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

15-43844

November 3, 2016

OXY USA INC.
5 Greenway Plaza, Suite 110
Houston, TX 77046-052

16, T24S, R29E, Eddy NM
N 32.22365 W 103.98407

Re:
CLIENT: OXY USA INC.
WELL: Cedar Canyon 16 State 33H
FIELD: Pierce Crossing, Bone Spring East

RIG: H&P 617
COUNTY: Eddy
API NO: 30-015-43844
JOB NO: 16MLD2099

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.

Name & Title of Surveyor	Drainhole Number	Surveyed Depths		Dates Performed		Type of Survey
Tamer Ahmed FE	Cedar Canyon 16 State 33H Original Hole	513.00 Ft 14657.00 Ft	to	October 16, 2016 October 31, 2016	to	TelePacer SlimPulse

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

Lindsey Keith
Field Service Manager

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

Well Reference:
16, T24S, R29E, Eddy NM
N 32.22365 W 103.98407

I, Tamer Ahmed certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of October 16, 2016 through October 31, 2016, conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 513.00 feet to a depth of 14657.00 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 16 State 33H Well (Original Hole) API No. 30-015-43844 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
Tamer Ahmed
FE

Tamer Ahmed

Subscribed and Sworn to before me this 8 **day of** November **(month)** 2016 **(yr)**

My Commission expires:
5/2/20

Jordyn Nichols
Notary Public

Harris, Texas
(County State)

(signature)

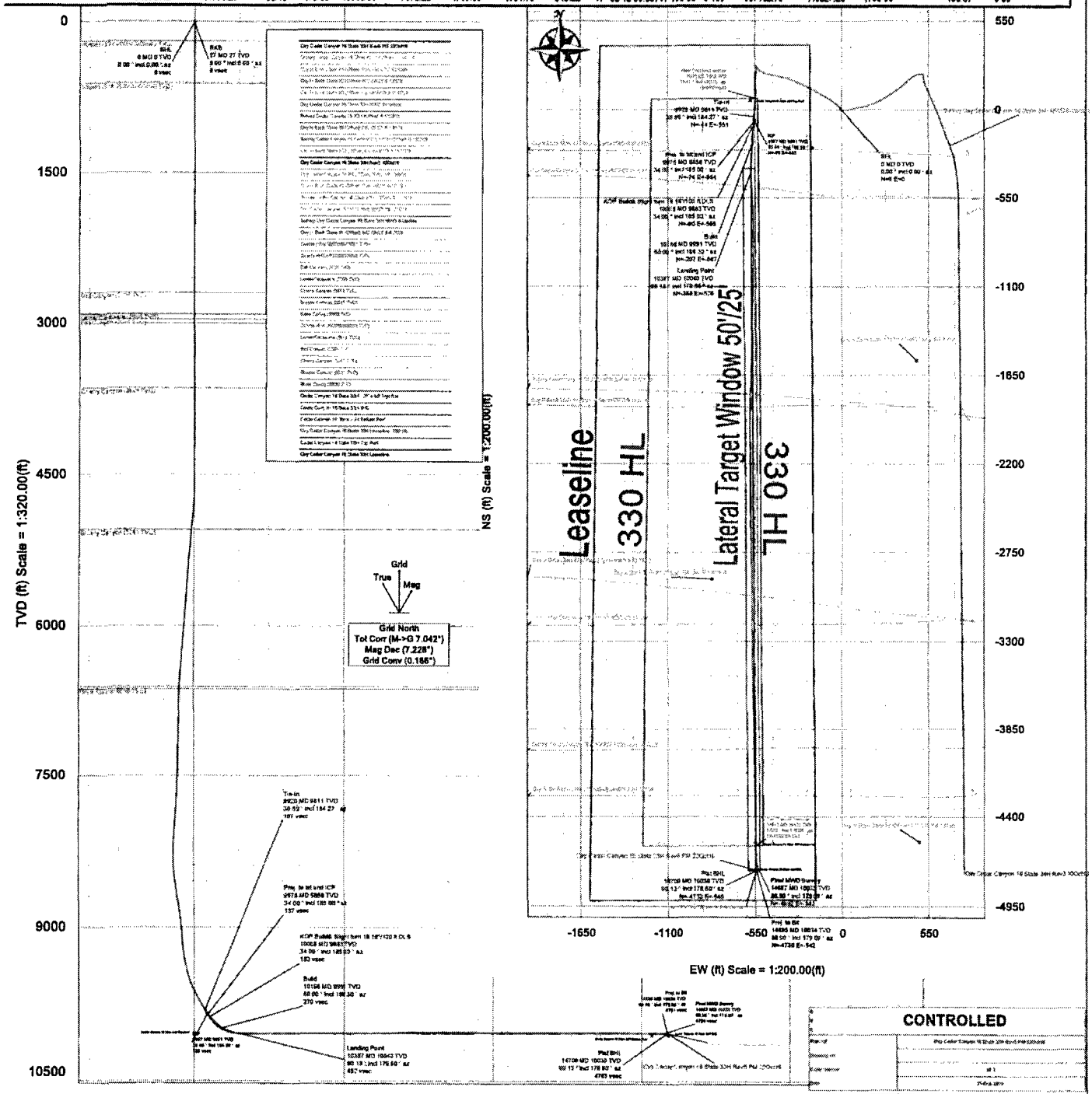
JORDYN NICHOLS
Notary ID # 130644686
My Commission Expires
May 2, 2020

Schlumberger Final PvA - Rev5 OXY H&P 617 RKB = 26.5 ft

Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Cedar Canyon 16 State 33H	NM Eddy County (NAD 27)	Oxy Cedar Canyon 16 State 33H

Gravity & Magnetic Parameters					Surface Location		NAD27 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous		
Model:	HDGM 2015	Dip:	60.979°	Date:	21-Oct-2015	Lat:	N 32 13 25.14	Northing:	445258.88ftUS	Grid Conv:	0.1862°	Slot:	Oxy Cedar Canyon 16 State 33H TVD Ref: RKB=26.5'(2953.86' above MSL)
MagDec:	7.228°	FS:	48197.743nT	Gravity FS:	998.471mgn (9.80665 Based)	Lon:	W 103 59 2.84	Easting:	699667.38ftUS	Scale Fact:	0.99992245	Plan:	Oxy Cedar Canyon 16 State 33H Rev5 Pld 22Oct15

Comments	Survey MD(ft)	Inclination (deg)	Azimuth (deg)	TVD(ft)	Vertical Section (ft)	NS(ft)	EW(ft)	Latitude(NAD27)	Longitude(NAD27)	Easting(USft)	Northing(USft)	Closure	Closure Azimuth(deg)	DLS(deg/100ft)	Tool Face(deg)
Tie-In	9920.00	30.59	184.27	9811.14	6857.34	107.24	-44.43	-551.31	N 32 13 24.720 N	103 59 9.054	607456.62	445214.26	553.10	265.39	1.15	6.30
KOP	9966.57	33.48	184.90	9850.62	6896.82	131.93	-69.05	-553.29	N 32 13 24.477 N	103 59 9.078	607454.64	445189.64	557.58	262.89	6.24	6.83
Proj. to bit and ICP	9975.00	34.00	185.00	9857.63	6903.83	136.61	-73.71	-553.69	N 32 13 24.431 N	103 59 9.083	607454.23	445184.98	558.58	262.42	6.24	0.00
KOP Build& Slight turn 16.16°/100 ft DLS	10065.00	34.00	185.00	9882.50	6928.70	153.38	-90.42	-555.15	N 32 13 24.265 N	103 59 9.101	607452.77	445168.26	562.47	260.75	0.00	2.57
Build	10165.99	60.00	186.30	9991.36	7037.56	270.09	-206.56	-566.93	N 32 13 23.117 N	103 59 9.242	607441.00	445052.14	603.39	249.98	16.16	-13.17
Landing Point	10356.59	90.13	179.60	10039.97	7086.17	451.61	-388.28	-575.53	N 32 13 21.319 N	103 59 9.349	607432.40	444870.43	694.26	235.99	16.16	0.00
Plat BHL	14700.20	90.13	179.60	10030.00	7076.20	4763.08	-4731.78	-545.22	N 32 12 38.337 N	103 59 9.160	607462.70	440527.28	4763.08	186.57	0.00	



Vertical Section (ft) Azim = 186.573° Scale = 1:320.00(ft) Origin = 0N/-S, 0E/-W

CONTROLLED

1	Originator	Price Maxwell
2	DE Sign Off Authority	
3	D&M Line Manager	Joel Dunn
4	Client	Oxy

Schlumberger

Oxy Cedar Canyon 16 State 33H MWD 0-14695 ftMD Survey Geodetic Report

(Def Survey)

Report Date:	October 31, 2016 - 02:44 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	186.573 ° (Grid North)
Field:	NM Eddy County (NAD 27)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Cedar Canyon 16 State 33H / Oxy Cedar Canyon 16 State 33H	**TVD Reference Datum:**	RKB=26.5'
Well:	Oxy Cedar Canyon 16 State 33H	**TVD Reference Elevation:**	2953.800 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	2927.300 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.234 °
Survey Name:	Oxy Cedar Canyon 16 State 33H MWD 0-14695 ftMD	**Total Gravity Field Strength:**	998.4710mgn (9.80665 Based)
Survey Date:	September 29, 2016	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	203.082 ° / 5631.498 ft / 6.224 / 0.561	**Total Magnetic Field Strength:**	48204.286 nT
Coordinate Reference System:	NAD27 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.080 °
Location Lat / Long:	N 32° 13' 25.14231", W 103° 59' 2.63528"	**Declination Date:**	September 29, 2016
Location Grid N/E Y/X:	N 445258.680 ftUS, E 608007.880 ftUS	**Magnetic Declination Model:**	HDGM 2016
CRS Grid Convergence Angle:	0.1862 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99992245	**Grid Convergence Used:**	0.1862 °
Version / Patch:	2.10.254.0	**Total Corr Mag North->Grid North:**	7.0480 °
		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	445258.68	608007.88	N	32 13 25.14 W	103 59 2.64
RKB	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	445258.68	608007.88	N	32 13 25.14 W	103 59 2.64
	513.00	0.18	154.19	513.00	0.65	-0.69	0.33	0.04	445257.99	608008.21	N	32 13 25.14 W	103 59 2.63
	604.00	0.04	3.32	604.00	0.73	-0.78	0.40	0.24	445257.90	608008.28	N	32 13 25.13 W	103 59 2.63
	694.00	0.02	237.40	694.00	0.71	-0.76	0.39	0.06	445257.92	608008.27	N	32 13 25.13 W	103 59 2.63
	784.00	0.04	169.99	784.00	0.75	-0.80	0.38	0.04	445257.88	608008.26	N	32 13 25.13 W	103 59 2.63
	875.00	0.09	55.93	875.00	0.74	-0.79	0.44	0.12	445257.89	608008.32	N	32 13 25.13 W	103 59 2.63
	965.00	0.04	70.08	965.00	0.68	-0.74	0.53	0.06	445257.94	608008.41	N	32 13 25.13 W	103 59 2.63
	1150.00	0.04	317.49	1150.00	0.61	-0.67	0.55	0.04	445258.01	608008.43	N	32 13 25.14 W	103 59 2.63
	1244.00	0.04	103.16	1244.00	0.59	-0.66	0.56	0.08	445258.02	608008.44	N	32 13 25.14 W	103 59 2.63
	1339.00	0.07	283.66	1339.00	0.58	-0.65	0.53	0.12	445258.03	608008.41	N	32 13 25.14 W	103 59 2.63
	1433.00	0.04	288.89	1433.00	0.57	-0.63	0.45	0.03	445258.05	608008.33	N	32 13 25.14 W	103 59 2.63
	1528.00	0.04	181.68	1528.00	0.60	-0.65	0.41	0.07	445258.03	608008.29	N	32 13 25.14 W	103 59 2.63
	1717.00	0.04	350.72	1717.00	0.60	-0.65	0.40	0.04	445258.03	608008.28	N	32 13 25.14 W	103 59 2.63
	1811.00	0.04	96.60	1811.00	0.57	-0.62	0.43	0.07	445258.06	608008.31	N	32 13 25.14 W	103 59 2.63
	1905.00	0.04	256.87	1905.00	0.58	-0.63	0.43	0.08	445258.05	608008.31	N	32 13 25.14 W	103 59 2.63
	2000.00	0.04	256.87	2000.00	0.60	-0.65	0.36	0.00	445258.03	608008.24	N	32 13 25.14 W	103 59 2.63
	2095.00	0.04	169.95	2095.00	0.64	-0.69	0.34	0.06	445257.99	608008.22	N	32 13 25.14 W	103 59 2.63
	2188.00	0.20	115.62	2188.00	0.73	-0.79	0.49	0.19	445257.89	608008.37	N	32 13 25.13 W	103 59 2.63
	2283.00	0.31	126.00	2283.00	0.91	-1.01	0.85	0.13	445257.67	608008.73	N	32 13 25.13 W	103 59 2.63
	2377.00	0.02	126.00	2377.00	1.04	-1.17	1.07	0.31	445257.51	608008.95	N	32 13 25.13 W	103 59 2.62
	2471.00	0.02	126.00	2471.00	1.06	-1.19	1.09	0.00	445257.49	608008.97	N	32 13 25.13 W	103 59 2.62
	2565.00	0.07	107.58	2565.00	1.08	-1.22	1.16	0.05	445257.46	608009.04	N	32 13 25.13 W	103 59 2.62
	2660.00	0.11	151.58	2660.00	1.16	-1.31	1.26	0.08	445257.37	608009.14	N	32 13 25.13 W	103 59 2.62
	2754.00	0.02	151.58	2754.00	1.25	-1.41	1.31	0.10	445257.27	608009.19	N	32 13 25.13 W	103 59 2.62
	2848.00	0.07	127.89	2848.00	1.29	-1.46	1.36	0.06	445257.22	608009.24	N	32 13 25.13 W	103 59 2.62
	3037.00	0.02	127.89	3037.00	1.37	-1.55	1.48	0.03	445257.13	608009.36	N	32 13 25.13 W	103 59 2.62
	3132.00	0.04	263.67	3132.00	1.39	-1.56	1.46	0.06	445257.12	608009.34	N	32 13 25.13 W	103 59 2.62
	3226.00	0.07	14.93	3226.00	1.34	-1.51	1.44	0.10	445257.17	608009.32	N	32 13 25.13 W	103 59 2.62
	3415.00	0.04	83.68	3415.00	1.21	-1.39	1.54	0.04	445257.29	608009.42	N	32 13 25.13 W	103 59 2.62
	3510.00	0.04	40.09	3510.00	1.17	-1.36	1.59	0.03	445257.32	608009.47	N	32 13 25.13 W	103 59 2.62
	3604.00	0.04	12.01	3604.00	1.11	-1.31	1.62	0.02	445257.37	608009.50	N	32 13 25.13 W	103 59 2.62
	3792.00	0.02	12.01	3792.00	1.01	-1.21	1.64	0.01	445257.47	608009.52	N	32 13 25.13 W	103 59 2.62
	3982.00	0.03	12.50	3982.00	0.93	-1.13	1.66	0.01	445257.55	608009.54	N	32 13 25.13 W	103 59 2.62
	4170.00	0.04	16.43	4170.00	0.82	-1.02	1.69	0.01	445257.66	608009.57	N	32 13 25.13 W	103 59 2.62
	4265.00	0.04	354.96	4265.00	0.75	-0.95	1.69	0.02	445257.73	608009.57	N	32 13 25.13 W	103 59 2.62
	4454.00	0.04	251.72	4454.00	0.72	-0.91	1.63	0.03	445257.77	608009.51	N	32 13 25.13 W	103 59 2.62
	4548.00	0.04	150.68	4548.00	0.76	-0.95	1.61	0.07	445257.73	608009.49	N	32 13 25.13 W	103 59 2.62
	4642.00	0.94	326.37	4641.99	0.19	-0.33	1.20	1.04	445258.35	608009.08	N	32 13 25.14 W	103 59 2.62
	4737.00	3.67	322.67	4736.91	-2.59	2.73	-1.08	2.88	445261.41	608006.80	N	32 13 25.17 W	103 59 2.65
	4831.00	6.44	320.30	4830.53	-8.40	9.18	-6.27	2.95	445267.86	608001.61	N	32 13 25.23 W	103 59 2.71
	4926.00	8.10	317.63	4924.77	-16.48	18.23	-14.18	1.78	445276.91	607993.70	N	32 13 25.32 W	103 59 2.80
	5020.00	8.82	312.28	5017.74	-25.04	27.97	-23.98	1.13	445286.65	607983.90	N	32 13 25.42 W	103 59 2.91
	5115.00	9.53	308.36	5111.53	-33.43	37.75	-35.53	1.00	445296.43	607972.35	N	32 13 25.52 W	103 59 3.05
	5209.00	10.44	305.29	5204.10	-41.62	47.50	-48.59	1.12	445306.17	607959.30	N	32 13 25.61 W	103 59 3.20
	5304.00	10.44	304.68	5297.53	-49.82	57.37	-62.69	0.12	445316.04	607945.19	N	32 13 25.71 W	103 59 3.36
	5398.00	10.47	300.80	5389.97	-57.33	66.59	-77.03	0.75	445325.26	607930.86	N	32 13 25.80 W	103 59 3.53
	5493.00	9.95	297.18	5483.47	-63.76	74.76	-91.75	0.87	445333.43	607916.14	N	32 13 25.89 W	103 59 3.70
	5587.00	10.76	296.19	5575.94	-69.57	82.34	-106.84	0.88	445341.01	607901.04	N	32 13 25.96 W	103 59 3.88
	5682.00	12.20	296.67	5669.03	-75.99	90.76	-123.77	1.52	445349.43	607884.12	N	32 13 26.04 W	103 59 4.07
	5776.00	13.07	297.27	5760.76	-83.16	100.09	-142.10	0.94	445358.76	607865.80	N	32 13 26.14 W	103 59 4.29
	5871.00	11.80	295.43	5853.53	-90.10	109.18	-160.42	1.40	445367.85	607847.48	N	32 13 26.23 W	103 59 4.50
	5965.00	11.97	298.23	5945.51	-96.80	117.92	-177.69	0.64	445376.59	607830.21	N	32 13 26.31 W	103 59 4.70
	6060.00	11.81	298.73	6038.47	-104.11	127.25	-194.89	0.20	445385.92	607813.00	N	32 13 26.41 W	103 59 4.90
	6154.00	11.48	298.62	6130.54	-111.24	136.35	-211.52	0.37	445395.02	607796.37	N	32 13 26.50 W	103 59 5.09
	6249.00	12.27	298.84	6223.51	-118.61	145.74	-228.65	0.85	445404.41	607779.25	N	32 13 26.59 W	103 59 5.29
	6343.00	11.75	296.58	6315.45	-125.67	154.84	-245.96	0.75	445413.51	607761.94	N	32 13 26.68 W	103 59 5.49
	6437.00	11.84	294.75	6407.47	-131.95	163.16	-263.28	0.41	445421.83	607744.62	N	32 13 26.77 W	103 59 5.69
	6532.00	11.81	292.42	6500.45	-137.64	170.95	-281.11	0.50	445429.61	607726.79	N	32 13 26.84 W	103 59 5.90
	6626.00	11.79	291.79	6592.47	-142.79	178.18	-298.92	0.14	445436.85	607708.98	N	32 13 26.92 W	103 59 6.11
	6720.00	11.73	289.05	6684.50	-147.38	184.86	-316.87	0.50	445443.53	607691.03	N	32 13 26.98 W	103 59 6.32
	6815.00	11.15	286.26	6777.61	-151.01	190.59	-334.82	0.84	445449.25	607673.09	N	32 13 27.04 W	103 59 6.53
	6909.00	10.23	283.98	6869.98	-153.61	195.15	-351.64	1.08	445453.81	607656.26	N	32 13 27.08 W	103 59 6.72
	7004.00	10.39	282.24	6963.44	-155.55	199.00	-368.20	0.37	445457.67	607639.71	N	32 13 27.12 W	103 59 6.91
	7099.00	10.72	280.91	7056.84	-157.06	202.49	-385.25	0.43	445461.16	607622.66	N	32 13 27.16 W	103 59 7.11
	7193.00	11.21	286.68	7149.12	-159.17	206.62	-402.63	1.10	445465.28	607605.28	N	32 13 27.20 W	103 59 7.31
	7287.00	12.02	280.23	7241.20	-161.24	210.82	-421.06	1.45	445469.49	607586.85	N	32 13 27.24 W	103 59 7.53
	7383.00	11.67	279.73	7335.15	-162.41	214.24	-440.47	0.38	445472.90	607567.45	N	32 13 27.28 W	103 59 7.75
	7476.00	10.84	281.71	7426.36	-163.71	217.61	-458.30	0.98	445476.27	607549.61	N	32 13 27.31 W	103 59 7.96
	7571.00	10.06	286.45	7519.79	-165.94	221.77	-475.01	1.22	445480.43	607532.91	N	32 13 27.35 W	103 59 8.16
	7665.00	9.27	291.83	7612.46	-169.34	226.91	-489.91	1.28	445485.57	607518.01	N	32 13 27.40 W	103 59 8.33

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 ° ' ")
	7759.00	8.47	292.32	7705.33	-173.21	232.35	-503.34	0.85	445491.01	607504.58	N 32 13 27.46	W 103 59 8.49
	7854.00	8.16	304.81	7799.34	-178.30	238.86	-515.35	1.93	445497.52	607492.57	N 32 13 27.52	W 103 59 8.63
	7948.00	7.95	316.60	7892.42	-185.64	247.39	-525.30	1.77	445506.05	607482.62	N 32 13 27.61	W 103 59 8.74
	8043.00	5.97	321.00	7986.72	-193.32	256.01	-532.92	2.16	445514.66	607475.00	N 32 13 27.69	W 103 59 8.83
	8137.00	4.40	329.26	8080.33	-199.61	262.90	-537.84	1.85	445521.56	607470.08	N 32 13 27.76	W 103 59 8.89
	8232.00	3.10	339.87	8175.13	-204.80	268.45	-540.59	1.55	445527.11	607467.34	N 32 13 27.82	W 103 59 8.92
	8326.00	1.27	21.40	8269.06	-208.08	271.80	-541.08	2.46	445530.46	607466.84	N 32 13 27.85	W 103 59 8.92
	8421.00	1.82	166.61	8364.04	-207.68	271.32	-540.35	3.11	445529.98	607467.57	N 32 13 27.84	W 103 59 8.91
	8515.00	5.49	179.22	8457.84	-201.82	265.37	-539.94	3.97	445524.03	607467.98	N 32 13 27.79	W 103 59 8.91
	8610.00	7.89	183.85	8552.18	-190.79	254.32	-540.32	2.59	445512.98	607467.61	N 32 13 27.68	W 103 59 8.92
	8705.00	8.46	184.26	8646.22	-177.30	240.84	-541.27	0.60	445499.50	607466.65	N 32 13 27.54	W 103 59 8.93
	8799.00	8.59	187.01	8739.18	-163.37	226.98	-542.64	0.46	445485.64	607465.28	N 32 13 27.41	W 103 59 8.94
	8893.00	8.57	185.31	8832.13	-149.35	213.04	-544.15	0.27	445471.70	607463.77	N 32 13 27.27	W 103 59 8.96
	8988.00	7.03	180.62	8926.25	-136.49	200.17	-544.87	1.75	445458.84	607463.06	N 32 13 27.14	W 103 59 8.97
	9082.00	4.24	182.02	9019.78	-127.30	190.95	-545.05	2.97	445449.61	607462.87	N 32 13 27.05	W 103 59 8.97
	9197.00	3.63	191.23	9134.51	-119.43	183.13	-545.91	0.76	445441.79	607462.01	N 32 13 26.97	W 103 59 8.98
	9291.00	7.69	182.09	9228.04	-110.20	173.92	-546.72	4.41	445432.59	607461.20	N 32 13 26.88	W 103 59 8.99
	9386.00	10.99	179.47	9321.77	-94.87	158.51	-546.87	3.50	445417.18	607461.05	N 32 13 26.73	W 103 59 9.00
	9480.00	13.84	176.48	9413.56	-74.90	138.32	-546.10	3.11	445396.99	607461.83	N 32 13 26.53	W 103 59 8.99
	9575.00	17.58	176.94	9504.99	-49.56	112.65	-544.63	3.94	445371.32	607463.29	N 32 13 26.27	W 103 59 8.97
	9669.00	25.23	181.76	9592.45	-15.55	78.39	-544.49	8.34	445337.07	607463.43	N 32 13 25.94	W 103 59 8.97
	9763.00	30.52	183.10	9675.52	28.27	34.50	-546.40	5.67	445293.18	607461.53	N 32 13 25.50	W 103 59 8.99
	9858.00	29.97	183.56	9757.58	76.04	-13.27	-549.17	0.63	445245.42	607458.75	N 32 13 25.03	W 103 59 9.03
	9920.00	30.59	184.27	9811.13	107.27	-44.45	-551.31	1.15	445214.23	607456.61	N 32 13 24.72	W 103 59 9.05
	10006.00	38.00	186.45	9882.13	155.68	-92.65	-555.92	8.73	445166.04	607452.00	N 32 13 24.24	W 103 59 9.11
	10035.00	44.61	186.02	9903.90	174.81	-111.67	-557.99	22.81	445147.02	607449.93	N 32 13 24.06	W 103 59 9.13
	10130.00	55.08	185.68	9965.08	247.31	-183.80	-565.37	11.02	445074.89	607442.56	N 32 13 23.34	W 103 59 9.22
	10223.00	66.46	183.46	10010.42	328.27	-264.57	-571.73	12.41	444994.13	607436.19	N 32 13 22.54	W 103 59 9.30
	10317.00	80.91	181.82	10036.76	418.03	-354.45	-575.83	15.46	444904.26	607432.09	N 32 13 21.65	W 103 59 9.35
	10410.00	90.38	175.90	10043.82	509.77	-447.01	-573.96	12.00	444811.70	607433.97	N 32 13 20.74	W 103 59 9.33
	10476.00	91.58	176.15	10042.69	574.65	-512.84	-569.38	1.86	444745.88	607438.54	N 32 13 20.09	W 103 59 9.28
	10570.00	91.24	178.22	10040.38	667.36	-606.70	-564.77	2.23	444652.03	607443.16	N 32 13 19.16	W 103 59 9.23
	10664.00	90.07	178.30	10039.30	760.36	-700.64	-561.92	1.25	444558.09	607446.01	N 32 13 18.23	W 103 59 9.20
	10758.00	90.14	180.16	10039.13	853.59	-794.63	-560.65	1.98	444464.11	607447.27	N 32 13 17.30	W 103 59 9.19
	10851.00	89.76	180.01	10039.21	945.99	-887.63	-560.79	0.44	444371.12	607447.13	N 32 13 16.38	W 103 59 9.20
	10945.00	90.07	179.76	10039.35	1039.35	-981.63	-560.60	0.42	444277.13	607447.32	N 32 13 15.45	W 103 59 9.20
	11039.00	89.07	181.29	10040.06	1132.82	-1075.62	-561.46	1.94	444183.15	607446.46	N 32 13 14.52	W 103 59 9.21
	11133.00	90.86	180.99	10040.11	1226.39	-1169.60	-563.33	1.93	444089.18	607444.59	N 32 13 13.59	W 103 59 9.24
	11228.00	89.69	182.63	10039.66	1321.06	-1264.54	-566.33	2.12	443994.24	607441.59	N 32 13 12.65	W 103 59 9.28
	11321.00	89.28	180.81	10040.49	1413.72	-1357.49	-569.12	2.01	443901.29	607438.80	N 32 13 11.73	W 103 59 9.31
	11415.00	90.83	181.48	10040.40	1507.29	-1451.47	-571.00	1.80	443807.32	607436.92	N 32 13 10.80	W 103 59 9.34
	11508.00	90.72	181.27	10039.14	1599.90	-1544.44	-573.23	0.25	443714.37	607434.69	N 32 13 9.88	W 103 59 9.37
	11602.00	90.45	181.74	10038.19	1693.53	-1638.40	-575.70	0.58	443620.41	607432.22	N 32 13 8.95	W 103 59 9.40
	11696.00	90.86	182.27	10037.11	1787.22	-1732.33	-578.99	0.71	443526.48	607428.93	N 32 13 8.02	W 103 59 9.44
	11791.00	89.00	180.54	10037.23	1881.83	-1827.30	-581.32	2.67	443431.53	607426.61	N 32 13 7.08	W 103 59 9.47
	11884.00	93.30	181.59	10035.36	1974.36	-1920.24	-583.05	4.76	443338.59	607424.88	N 32 13 6.16	W 103 59 9.49
	11978.00	92.72	178.40	10030.42	2067.60	-2014.10	-583.04	3.44	443244.74	607424.89	N 32 13 5.23	W 103 59 9.50
	12073.00	91.79	178.52	10026.69	2161.57	-2108.99	-580.49	0.99	443149.86	607427.44	N 32 13 4.29	W 103 59 9.47
	12156.00	89.79	179.70	10025.54	2243.86	-2191.97	-579.20	2.80	443066.89	607428.73	N 32 13 3.47	W 103 59 9.46
	12261.00	89.83	179.71	10025.89	2348.10	-2296.96	-578.66	0.04	442961.90	607429.27	N 32 13 2.43	W 103 59 9.46
	12355.00	89.90	180.18	10026.11	2441.47	-2390.96	-578.57	0.51	442867.91	607429.36	N 32 13 1.50	W 103 59 9.46
	12449.00	89.52	178.93	10026.59	2534.77	-2484.96	-577.84	1.39	442773.92	607430.09	N 32 13 0.57	W 103 59 9.45
	12542.00	89.69	179.25	10027.23	2626.97	-2577.94	-576.36	0.39	442680.94	607431.56	N 32 12 59.65	W 103 59 9.44
	12636.00	90.14	178.57	10027.37	2720.13	-2671.93	-574.57	0.87	442586.97	607433.35	N 32 12 58.72	W 103 59 9.42
	12730.00	89.83	178.95	10027.39	2813.26	-2765.90	-572.54	0.52	442493.00	607435.39	N 32 12 57.79	W 103 59 9.40
	12825.00	89.72	178.87	10027.76	2907.41	-2860.88	-570.73	0.14	442398.02	607437.19	N 32 12 56.85	W 103 59 9.39
	12919.00	90.14	178.79	10027.88	3000.55	-2954.86	-568.81	0.45	442304.05	607439.11	N 32 12 55.92	W 103 59 9.37
	13013.00	90.45	179.98	10027.40	3093.81	-3048.86	-567.80	1.31	442210.07	607440.12	N 32 12 54.99	W 103 59 9.36
	13107.00	90.14	179.26	10026.91	3187.12	-3142.85	-567.18	0.83	442116.08	607440.74	N 32 12 54.06	W 103 59 9.36
	13200.00	90.00	178.99	10026.80	3279.33	-3235.84	-565.76	0.33	442023.10	607442.16	N 32 12 53.14	W 103 59 9.34
	13292.00	90.28	179.33	10026.57	3370.56	-3327.83	-564.41	0.48	441931.11	607443.51	N 32 12 52.23	W 103 59 9.33
	13384.00	90.34	179.99	10026.08	3461.89	-3419.83	-563.87	0.72	441839.12	607444.06	N 32 12 51.32	W 103 59 9.33
	13476.00	89.31	178.74	10026.36	3553.16	-3511.82	-562.85	1.76	441747.14	607445.08	N 32 12 50.41	W 103 59 9.32
	13570.00	89.35	179.10	10027.46	3646.32	-3605.80	-561.07	0.39	441653.17	607446.85	N 32 12 49.48	W 103 59 9.30
	13663.00	89.38	179.19	10028.49	3738.53	-3698.78	-559.69	0.10	441560.20	607448.24	N 32 12 48.56	W 103 59 9.29
	13757.00	90.65	179.75	10028.46	3831.81	-3792.77	-558.82	1.48	441466.21	607449.11	N 32 12 47.63	W 103 59 9.28
	13851.00	90.65	179.31	10027.40	3925.09	-3886.76	-558.05	0.47	441372.23	607449.88	N 32 12 46.70	W 103 59 9.28
	13945.00	91.41	179.44	10025.71	4018.34	-3980.74	-557.02	0.82	441278.25	607450.90	N 32 12 45.77	W 103 59 9.27
	14040.00	90.89	178.91	10023.80	4112.53	-4075.71	-555.65	0.78	441183.29	607452.27	N 32 12 44.83	W 103 59 9.26
	14133.00	88.83	179.04	10024.03	4204.71	-4168.69	-553.99	2.22	441090.32	607453.93	N 32 12 43.91	W 103 59 9.24
	14227.00	88.49	178.75	10026.22	4297.84	-4262.65	-552.18	0.48	440996.37	607455.75	N 32 12 42.98	W 103 59 9.22
	14322.00	89.28	178.63	10028.07	4391.92	-4357.60	-550.01	0.84	440901.42	607457.92	N 32 12 42.04	W 103 59 9.20
	14415.00	89.00	179.65	10029.47	4484.13	-4450.58	-548.61	1.14	440808.45	607459.31	N 32 12 41.12	W 103 59 9.19
	14509.00	89.21	177.78	10030.94	4577.23	-4544.54	-546.50	2.00	440714.50	607461.42	N 32 12 40.19	W 103 59 9.17
	14604.00	89.48	178.94	10032.02	4671.25	-4639.50	-543.78	1.25	440619.55	607464.14	N 32 12 39.25	W 103 59 9.14
Final MWD Survey	14657.00	88.90	179.09	10032.77	4723.78	-4692.48	-542.87	1.13	440566.57	607465.05	N 32 12 38.73	W 103 59 9.13
Proj. to Bit	14695.00	88.90	179.09	10033.50	4761.45	-4730.47	-542.27	0.00	440528.58	607465.65	N 32 12 38.35	W 103 59 9.13

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 16 State 33H MWD 0-14695 ftMD
	1	26.500	513.000	1/98.425	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Cedar Canyon 16 State 33H MWD 0-
	1	513.000	14695.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Cedar Canyon 16 State 33H MWD 0-