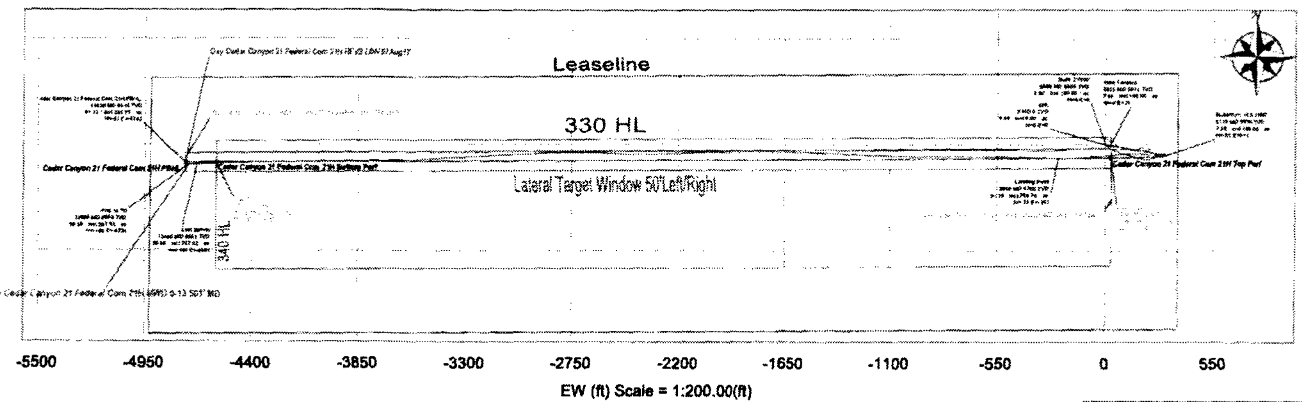
Final PVA - Rev3 30-015-44181 H&P 656 (RKB=26.5ft)

Schlumberger

OXY

Borehole: Original Borehole
Well: Oxy Cedar Canyon 21 Federal Com 21H
Field: NM Eddy County (NAD 83)
Structure: Oxy Cedar Canyon 21 Federal Com 21H

Gravity & Magnetic Parameters						Surface Location		NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model:	HDGM 2017	Dip:	60.816°	Date:	15-Aug-2017	Lat:	N 32 12 33.37	Northing:	440044.30RUS	Grid Conv:	0.1872°	Slot:	Oxy Cedar Canyon 21 Federal Com 21H	TVD Ref:	RKB=26.5ft(2954.7ft above MSL)
MagDec:	7.145°	FS:	48097.372nT	Gravity FS:	998.488mgn (9.80665 Based)	Lon:	W 103 58 55.41	Easting:	649980.80RUS	Scale Fact:	0.99992251	Plan:	Oxy Cedar Canyon 21 Federal Com 21H REV3 LBH 07Aug17		



Surface Location

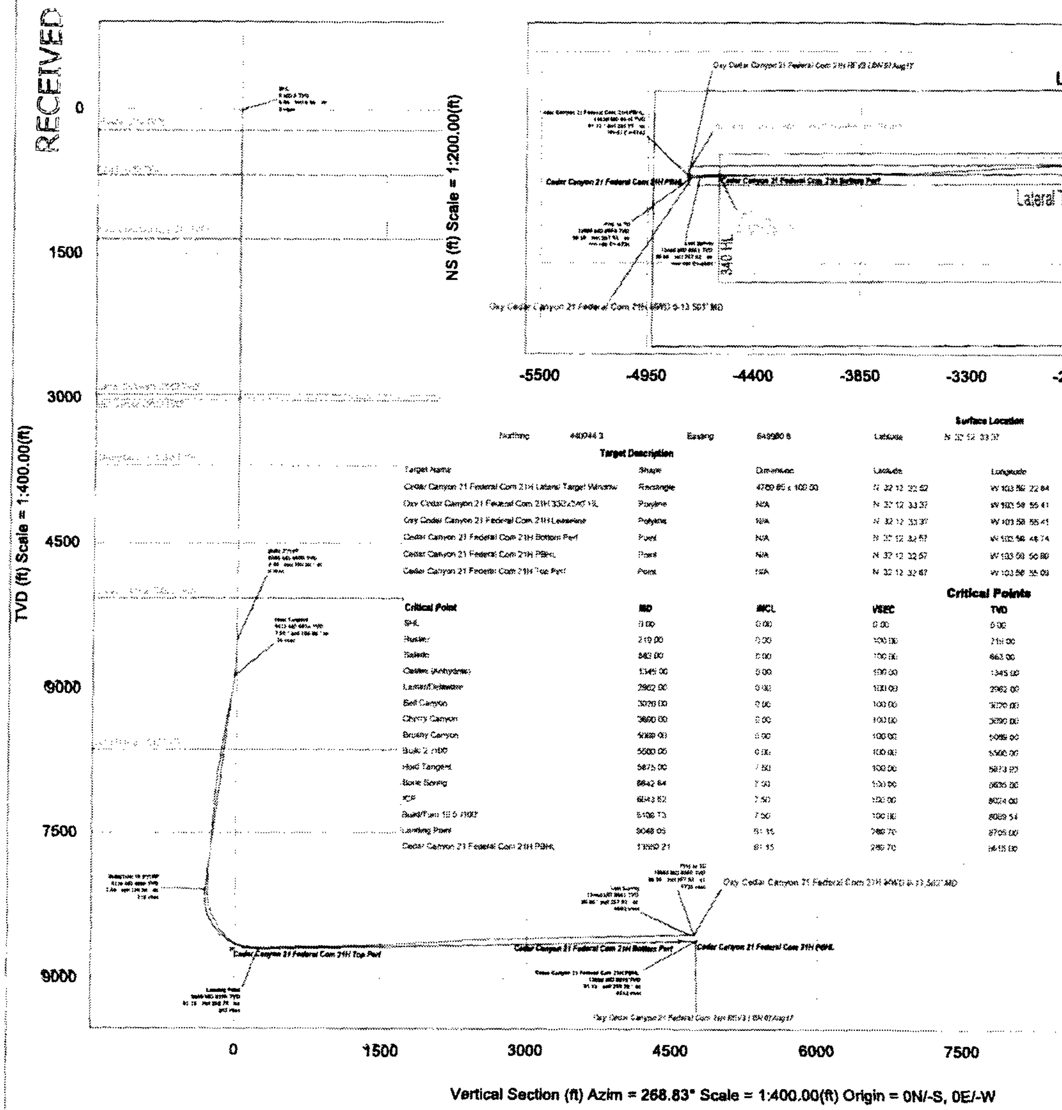
Northing	440044.3	Easting	649980.8	Latitude	N 32 12 33.37	Longitude	W 103 58 55.41	VSec Azimuth	268.83

Target Description / **Grid Coord**

Target Name	Shape	Dimension	Latitude	Longitude	Northing	Easting	TVD	VSec
Cedar Canyon 21 Federal Com 21H Lateral Target Window	Rectangle	4780.85 x 100.50	N 32 12 32.62	W 103 58 22.84	439980.60	647824.10	-1000.00	2358.10
Oxy Cedar Canyon 21 Federal Com 21H 330x340 HL	Polyline	N/A	N 32 12 33.37	W 103 58 55.41	440044.30	649980.80	2954.70	0.00
Oxy Cedar Canyon 21 Federal Com 21H Leaseline	Polyline	N/A	N 32 12 33.37	W 103 58 55.41	440044.30	649980.80	2954.70	0.00
Cedar Canyon 21 Federal Com 21H Bottom Perf	Point	N/A	N 32 12 32.57	W 103 58 48.74	439948.70	645389.40	8615.00	4542.76
Cedar Canyon 21 Federal Com 21H PBHL	Point	N/A	N 32 12 32.57	W 103 58 50.80	439947.80	645239.40	8615.00	4742.76
Cedar Canyon 21 Federal Com 21H Top Perf	Point	N/A	N 32 12 32.67	W 103 58 55.03	439973.40	650001.60	8705.00	-26.55

Critical Points

Critical Point	MD	INCL	VSEC	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	219.00	0.00	100.00	219.00	0.00	0.00	0.00	0.00
Salado	563.00	0.00	100.00	663.00	0.00	0.00	0.00	0.00
Castile (Anhydrite)	1345.00	0.00	100.00	1345.00	0.00	0.00	0.00	0.00
Lamar/Delaware	2962.00	0.00	100.00	2962.00	0.00	0.00	0.00	0.00
Bell Canyon	3020.00	0.00	100.00	3020.00	0.00	0.00	0.00	0.00
Cherry Canyon	3890.00	0.00	100.00	3890.00	0.00	0.00	0.00	0.00
Brushy Canyon	5069.00	0.00	100.00	5069.00	0.00	0.00	0.00	0.00
Build 2 /100	5500.00	0.00	100.00	5500.00	0.00	0.00	0.00	0.00
Hold Tangent	5875.00	7.50	100.00	5873.93	24.04	-4.32	24.14	2.00
Bone Spring	6642.64	7.50	100.00	6635.00	-122.34	-21.65	122.81	0.00
KOP	8043.82	7.50	100.00	8024.00	-301.25	-53.41	302.91	0.00
Build/Turn 10.5 /100	8108.73	7.50	100.00	8089.54	-310.21	-54.91	311.65	0.00
Landing Point	9048.05	91.35	269.70	8705.00	-242.01	-72.63	240.50	10.50
Cedar Canyon 21 Federal Com 21H PBHL	13889.21	91.35	269.70	8615.00	4742.76	-56.51	-4741.78	0.00



Rustler (219 TVD)
Salado (563 TVD)
Castile (Anhydrite) (1345 TVD)
Lamar/Delaware (2962 TVD)
Bell Canyon (3020 TVD)
Cherry Canyon (3890 TVD)
Brushy Canyon (5069 TVD)
Bone Spring (6635 TVD)

Grid North
Tot Corr (M->G 6.958°)
Mag Dec (7.145°)
Grid Conv (0.187°)

CONTROLLED

1	Originator
2	DE Sign Off Authority
3	D&M Line Manager
4	Client

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 32.20927 W -103.98206

I, Kurt Valentine certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of August 18, 2017 through August 27, 2017, conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 495.00 feet to a depth of 13460.00 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 21 Fed Com 21H Well (Original Hole) API No. 30-015-44181 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
Kurt Valentine
FS

Subscribed and Sworn to before me this 8th day of September (month) 2017 (yr)

My Commission expires:
12-20-2020

(signature) Notary Public

Notary Public
Adams County Colorado
(County State)

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

Schlumberger

Oxy Cedar Canyon 21 Federal Com 21H MWD 0-13,503' MD Survey
Geodetic Report
(Def Survey)

Report Date:	August 31, 2017 - 12:44 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	268.834 ° (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 21H / Oxy Cedar Canyon 21 Federal Com 21H	**TVD Reference Datum:**	RKB=26.5'
Well:	Oxy Cedar Canyon 21 Federal Com 21H	**TVD Reference Elevation:**	2954.700 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	2928.200 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.145 °
Survey Name:	Oxy Cedar Canyon 21 Federal Com 21H MWD 0-13,503' MD	**Total Gravity Field Strength:**	998.4893mgn (9.80665 Based)
Survey Date:	August 15, 2017	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	192.144 ° / 5348.843 ft / 6.203 / 0.615	**Total Magnetic Field Strength:**	48097.972 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.016 °
Location Lat / Long:	N 32° 12' 33.37447", W 103° 58' 55.41004"	**Declination Date:**	August 15, 2017
Location Grid N/E Y/X:	N 440044.300 ftUS, E 649980.800 ftUS	**Magnetic Declination Model:**	HDGM 2017
CRS Grid Convergence Angle:	0.1872 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99992261	**Grid Convergence Used:**	0.1872 °
Version / Patch:	2.10.544.0	**Total Corr Mag North->Grid North:**	6.9582 °
		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	440044.30	649980.80	N 32 12 33.37	W 103 58 55.41
	495.00	0.84	44.31	494.98	-2.59	2.60	2.53	0.17	440046.90	649983.33	N 32 12 33.40	W 103 58 55.38
	860.00	0.13	238.46	679.98	-3.37	3.46	3.30	0.52	440047.76	649984.10	N 32 12 33.41	W 103 58 55.37
	863.00	0.13	233.26	862.98	-3.02	3.22	2.95	0.01	440047.52	649983.76	N 32 12 33.41	W 103 58 55.38
	955.00	0.13	202.53	954.98	-2.90	3.07	2.84	0.07	440047.37	649983.64	N 32 12 33.40	W 103 58 55.38
	1045.00	0.13	170.78	1044.98	-2.87	2.87	2.81	0.08	440047.17	649983.61	N 32 12 33.40	W 103 58 55.38
	1136.00	0.08	239.70	1135.98	-2.83	2.74	2.78	0.14	440047.04	649983.57	N 32 12 33.40	W 103 58 55.38
	1228.00	0.16	38.52	1227.98	-2.85	2.81	2.80	0.26	440047.11	649983.60	N 32 12 33.40	W 103 58 55.38
	1414.00	0.17	223.13	1413.98	-2.82	2.81	2.76	0.18	440047.11	649983.56	N 32 12 33.40	W 103 58 55.38
	1508.00	0.18	266.31	1507.97	-2.57	2.70	2.52	0.14	440047.00	649983.32	N 32 12 33.40	W 103 58 55.38
	1603.00	0.32	247.07	1602.97	-2.18	2.59	2.13	0.17	440046.89	649982.93	N 32 12 33.40	W 103 58 55.39
	1698.00	0.38	232.79	1697.97	-1.68	2.30	1.63	0.11	440046.60	649982.43	N 32 12 33.40	W 103 58 55.39
	1868.00	0.40	351.76	1887.97	-1.09	2.57	1.03	0.35	440046.87	649981.83	N 32 12 33.40	W 103 58 55.40
	1982.00	0.79	283.65	1981.97	-0.42	3.05	0.38	0.79	440047.35	649981.18	N 32 12 33.40	W 103 58 55.41
	2077.00	0.34	269.48	2076.96	0.50	3.20	-0.56	0.49	440047.50	649980.24	N 32 12 33.41	W 103 58 55.42
	2172.00	0.29	319.98	2171.96	0.93	3.38	-1.00	0.29	440047.68	649979.80	N 32 12 33.41	W 103 58 55.42
	2266.00	0.30	190.65	2265.96	1.13	3.32	-1.20	0.57	440047.62	649979.60	N 32 12 33.41	W 103 58 55.42
	2361.00	0.18	267.28	2360.96	1.33	3.07	-1.39	0.33	440047.37	649979.41	N 32 12 33.40	W 103 58 55.43
	2456.00	0.30	277.12	2455.96	1.72	3.10	-1.79	0.13	440047.40	649979.01	N 32 12 33.41	W 103 58 55.43
	2550.00	0.08	102.21	2549.96	1.90	3.11	-1.97	0.40	440047.41	649978.83	N 32 12 33.41	W 103 58 55.43
	2740.00	0.18	240.24	2739.96	2.04	2.94	-2.10	0.13	440047.24	649978.70	N 32 12 33.40	W 103 58 55.43
	2834.00	0.25	108.30	2833.96	1.97	2.80	-2.03	0.42	440047.10	649978.77	N 32 12 33.40	W 103 58 55.43
	2929.00	0.22	12.82	2928.96	1.73	2.91	-1.79	0.37	440047.21	649979.01	N 32 12 33.40	W 103 58 55.43
	3024.00	0.17	130.04	3023.96	1.58	3.00	-1.64	0.35	440047.30	649979.18	N 32 12 33.40	W 103 58 55.43
	3119.00	0.16	265.93	3118.96	1.62	2.95	-1.66	0.36	440047.25	649979.12	N 32 12 33.40	W 103 58 55.43
	3213.00	0.23	338.42	3212.95	1.83	3.15	-1.89	0.20	440047.46	649978.91	N 32 12 33.41	W 103 58 55.43
	3308.00	0.18	248.25	3307.95	2.03	3.29	-2.10	0.31	440047.59	649978.70	N 32 12 33.41	W 103 58 55.43
	3498.00	0.18	84.41	3497.95	2.01	3.20	-2.08	0.19	440047.50	649978.72	N 32 12 33.41	W 103 58 55.43
	3593.00	0.18	9.81	3592.95	1.84	3.37	-1.91	0.23	440047.67	649978.89	N 32 12 33.41	W 103 58 55.43
	3687.00	0.16	42.48	3686.95	1.71	3.62	-1.78	0.11	440047.92	649979.02	N 32 12 33.41	W 103 58 55.43
	3782.00	0.18	126.28	3781.95	1.49	3.64	-1.56	0.25	440047.94	649979.24	N 32 12 33.41	W 103 58 55.43
	3877.00	0.18	332.99	3876.95	1.43	3.69	-1.51	0.37	440047.99	649979.29	N 32 12 33.41	W 103 58 55.43
	4066.00	0.18	59.35	4065.95	1.30	4.10	-1.39	0.13	440048.40	649979.41	N 32 12 33.42	W 103 58 55.43
	4161.00	0.23	15.29	4160.95	1.12	4.36	-1.21	0.17	440048.66	649979.59	N 32 12 33.42	W 103 58 55.42
	4350.00	0.17	78.04	4349.95	0.74	4.78	-0.83	0.11	440049.08	649979.97	N 32 12 33.42	W 103 58 55.42
	4540.00	0.17	341.04	4539.95	0.54	5.10	-0.65	0.14	440049.40	649980.15	N 32 12 33.42	W 103 58 55.42
	4729.00	0.23	326.24	4728.95	0.82	5.69	-0.94	0.04	440049.99	649979.86	N 32 12 33.43	W 103 58 55.42
	4918.00	0.11	314.30	4917.95	1.14	6.14	-1.27	0.07	440050.44	649979.53	N 32 12 33.44	W 103 58 55.42
	5013.00	0.22	269.73	5012.95	1.39	6.20	-1.52	0.17	440050.50	649979.28	N 32 12 33.44	W 103 58 55.43
	5107.00	0.18	261.89	5106.95	1.72	6.18	-1.84	0.05	440050.48	649978.96	N 32 12 33.44	W 103 58 55.43
	5202.00	0.08	84.65	5201.95	1.80	6.19	-1.93	0.27	440050.49	649978.87	N 32 12 33.44	W 103 58 55.43
	5297.00	0.11	157.77	5296.95	1.71	6.13	-1.84	0.15	440050.43	649978.96	N 32 12 33.44	W 103 58 55.43
	5391.00	1.38	183.45	5390.94	1.77	4.93	-1.87	1.34	440049.23	649978.93	N 32 12 33.42	W 103 58 55.43
	5486.00	2.45	190.66	5485.89	0.93	2.04	-0.94	1.58	440046.34	649979.86	N 32 12 33.38	W 103 58 55.42
	5580.00	3.70	136.79	5579.75	-2.08	-1.92	2.12	1.54	440042.38	649982.92	N 32 12 33.36	W 103 58 55.39
	5675.00	4.47	133.98	5674.51	-6.74	-6.73	6.88	0.84	440037.57	649987.68	N 32 12 33.31	W 103 58 55.33
	5769.00	5.65	126.08	5768.14	-13.01	-12.00	13.26	1.48	440032.31	649994.06	N 32 12 33.26	W 103 58 55.26
	5864.00	7.03	124.88	5862.56	-21.44	-18.07	21.81	1.48	440026.23	650002.61	N 32 12 33.19	W 103 58 55.16
	5959.00	9.35	118.05	5956.59	-32.87	-25.03	33.39	2.64	440019.27	650014.19	N 32 12 33.13	W 103 58 55.02
	6053.00	11.10	114.87	6049.09	-47.67	-32.42	48.34	1.96	440011.88	650029.14	N 32 12 33.05	W 103 58 54.85
	6148.00	11.74	113.35	6142.21	-64.68	-40.10	65.51	0.74	440004.20	650046.31	N 32 12 32.98	W 103 58 54.65
	6243.00	10.79	111.08	6235.38	-81.71	-47.13	82.68	1.11	439997.18	650063.48	N 32 12 32.91	W 103 58 54.45
	6337.00	10.47	107.56	6327.77	-97.94	-52.87	99.04	0.77	439991.44	650079.83	N 32 12 32.85	W 103 58 54.26
	6432.00	10.52	105.32	6421.18	-114.43	-57.76	115.63	0.43	439986.54	650096.42	N 32 12 32.80	W 103 58 54.07
	6526.00	9.85	103.70	6513.69	-130.43	-61.93	131.72	0.78	439982.37	650112.51	N 32 12 32.76	W 103 58 53.88
	6621.00	9.73	102.45	6607.31	-146.09	-65.59	147.45	0.26	439978.72	650128.24	N 32 12 32.72	W 103 58 53.70
	6716.00	9.78	103.49	6700.94	-161.70	-69.20	163.14	0.19	439975.10	650143.92	N 32 12 32.68	W 103 58 53.51
	6810.00	9.87	102.66	6793.56	-177.24	-72.83	178.76	0.18	439971.47	650159.55	N 32 12 32.65	W 103 58 53.33
	6905.00	8.61	102.93	6887.32	-192.04	-76.21	193.64	1.33	439968.10	650174.42	N 32 12 32.61	W 103 58 53.16
	6999.00	6.63	101.28	6980.49	-204.17	-78.84	205.82	2.12	439965.46	650186.60	N 32 12 32.59	W 103 58 53.02
	7094.00	4.58	84.18	7075.04	-213.31	-79.53	214.97	2.76	439964.77	650195.75	N 32 12 32.58	W 103 58 52.91
	7188.00	3.57	60.33	7168.80	-219.62	-77.70	221.25	2.08	439966.60	650202.03	N 32 12 32.60	W 103 58 52.84
	7283.00	4.08	69.02	7263.59	-225.40	-75.03	226.97	0.81	439969.28	650207.76	N 32 12 32.62	W 103 58 52.77
	7378.00	4.23	75.80	7358.34	-231.99	-72.96	233.53	0.54	439971.35	650214.31	N 32 12 32.64	W 103 58 52.69
	7472.00	4.98	66.71	7452.04	-239.15	-70.50	240.63	1.11	439973.81	650221.41	N 32 12 32.67	W 103 58 52.61
	7567.00	5.21	58.73	7546.67	-246.70	-66.63	248.11	0.78	439977.68	650228.89	N 32 12 32.71	W 103 58 52.52
	7662.00	5.56	59.16	7641.25	-254.43	-62.03	255.75	0.37	439982.28	650236.53	N 32 12 32.75	W 103 58 52.44
	7757.00	6.12	67.44	7735.76	-263.15	-57.73	264.37	1.06	439986.58	650245.15	N 32 12 32.79	W 103 58 52.34
	7801.00	5.84	67.67	7779.52	-267.42	-55.98	268.61	0.64	439988.33	650249.39	N 32 12 32.81	W 103 58 52.29
	7916.00	4.96	66.40	7894.01	-277.47	-51.76	278.58	0.77	439992.54	650259.36	N 32 12 32.85	W 103 58 52.17
	8012.00	1.51	31.58	7989.84	-281.99	-49.02	283.05	3.98	439995.28	650263.82	N 32 12 32.88	W 103 58 52.12
	8120.00	1.28	39.44	8097.81	-283.54	-46.88	284.58	0.28	439997.43	650265.33	N 32 12 32.90	W 103 58 52.10
	8204.00	3.96	233.66	8181.76	-281.79	-47.88	282.82	6.20	439996.43	650263.60	N 32 12 32.89	W 103 58 52.12
	8299.00	18.90	260.05	8274.65	-283.79	-52.51	284.92	16.27	439991.79	650265.69	N 32 12 32.85	W 103 58 52.33
	8394.00	20.70	272.78	8364.07	-231.82	-54.36	232.97	4.91	439989.95	650213.75	N 32 12 32.83	W 103 58 52.70
	8489.00	30.44	276.89	8449.67	-191.14	-50.65	192.21	10.42	439993.66	650173.00	N 32 12 32.87	W 103 58 53.17
	8584.00	39.11	288.66	8527.67	-137.22	-46.46	138.23	10.36	439995.85	650119.02	N 32 12 32.89	W 103 58 53.80
	8679.00	49.67	283.91	8595.48	-70.97	-53.01	72.06	11.65	439991.29	650052.86	N 32 12 32.85	W 103 58 54.57

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 ° ' ")
	8774.00	63.83	266.04	8647.44	8.10	-59.83	-6.88	15.02	439984.47	649973.92	N 32 12 32.78	W 103 58 55.49
	8869.00	78.12	264.60	8678.33	97.50	-67.19	-96.15	15.11	439977.12	649884.65	N 32 12 32.71	W 103 58 56.53
	8964.00	86.39	268.45	8691.13	191.46	-72.86	-190.02	9.59	439971.45	649790.80	N 32 12 32.66	W 103 58 57.62
	9027.00	90.76	271.22	8692.89	254.41	-73.04	-252.97	8.21	439971.27	649727.85	N 32 12 32.66	W 103 58 58.36
	9075.00	92.41	272.81	8691.37	302.31	-71.35	-300.92	4.77	439972.95	649679.90	N 32 12 32.68	W 103 58 58.92
	9170.00	91.34	271.02	8688.26	397.12	-68.18	-395.81	2.19	439976.13	649585.02	N 32 12 32.71	W 103 58 0.02
	9263.00	91.13	270.69	8686.25	490.04	-66.79	-488.78	0.42	439977.51	649492.06	N 32 12 32.73	W 103 59 1.10
	9361.00	91.31	270.93	8684.17	587.96	-65.41	-586.75	0.31	439978.90	649394.10	N 32 12 32.75	W 103 59 2.24
	9456.00	91.00	270.22	8682.25	682.90	-64.45	-681.72	0.82	439979.85	649299.13	N 32 12 32.76	W 103 59 3.35
	9551.00	90.69	269.72	8680.85	777.87	-64.50	-776.71	0.62	439979.80	649204.15	N 32 12 32.76	W 103 59 4.45
	9646.00	90.69	268.99	8679.71	872.85	-65.57	-871.70	0.77	439978.73	649109.17	N 32 12 32.75	W 103 59 5.56
	9740.00	91.34	271.57	8678.04	966.80	-65.11	-965.68	2.83	439979.19	649015.20	N 32 12 32.76	W 103 59 6.65
	9835.00	91.10	270.97	8676.02	1061.69	-63.01	-1060.63	0.68	439981.30	648920.25	N 32 12 32.79	W 103 59 7.76
	9930.00	91.86	272.24	8673.56	1156.55	-60.35	-1155.56	1.56	439983.96	648825.33	N 32 12 32.81	W 103 59 8.86
	10025.00	92.20	272.31	8670.20	1251.32	-56.58	-1250.42	0.37	439987.72	648730.47	N 32 12 32.85	W 103 59 9.97
	10120.00	92.10	272.98	8666.63	1346.04	-52.20	-1345.26	0.71	439992.11	648635.65	N 32 12 32.90	W 103 59 11.07
	10215.00	92.03	272.78	8663.21	1440.74	-47.43	-1440.07	0.22	439996.87	648540.84	N 32 12 32.95	W 103 59 12.17
	10310.00	92.24	272.61	8659.67	1535.48	-42.97	-1534.90	0.28	440001.34	648446.02	N 32 12 33.00	W 103 59 13.28
	10405.00	93.44	271.42	8654.97	1630.19	-39.63	-1629.72	1.78	440004.67	648351.20	N 32 12 33.03	W 103 59 14.38
	10500.00	93.10	270.29	8649.55	1724.96	-38.21	-1724.56	1.24	440006.09	648256.36	N 32 12 33.05	W 103 59 15.48
	10595.00	93.62	269.75	8643.81	1819.78	-38.18	-1819.38	0.95	440006.12	648161.56	N 32 12 33.08	W 103 59 16.59
	10690.00	93.61	268.96	8637.65	1914.58	-39.25	-1914.18	0.86	440005.06	648066.77	N 32 12 33.05	W 103 59 17.69
	10785.00	93.20	268.37	8632.01	2009.41	-41.46	-2008.98	0.76	440002.85	647971.98	N 32 12 33.03	W 103 59 18.79
	10880.00	93.30	268.22	8626.63	2104.25	-44.28	-2103.79	0.19	440000.02	647877.18	N 32 12 33.00	W 103 59 19.90
	10975.00	93.03	267.92	8621.38	2199.10	-47.47	-2198.59	0.42	439996.83	647782.39	N 32 12 32.98	W 103 59 21.00
	11070.00	94.99	268.57	8614.74	2293.86	-50.38	-2293.31	2.17	439993.93	647687.67	N 32 12 32.95	W 103 59 22.10
	11166.00	93.48	269.64	8607.85	2389.59	-51.87	-2389.03	1.93	439992.43	647591.98	N 32 12 32.94	W 103 59 23.22
	11261.00	91.69	272.16	8603.37	2484.42	-50.38	-2483.91	3.25	439993.92	647497.09	N 32 12 32.96	W 103 59 24.32
	11356.00	91.72	272.45	8600.54	2579.20	-46.56	-2578.79	0.31	439997.74	647402.21	N 32 12 33.00	W 103 59 25.43
	11451.00	91.51	270.82	8597.86	2674.05	-43.85	-2673.71	1.73	440000.45	647307.30	N 32 12 33.03	W 103 59 26.53
	11546.00	91.24	268.83	8595.58	2769.00	-44.14	-2768.68	2.11	440000.16	647212.34	N 32 12 33.03	W 103 59 27.64
	11641.00	91.24	268.70	8593.53	2863.98	-46.19	-2863.63	0.14	439998.12	647117.39	N 32 12 33.01	W 103 59 28.74
	11736.00	91.17	266.77	8591.53	2958.94	-49.94	-2958.53	2.03	439994.36	647022.50	N 32 12 32.97	W 103 59 29.85
	11831.00	91.24	266.85	8589.53	3053.86	-55.23	-3053.37	0.11	439989.08	646927.68	N 32 12 32.93	W 103 59 30.95
	11926.00	91.45	266.87	8587.30	3148.77	-60.43	-3148.20	0.22	439983.88	646832.85	N 32 12 32.88	W 103 59 32.05
	12021.00	91.82	266.50	8584.59	3243.67	-65.92	-3243.00	0.55	439978.39	646738.06	N 32 12 32.83	W 103 59 33.16
	12116.00	91.31	267.24	8582.00	3338.58	-71.11	-3337.82	0.95	439973.20	646643.24	N 32 12 32.78	W 103 59 34.26
	12211.00	91.38	267.06	8579.77	3433.51	-75.83	-3432.68	0.20	439968.48	646548.40	N 32 12 32.73	W 103 59 35.36
	12306.00	91.31	266.96	8577.54	3528.44	-80.76	-3527.52	0.13	439963.53	646453.56	N 32 12 32.69	W 103 59 36.47
	12401.00	91.24	268.88	8575.42	3623.39	-84.24	-3622.43	2.00	439960.06	646358.68	N 32 12 32.66	W 103 59 37.57
	12496.00	91.31	269.00	8573.31	3718.37	-86.02	-3717.39	0.15	439958.29	646263.70	N 32 12 32.64	W 103 59 38.68
	12591.00	91.27	268.71	8571.17	3813.35	-87.92	-3812.35	0.31	439956.39	646168.76	N 32 12 32.63	W 103 59 39.78
	12686.00	91.48	269.25	8568.89	3908.32	-89.61	-3907.30	0.61	439954.70	646073.81	N 32 12 32.61	W 103 59 40.89
	12781.00	91.72	269.56	8566.24	4003.26	-90.59	-4002.26	0.41	439953.71	645978.86	N 32 12 32.61	W 103 59 41.99
	12876.00	91.27	269.03	8563.78	4098.24	-91.76	-4097.22	0.73	439952.55	645883.90	N 32 12 32.60	W 103 59 43.10
	12971.00	90.76	268.34	8562.08	4193.22	-93.94	-4192.18	0.90	439950.37	645788.95	N 32 12 32.58	W 103 59 44.21
	13066.00	91.51	269.44	8560.19	4288.20	-95.78	-4287.14	1.40	439948.53	645694.00	N 32 12 32.56	W 103 59 45.31
	13161.00	92.41	270.08	8556.94	4383.13	-96.18	-4382.08	1.16	439948.13	645599.06	N 32 12 32.56	W 103 59 46.42
	13256.00	90.17	267.89	8554.81	4478.10	-97.85	-4477.03	3.30	439946.45	645504.12	N 32 12 32.55	W 103 59 47.52
	13351.00	91.65	268.44	8553.30	4573.08	-100.90	-4571.97	1.66	439943.40	645409.19	N 32 12 32.52	W 103 59 48.63
	13446.00	91.17	268.24	8550.96	4668.04	-103.66	-4666.90	0.55	439940.65	645314.27	N 32 12 32.50	W 103 59 49.73
Last Survey	13460.00	90.58	267.93	8550.75	4682.04	-104.12	-4680.89	4.76	439940.19	645300.28	N 32 12 32.49	W 103 59 49.89
Proj. to TD	13503.00	90.58	267.93	8550.31	4725.03	-105.68	-4723.86	0.00	439938.63	645257.31	N 32 12 32.48	W 103 59 50.39

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 (in)	Casing Diameter (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 21H MWD 0-13,503' MD
	1	26.500	495.000	1/98.425	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Cedar Canyon 21 Federal Com 21H
	1	495.000	13503.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Cedar Canyon 21 Federal Com 21H