N 32 12 15.89	W 103 59 52.13
	7857.00	11.15	124.44	7816.72	-44.30	-313.70	-66.45	1.54	438250.32	645127.65	N 32 12 15.77	W 103 59 51.96
	7952.00	11.61	122.50	7909.82	-27.83	-324.12	-50.68	0.80	438239.90	645143.43	N 32 12 15.67	W 103 59 51.78
	8016.00	11.92	127.83	7972.46	-16.58	-331.69	-39.93	1.72	438232.33	645154.17	N 32 12 15.60	W 103 59 51.66
	8190.00	22.31	133.43	8138.53	23.98	-365.51	-1.65	6.04	438198.51	645192.45	N 32 12 15.26	W 103 59 51.21
	8284.00	36.98	123.28	8220.06	62.66	-393.46	35.17	16.44	438170.57	645229.26	N 32 12 14.98	W 103 59 50.78
	8379.00	47.64	114.72	8290.27	120.64	-423.93	91.14	12.73	438140.10	645285.24	N 32 12 14.68	W 103 59 50.13
	8474.00	47.07	99.30	8354.84	188.32	-444.30	157.57	11.94	438119.74	645351.65	N 32 12 14.48	W 103 59 49.36
	8569.00	47.59	89.22	8419.31	258.00	-449.45	227.05	7.82	438114.59	645421.13	N 32 12 14.42	W 103 59 48.55

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 ° ' ")
	8663 00	58 94	87 65	8475 45	332 64	-447 32	302 23	12 15	438116 72	645496 30	N 32 12 14 44	W 103 59 47 88
	8758 00	62 44	85 69	8521 95	414 98	-442 48	384 97	4 10	438121 55	645578 98	N 32 12 14 48	W 103 59 46 72
	8853 00	68 86	88 38	8561 26	500 77	-438 06	471 22	7 04	438125 97	645665 28	N 32 12 14 53	W 103 59 45 71
	8948 00	78 06	89 51	8588.43	591.33	-436.41	562 12	9 96	438127.62	645756 18	N 32 12 14 54	W 103 59 44.65
	9042 00	81 86	83 48	8604 83	683.03	-430.71	654 45	7 52	438133 32	645848 49	N 32 12 14 59	W 103 59 43.58
	9137 00	88 80	80 72	8612 56	775.60	-417.68	748 16	7 85	438146 35	645942 20	N 32 12 14 72	W 103 59 42.49
	9232 00	87 88	81 14	8615 31	868.09	-402 71	841 93	1 06	438161 32	646035 97	N 32 12 14 87	W 103 59 41.40
	9284 00	87 35	80 29	8617 48	918.65	-394.33	893 21	1 93	438169 70	646087 24	N 32 12 14 95	W 103 59 40.80
	9379 00	87 45	79 18	8621.79	1010.62	-377.42	986 59	1 17	438186 61	646180 61	N 32 12 15 11	W 103 59 39.71
	9473 00	86 84	83 61	8626 47	1102.21	-363 37	1079 39	4 75	438200 66	646273 40	N 32 12 15 25	W 103 59 38.63
	9568 00	87 04	82 31	8631 54	1195.31	-351.75	1173 54	1 38	438212 28	646367 54	N 32 12 15 36	W 103 59 37.53
	9663 00	88 80	85 19	8634 99	1288.71	-341.41	1267 90	3 55	438222.62	646461 90	N 32 12 15 46	W 103 59 36 44
	9758 00	88 80	87 96	8636.98	1382 85	-335.74	1362 70	2 92	438228 29	646556 69	N 32 12 15 51	W 103 59 35.33
	9853 00	86 90	90 17	8638.89	1477.50	-334.19	1457 66	2 33	438229 84	646651 64	N 32 12 15 52	W 103 59 34.23
	9948 00	88 80	91 15	8640 80	1572.32	-335 28	1552 63	1 04	438228 74	646746 61	N 32 12 15 51	W 103 59 33.12
	10043 00	89 31	91 30	8642 36	1667.19	-337 31	1647 60	0 56	438226 71	646841 57	N 32 12 15 49	W 103 59 32 02
	10137 00	89 45	91 55	8643 38	1761.09	-339.85	1741 56	0 30	438224 38	646935 52	N 32 12 15 46	W 103 59 30.92
	10232 00	89 35	91 01	8644 37	1855.97	-341 77	1836 54	0 58	438222 25	647030 49	N 32 12 15 44	W 103 59 29.82
	10327 00	87 56	90 32	8646 94	1950.77	-342.68	1931 48	2 02	438221 15	647125 43	N 32 12 15 42	W 103 59 28.71
	10422 00	87 32	90 62	8651 18	2045.50	-343 65	2026 39	0 40	438220 37	647220 33	N 32 12 15 41	W 103 59 27.61
	10517 00	87 56	90 45	8655 42	2140.23	-344.54	2121 29	0 31	438219 48	647315 22	N 32 12 15 40	W 103 59 26.50
	10612 00	89 45	91 19	8657 90	2235.04	-345.90	2216 25	2 14	438218 13	647410 17	N 32 12 15 38	W 103 59 25 40
	10707 00	87 56	90 60	8660 38	2329.86	-347 38	2311 20	2 08	438216 65	647505 11	N 32 12 15 37	W 103 59 24.29
	10896 00	87 76	90 22	8666 10	2518.33	-348 73	2500 03	0 23	438215 29	647693 93	N 32 12 15 35	W 103 59 22.10
	10991 00	88 24	90 08	8671 41	2613.05	-348.88	2594 88	0 53	438215 05	647788 87	N 32 12 15 34	W 103 59 20 99
	11086 00	88 25	89 97	8674 32	2707.78	-349.02	2689 93	0 12	438215 00	647883 81	N 32 12 15 34	W 103 59 19 89
	11181 00	89 55	90 89	8676 14	2802.57	-349.74	2784 91	1 68	438214 29	647978 78	N 32 12 15 33	W 103 59 18.78
	11275 00	89 28	90 21	8677 10	2896.39	-350.64	2878 90	0 78	438213 39	648072 77	N 32 12 15 32	W 103 59 17.68
	11370 00	89 52	90 35	8678 10	2991.19	-351 10	2973 89	0 28	438212 92	648167 75	N 32 12 15 31	W 103 59 16.58
	11465 00	89 48	90 10	8678 93	3085.98	-351 48	3068 89	0 27	438212 55	648262 74	N 32 12 15 30	W 103 59 15 48
	11560 00	89 00	89 90	8680 19	3180.73	-351.48	3163 88	0 55	438212 55	648357 72	N 32 12 15 30	W 103 59 14.37
	11655 00	89 24	90 29	8681 65	3275.50	-351.63	3258 87	0 48	438212 39	648452 70	N 32 12 15 30	W 103 59 13.27
	11750.00	89 31	90 29	8682 85	3370 29	-352 12	3353 86	0 07	438211 91	648547 69	N 32 12 15.29	W 103 59 12 16
	11844 00	88 66	89 32	8684 51	3464 02	351 80	3447 84	1 24	438212.23	648641 66	N 32 12 15.29	W 103 59 11 07
	12034.00	89 18	89 92	8686 10	3653 42	-350 54	3637 80	0 42	438213.49	648831 61	N 32 12 15.29	W 103 59 8 86
	12129.00	88 59	89 60	8689 94	3748 14	-350 14	3732 78	0 71	438213.89	648926 58	N 32 12 15.29	W 103 59 7 75
	12319.00	89 38	90 04	8693 31	3937 60	-349 54	3922 75	0 48	438214.49	649116 53	N 32 12 15.29	W 103 59 5 54
	12413.00	88 83	90 32	8694 78	4031 38	-349 84	4016 74	0 66	438214 19	649210 51	N 32 12 15.29	W 103 59 4 45
	12508.00	89 14	90 37	8696 46	4126 17	-350 41	4111 72	0 33	438213.62	649305 49	N 32 12 15.28	W 103 59 3 34
	12603.00	89 07	90 13	8697 94	4220 95	-350 82	4206 71	0 26	438213.21	649400 47	N 32 12 15.27	W 103 59 2.23
	12698.00	90 34	90 56	8698 43	4315.75	-351 39	4301 70	1 41	438212.63	649495 46	N 32 12 15.26	W 103 59 1 13
	12793.00	89 21	90 00	8698 81	4410 55	-351 86	4396 70	1 33	438212.17	649590 44	N 32 12 15.26	W 103 59 0 02
	12888 00	89 28	90 27	8700 06	4505 32	-352 08	4491 69	0 29	438211 95	649685 43	N 32 12 15.25	W 103 58 58 92
	13077.00	89 28	90 02	8702 43	4693 87	-352 56	4680 67	0 13	438211 47	649874 40	N 32 12 15.24	W 103 58 56 72
	13172.00	89 24	90 15	8703 66	4788 64	-352 70	4775 67	0 14	438211 33	649969 38	N 32 12 15.24	W 103 58 55.61
	13267.00	88 80	91 15	8705 29	4883 46	-353 78	4870 65	1 15	438210.25	650064 35	N 32 12 15.22	W 103 58 54 51
Final MWD Survey	13318.00	87 76	89 22	8706 82	4934 32	-353 94	4921 62	4 30	438210 08	650115 32	N 32 12 15.22	W 103 58 53 91
Proj to bit	13360.00	87 76	89 22	8708 46	4976 14	-353 37	4963 58	0 00	438210.66	650157 28	N 32 12 15.22	W 103 58 53 43

Survey Type: Def 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)	(in)	Survey Tool Type	Borehole / Survey
	1	0 000	26 500	Act Stns	30 000	30 000	NAL_MWD_PLUS_0 5_DEG Depth Only	Original Borehole : Oxy Cedar Canyon 21 Federal Com 23H MWD 0-13,360'
	1	26 500	500 000	1/98 425	30 000	30 000	NAL_MWD_PLUS_0 5_DEG	Original Borehole : Oxy Cedar Canyon 21 Federal Com 23H
	1	500 000	13360 000	Act Stns	30 000	30 000	NAL_MWD_PLUS_0 5_DEG	Original Borehole : Oxy Cedar Canyon 21 Federal Com 23H