

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:

17, T24S, R32E, LEA NM
N 32.21096 W -103.70168

I, Robert Hargrave certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of March 08, 2018 through March 13, 2018, conduct or supervise the taking of the TelePacer surveys from a depth of 10478.00 feet to a depth of 20468.00 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 Mesa Verde BS Unit 9H Well (Original Hole) API No. 30-025-44194 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.

Robert Hargrave

By
Robert Hargrave
FE

Subscribed and Sworn to before me this 3rd day of May (month) 2018 (yr)

My Commission expires:

2-16-2022

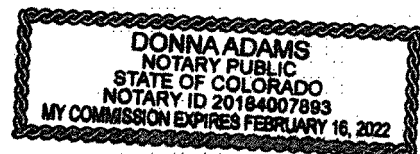
Notary Public

D. Adams

(signature)

(County State)

Adams County Colorado





Oxy Mesa Verde BS Unit 9 Gyro+MWD 0-20,504' Survey Geodetic Report

(Def Survey)

Report Date: March 14, 2018 - 04:37 PM
 Client: OXY
 Field: NM Lea County (NAD 83)
 Structure / Slot: Oxy Mesa Verde BS Unit 9 / Oxy Mesa Verde BS Unit 9
 Well: Oxy Mesa Verde BS Unit 9
 Borehole: Original Borehole
 UTM / API# : Unknown / 30-025-44194
 Survey Name: Oxy Mesa Verde BS Unit 9 Gyro+MWD 0-20,504'
 Survey Date: March 09, 2018
 Tort / AHD / DDI / ERD Ratio: 237.825' / 10918.638 ft / 6.708' / 1.049
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 12' 39.46218" W 103° 42' 0.05352"
 Location Grid N/E Y/X: N 441055.960 NUS, E 736894.080 NUS
 CRS Grid Convergence Angle: 0.3387°
 Grid Scale Factor: 0.9999528
 Version / Patch: 2.10.708.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 355.089° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB=26.5'
 TVD Reference Elevation: 3591.300 ft above MSL
 Seabed / Ground Elevation: 3564.800 ft above MSL
 Magnetic Declination: 8.838°
 Total Gravity Field Strength: 988.430mgm (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48025.337 nT
 Magnetic Dip Angle: 59.931°
 Declination Date: March 09, 2018
 Magnetic Declination Model: HDGM 2018
 North Reference: Grid North
 Grid Convergence Used: 0.3387°
 Total Corr Mag North-Grid: 8.5017°
 North: Well Head
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/E/W)	Longitude (E/W)
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	441055.96	736894.09	N 32° 12' 39.46"	W 103° 42' 0.05"
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	441055.96	736894.09	N 32° 12' 39.46"	W 103° 42' 0.05"
	81.30	0.18	10.64	81.30	0.08	0.08	0.02	0.33	441056.04	736894.11	N 32° 12' 39.48"	W 103° 42' 0.05"
	173.20	0.42	73.68	173.20	0.29	0.32	0.37	0.41	441056.28	736894.48	N 32° 12' 39.47"	W 103° 42' 0.05"
	264.40	0.38	49.48	264.40	0.52	0.60	0.90	0.19	441056.58	736894.99	N 32° 12' 39.47"	W 103° 42' 0.04"
	355.50	0.36	32.94	355.49	0.91	1.03	1.28	0.11	441056.99	736895.37	N 32° 12' 39.47"	W 103° 42' 0.04"
	446.20	0.33	25.54	446.19	1.38	1.50	1.55	0.06	441057.48	736895.64	N 32° 12' 39.48"	W 103° 42' 0.04"
	538.60	0.20	5.09	538.59	1.75	1.90	1.87	0.17	441057.88	736895.76	N 32° 12' 39.48"	W 103° 42' 0.03"
	631.00	0.23	10.88	630.99	2.09	2.25	1.72	0.04	441058.21	736895.81	N 32° 12' 39.48"	W 103° 42' 0.03"
	722.40	0.26	25.83	722.39	2.44	2.61	1.65	0.08	441058.57	736895.94	N 32° 12' 39.49"	W 103° 42' 0.03"
	812.90	0.26	47.53	812.89	2.75	2.94	2.09	0.11	441058.90	736896.18	N 32° 12' 39.49"	W 103° 42' 0.03"
	904.30	0.32	52.15	904.29	3.01	3.23	2.44	0.07	441059.19	736896.53	N 32° 12' 39.49"	W 103° 42' 0.02"
	998.70	0.23	46.78	998.69	3.27	3.52	2.79	0.10	441059.48	736896.88	N 32° 12' 39.50"	W 103° 42' 0.02"
	1093.10	0.15	41.20	1093.09	3.47	3.75	3.01	0.09	441059.71	736897.10	N 32° 12' 39.50"	W 103° 42' 0.02"
	1187.40	0.10	4.37	1187.39	3.64	3.82	3.10	0.10	441059.88	736897.14	N 32° 12' 39.50"	W 103° 42' 0.02"
	1281.90	0.11	351.14	1281.89	3.81	4.09	3.09	0.03	441060.05	736897.18	N 32° 12' 39.50"	W 103° 42' 0.02"
	1376.30	0.11	343.74	1376.29	3.99	4.27	3.05	0.02	441060.23	736897.14	N 32° 12' 39.50"	W 103° 42' 0.02"
	1470.60	0.11	333.00	1470.59	4.17	4.44	2.98	0.02	441060.40	736897.07	N 32° 12' 39.51"	W 103° 42' 0.02"
	1565.30	0.10	326.38	1565.29	4.32	4.59	2.90	0.02	441060.55	736896.99	N 32° 12' 39.51"	W 103° 42' 0.02"
	1659.80	0.08	248.38	1659.79	4.48	4.83	2.79	0.12	441060.59	736896.86	N 32° 12' 39.51"	W 103° 42' 0.02"
	1754.30	0.08	227.55	1754.29	4.62	4.96	2.68	0.03	441060.52	736896.77	N 32° 12' 39.51"	W 103° 42' 0.02"
	1848.70	0.10	219.36	1848.69	4.72	5.08	2.58	0.03	441060.42	736896.67	N 32° 12' 39.51"	W 103° 42' 0.02"
	1943.20	0.10	200.28	1943.19	4.88	5.31	2.50	0.04	441060.27	736896.59	N 32° 12' 39.50"	W 103° 42' 0.02"
	2037.60	0.11	187.98	2037.59	5.02	5.48	2.46	0.03	441060.11	736896.55	N 32° 12' 39.50"	W 103° 42' 0.02"
	2132.30	0.12	205.15	2132.29	5.15	5.67	2.40	0.04	441059.93	736896.49	N 32° 12' 39.50"	W 103° 42' 0.02"
	2226.70	0.10	203.61	2226.69	5.29	5.80	2.33	0.02	441059.78	736896.42	N 32° 12' 39.50"	W 103° 42' 0.02"
	2321.20	0.10	197.85	2321.19	5.44	5.95	2.27	0.01	441059.61	736896.36	N 32° 12' 39.50"	W 103° 42' 0.02"
	2415.40	0.11	195.28	2415.39	5.58	6.08	2.22	0.01	441059.44	736896.31	N 32° 12' 39.49"	W 103° 42' 0.03"
	2509.50	0.11	201.88	2509.48	5.71	6.21	2.18	0.01	441059.27	736896.25	N 32° 12' 39.49"	W 103° 42' 0.03"
	2603.60	0.11	70.68	2603.58	5.86	6.36	2.21	0.21	441059.22	736896.30	N 32° 12' 39.49"	W 103° 42' 0.02"
	2698.10	0.11	60.59	2698.08	5.99	6.50	2.38	0.02	441059.29	736896.47	N 32° 12' 39.50"	W 103° 42' 0.02"
	2791.80	0.11	56.00	2791.78	6.12	6.63	2.53	0.01	441059.39	736896.62	N 32° 12' 39.50"	W 103° 42' 0.02"
	2886.00	0.12	68.52	2885.98	6.27	6.77	2.70	0.03	441059.47	736896.79	N 32° 12' 39.50"	W 103° 42' 0.02"
	2980.10	0.11	41.39	2980.08	6.40	6.89	2.85	0.06	441059.56	736896.94	N 32° 12' 39.50"	W 103° 42' 0.02"
	3074.70	0.11	50.66	3074.68	6.53	7.01	2.98	0.02	441059.70	736897.07	N 32° 12' 39.50"	W 103° 42' 0.02"
	3169.40	0.13	47.02	3169.38	6.66	7.13	3.13	0.02	441059.83	736897.22	N 32° 12' 39.50"	W 103° 42' 0.02"
	3264.00	0.11	20.91	3263.98	6.79	7.25	3.24	0.06	441059.99	736897.33	N 32° 12' 39.50"	W 103° 42' 0.02"
	3358.40	0.09	29.73	3358.38	6.91	7.37	3.31	0.03	441060.14	736897.40	N 32° 12' 39.50"	W 103° 42' 0.01"
	3452.80	0.11	13.57	3452.88	7.03	7.49	3.37	0.04	441060.29	736897.48	N 32° 12' 39.50"	W 103° 42' 0.01"
	3547.40	0.11	1.29	3547.38	7.15	7.61	3.39	0.02	441060.47	736897.48	N 32° 12' 39.51"	W 103° 42' 0.01"
	3642.00	0.11	10.96	3641.99	7.27	7.73	3.41	0.02	441060.65	736897.50	N 32° 12' 39.51"	W 103° 42' 0.01"
	3736.60	0.11	326.48	3736.58	7.39	7.85	3.47	0.09	441060.82	736897.48	N 32° 12' 39.51"	W 103° 42' 0.01"
	3831.00	0.07	293.26	3830.98	7.51	7.97	3.57	0.07	441060.99	736897.36	N 32° 12' 39.51"	W 103° 42' 0.02"
	3925.70	0.07	314.51	3925.68	7.63	8.09	3.68	0.03	441061.16	736897.27	N 32° 12' 39.51"	W 103° 42' 0.02"
	4020.00	0.07	298.92	4019.98	7.75	8.21	3.78	0.02	441061.33	736897.17	N 32° 12' 39.51"	W 103° 42' 0.02"
	4114.50	0.08	304.40	4114.48	7.87	8.33	3.88	0.01	441061.50	736897.07	N 32° 12' 39.51"	W 103° 42' 0.02"
	4209.00	0.10	288.98	4208.98	7.99	8.45	3.98	0.03	441061.67	736896.94	N 32° 12' 39.51"	W 103° 42' 0.02"
	4303.30	0.10	284.25	4303.28	8.11	8.57	4.08	0.01	441061.84	736896.78	N 32° 12' 39.51"	W 103° 42' 0.02"
	4397.80	0.11	273.31	4397.88	8.23	8.69	4.18	0.02	441062.01	736896.61	N 32° 12' 39.51"	W 103° 42' 0.02"
	4492.30	0.10	266.93	4492.28	8.35	8.81	4.28	0.03	441062.18	736896.44	N 32° 12' 39.51"	W 103° 42' 0.02"
	4586.70	0.12	282.17	4586.68	8.47	8.93	4.38	0.02	441062.35	736896.26	N 32° 12' 39.52"	W 103° 42' 0.02"
	4681.20	0.10	307.37	4681.18	8.59	9.05	4.48	0.05	441062.52	736896.10	N 32° 12' 39.52"	W 103° 42' 0.02"
	4775.10	0.05	314.94	4775.08	8.71	9.17	4.58	0.05	441062.69	736895.91	N 32° 12' 39.52"	W 103° 42' 0.02"
	4869.80	0.11	168.14	4869.78	8.83	9.29	4.68	0.16	441062.86	736895.74	N 32° 12' 39.52"	W 103° 42' 0.02"
	4964.10	0.12	187.73	4964.08	8.95	9.41	4.78	0.04	441063.03	736895.57	N 32° 12' 39.52"	W 103° 42' 0.02"
	5058.50	0.11	168.95	5058.48	9.07	9.53	4.88	0.01	441063.20	736895.40	N 32° 12' 39.51"	W 103° 42' 0.02"
	5152.80	0.11	183.84	5152.78	9.19	9.65	4.98	0.01	441063.37	736895.23	N 32° 12' 39.51"	W 103° 42' 0.02"
	5247.30	0.11	192.25	5247.28	9.31	9.77	5.08	0.02	441063.54	736895.06	N 32° 12' 39.51"	W 103° 42' 0.02"
	5341.20	0.10	189.53	5341.18	9.43	9.89	5.18	0.01	441063.71	736894.89	N 32° 12' 39.51"	W 103° 42' 0.02"
	5435.20	0.11	179.18	5435.18	9.55	10.01	5.28	0.03	441063.88	736894.72	N 32° 12' 39.51"	W 103° 42' 0.02"
	5529.30	0.11	177.43	5529.28	9.67	10.13	5.38	0.02	441064.05	736894.55	N 32° 12' 39.50"	W 103° 42' 0.02"
	5623.50	0.09	176.53	5623.48	9.79	10.25	5.48	0.02	441064.22	736894.38	N 32° 12' 39.50"	W 103° 42' 0.02"
	5717.80	0.10	164.80	5717.78	9.91	10.37	5.58	0.02	441064.39	736894.21	N 32° 12' 39.50"	W 103° 42' 0.02"
	5811.90	0.09	168.09	5811.88	10.03	10.49	5.68	0.01	441064.56	736894.04	N 32° 12' 39.50"	W 103° 42' 0.02"
	5906.20	0.11	83.74	5906.18	10.15	10.61	5.78	0.17	441064.73	736893.87	N 32° 12' 39.50"	W 103° 42' 0.02"
	6000.70	0.10	69.07	6000.68	10.27	10.73	5.88	0.01	441064.90	736893.70	N 32° 12' 39.50"	W 103° 42' 0.02"
	6095.00	0.11	82.17	6094.98	10.39	10.85	5.98	0.03	441065.07	736893.53	N 32° 12' 39.50"	W 103° 42' 0.02"
	6189.40	0.13	87.84	6189.38	10.51	10.97	6.08	0.02	441065.24	736893.36	N 32° 12' 39.50"	W 103° 42' 0.02"
	6283.90	0.15	77.03	6283.88	10.63	11.09	6.18	0.03	441065.41	736893.19	N 32° 12' 39.50"	W 103° 42' 0.02"
	6378.50	0.92	266.05	6378.48	10.75	11.21	6.28	1.13	441065.58	736893.02	N 32° 12' 39.50"	W 103° 42' 0.02"
	6472.70	3.20	268.81	6472.61	10.87	11.33	6.38	2.42	441065.75	736892.85	N 32° 12' 39.50"	W 103° 42' 0.02"
	6567.10	5.20	269.29	6566.99	10.99	11.45	6.48	2.13	441065.92	736892.68	N 32° 12' 39.50"	W 103° 42' 0.15"
	6661.30	7.22	269.44	6660.39	11.11	11.57	6.58	2.03	441066.09	736892.51	N 32° 12' 39.49"	W 103° 42' 0.27"
	6755.80	9.13	269.49	6754.78	11.23	11.69	6.68	2.13	441066.26	736892.34	N 32° 12' 39.48	

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northings (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	7321.90	11.78	255.10	7308.90	-2.10	-14.32	-141.57	0.10	441041.64	736552.53	N 32 12 38.33 W 103 42 7.70	
	7416.00	11.74	254.87	7401.03	-5.46	-19.29	-180.09	0.07	441036.87	736534.01	N 32 12 39.28 W 103 42 7.92	
	7510.20	11.65	254.64	7493.27	-8.87	-24.31	-178.51	0.11	441031.65	736515.59	N 32 12 39.23 W 103 42 8.13	
	7604.50	11.35	254.85	7585.68	-12.24	-29.26	-196.63	0.32	441026.71	736497.45	N 32 12 39.18 W 103 42 8.34	
	7698.90	11.42	255.26	7678.22	-15.48	-34.06	-214.85	0.11	441021.90	736479.45	N 32 12 39.04 W 103 42 8.55	
	7793.10	11.73	254.94	7770.50	-18.81	-38.97	-232.91	0.35	441016.99	736461.19	N 32 12 39.09 W 103 42 8.77	
	7887.30	11.58	254.56	7862.78	-22.26	-44.02	-251.25	0.16	441011.94	736442.85	N 32 12 39.04 W 103 42 8.98	
	7981.50	11.51	254.47	7955.06	-25.72	-49.08	-269.42	0.08	441006.91	736424.68	N 32 12 38.99 W 103 42 9.19	
	8076.00	11.48	247.85	8047.66	-30.23	-53.03	-287.22	1.40	441000.84	736406.89	N 32 12 38.93 W 103 42 9.40	
	8170.50	11.81	244.99	8140.25	-36.28	-62.60	-304.54	0.62	440993.27	736389.56	N 32 12 38.86 W 103 42 9.60	
	8264.80	11.32	245.08	8232.67	-42.70	-70.60	-321.54	0.31	440985.36	736372.57	N 32 12 38.78 W 103 42 9.80	
	8359.00	11.44	244.56	8325.02	-49.14	-78.51	-338.38	0.17	440977.45	736355.75	N 32 12 38.70 W 103 42 10.00	
	8453.00	10.88	242.88	8417.23	-55.79	-86.60	-354.74	0.60	440969.37	736338.38	N 32 12 38.63 W 103 42 10.19	
	8547.10	11.06	237.73	8509.59	-63.31	-95.50	-370.35	1.05	440960.46	736323.76	N 32 12 38.54 W 103 42 10.37	
	8641.60	10.81	238.19	8602.38	-71.78	-105.27	-385.38	0.41	440950.69	736308.73	N 32 12 38.44 W 103 42 10.55	
	8735.80	11.02	235.90	8694.87	-80.41	-115.24	-400.17	0.23	440940.73	736293.94	N 32 12 38.35 W 103 42 10.72	
	8830.30	10.36	236.95	8787.73	-88.82	-124.93	-414.78	0.73	440931.03	736279.33	N 32 12 38.25 W 103 42 10.89	
	8924.40	11.07	237.51	8880.19	-96.99	-134.40	-429.49	0.78	440921.57	736264.82	N 32 12 38.16 W 103 42 11.08	
	9018.70	11.11	236.42	8972.73	-105.53	-144.29	-444.69	0.23	440911.68	736249.42	N 32 12 38.06 W 103 42 11.24	
	9112.70	10.82	236.39	9065.02	-113.83	-153.92	-459.75	0.50	440902.04	736234.36	N 32 12 37.97 W 103 42 11.41	
	9206.80	10.44	236.91	9157.50	-121.56	-162.95	-474.58	0.42	440893.01	736219.54	N 32 12 37.88 W 103 42 11.59	
	9300.70	10.24	238.04	9249.88	-129.38	-172.01	-488.78	0.59	440883.86	736205.33	N 32 12 37.79 W 103 42 11.75	
	9395.00	8.79	244.58	9342.88	-135.95	-179.78	-502.25	2.14	440876.18	736191.87	N 32 12 37.71 W 103 42 11.91	
	9489.20	7.87	254.53	9436.09	-139.65	-184.80	-514.95	1.81	440871.37	736178.15	N 32 12 37.67 W 103 42 12.08	
	9583.40	7.48	260.73	9529.46	-140.85	-188.67	-527.28	1.78	440869.30	736166.83	N 32 12 37.65 W 103 42 12.20	
	9677.30	7.94	264.80	9622.52	-138.28	-185.36	-539.64	2.82	440870.81	736154.47	N 32 12 37.66 W 103 42 12.35	
	9771.70	8.39	292.65	9715.85	-132.82	-180.72	-553.05	1.98	440875.24	736141.08	N 32 12 37.71 W 103 42 12.50	
	9866.00	8.98	296.46	9808.74	-124.51	-173.96	-567.80	1.31	440882.01	736126.32	N 32 12 37.77 W 103 42 12.67	
	9960.40	14.93	306.71	9903.42	-111.98	-162.87	-583.52	5.30	440895.45	736108.90	N 32 12 37.88 W 103 42 12.89	
	10055.00	21.42	310.56	9997.77	-88.89	-140.49	-603.32	10.31	440915.44	736090.60	N 32 12 38.11 W 103 42 13.08	
	10149.70	25.43	342.58	10077.70	-52.47	-108.00	-618.13	6.54	440949.87	736075.99	N 32 12 38.45 W 103 42 13.25	
	10244.10	30.78	336.25	10160.96	-9.78	-64.51	-633.95	6.48	440991.45	736060.17	N 32 12 38.86 W 103 42 13.44	
	10338.50	38.21	339.50	10239.66	39.98	-18.24	-653.46	6.06	441033.72	736040.66	N 32 12 39.34 W 103 42 13.68	
	10428.80	44.20	350.31	10308.65	87.21	39.93	-668.14	11.72	441095.88	736025.98	N 32 12 39.90 W 103 42 13.83	
	10478.00	52.68	348.96	10341.27	133.81	76.09	-674.78	17.32	441132.05	736019.34	N 32 12 40.25 W 103 42 13.90	
	10573.00	70.76	347.56	10385.11	216.52	157.64	-691.82	19.10	441213.59	736002.31	N 32 12 41.08 W 103 42 14.09	
	10667.00	88.07	349.12	10404.93	307.70	247.56	-710.34	16.37	441303.51	735983.79	N 32 12 41.95 W 103 42 14.30	
	10761.00	92.69	358.91	10405.95	401.51	340.68	-720.12	12.57	441396.82	735974.01	N 32 12 42.88 W 103 42 14.41	
	10858.00	95.28	0.85	10402.68	448.23	387.76	-720.30	6.63	441443.70	735973.83	N 32 12 43.34 W 103 42 14.41	
	10956.00	84.72	359.64	10394.14	545.48	485.38	-720.05	1.17	441541.32	735974.07	N 32 12 44.31 W 103 42 14.40	
	10998.00	92.07	359.19	10388.69	637.04	577.21	-720.99	2.92	441633.14	735973.14	N 32 12 45.22 W 103 42 14.41	
	11090.00	89.84	359.50	10387.08	728.77	689.18	-722.04	2.34	441725.11	735972.08	N 32 12 46.13 W 103 42 14.41	
	11182.00	87.98	357.23	10388.75	820.59	761.12	-724.66	3.26	441817.04	735968.46	N 32 12 47.04 W 103 42 14.44	
	11272.00	88.37	359.64	10391.62	910.38	851.03	-727.12	2.71	441906.95	735967.00	N 32 12 47.93 W 103 42 14.48	
	11364.00	88.09	2.44	10394.46	1001.63	942.96	-725.45	3.06	441998.88	735966.67	N 32 12 48.83 W 103 42 14.43	
	11457.00	88.43	3.23	10397.28	1093.93	1035.81	-720.85	0.92	442091.71	735973.27	N 32 12 49.75 W 103 42 14.37	
	11552.00	88.82	2.40	10399.56	1188.04	1130.66	-716.19	0.97	442188.57	735977.93	N 32 12 50.69 W 103 42 14.31	
	11646.00	88.71	2.62	10401.59	1281.23	1224.45	-712.07	0.26	442280.45	735982.05	N 32 12 51.62 W 103 42 14.26	
	11740.00	89.05	2.34	10403.43	1374.42	1317.44	-708.01	0.47	442374.34	735986.12	N 32 12 52.55 W 103 42 14.20	
	11834.00	89.05	2.85	10404.88	1467.69	1412.33	-703.67	0.65	442468.22	735990.45	N 32 12 53.48 W 103 42 14.15	
	11929.00	89.61	3.04	10406.10	1561.67	1507.19	-698.71	0.80	442563.08	735995.42	N 32 12 54.42 W 103 42 14.08	
	12023.00	90.45	2.68	10408.05	1654.81	1601.08	-694.02	0.97	442656.96	736000.11	N 32 12 55.35 W 103 42 14.02	
	12117.00	89.66	2.38	10405.96	1748.01	1694.98	-689.87	0.90	442750.86	736004.28	N 32 12 56.27 W 103 42 13.97	
	12211.00	87.98	2.06	10407.89	1841.25	1788.89	-686.23	1.82	442844.76	736007.80	N 32 12 57.20 W 103 42 13.92	
	12306.00	90.34	2.87	10409.28	1935.47	1883.79	-682.31	2.57	442938.68	736011.82	N 32 12 58.14 W 103 42 13.87	
	12400.00	90.28	2.82	10408.78	2028.62	1977.68	-677.81	0.17	443033.54	736016.32	N 32 12 59.07 W 103 42 13.81	
	12494.00	90.90	2.66	10407.81	2121.76	2071.56	-673.15	0.66	443127.42	736020.97	N 32 13 0.00 W 103 42 13.75	
	12588.00	90.73	2.54	10406.47	2214.91	2165.45	-668.72	0.39	443221.30	736025.40	N 32 13 0.93 W 103 42 13.69	
	12683.00	90.28	1.74	10405.63	2309.19	2260.38	-665.17	0.97	443316.22	736028.95	N 32 13 1.87 W 103 42 13.64	
	12777.00	90.62	359.99	10404.90	2402.70	2354.38	-663.78	1.90	443410.20	736030.37	N 32 13 2.80 W 103 42 13.62	
	12871.00	90.78	0.34	10403.75	2496.32	2448.35	-663.48	0.41	443504.19	736030.64	N 32 13 3.73 W 103 42 13.61	
	12965.00	90.79	0.22	10402.48	2589.82	2542.34	-663.03	0.13	443598.18	736031.10	N 32 13 4.66 W 103 42 13.60	
	13059.00	90.90	0.78	10401.07	2683.49	2636.33	-662.22	0.59	443692.16	736031.90	N 32 13 5.58 W 103 42 13.58	
	13154.00	90.79	0.81	10399.67	2778.03	2731.31	-661.09	0.20	443787.14	736033.04	N 32 13 6.53 W 103 42 13.56	
	13248.00	90.39	358.45	10398.69	2872.73	2826.30	-661.87	2.31	443882.12	736032.28	N 32 13 7.47 W 103 42 13.51	
	13343.00	90.45	358.64	10397.31	3061.37	3015.23	-660.86	0.11	444071.04	736027.46	N 32 13 9.34 W 103 42 13.61	
	13438.00	90.84	358.35	10396.25	3155.20	3109.19	-661.13	0.52	444165.00	736024.99	N 32 13 10.27 W 103 42 13.63	
	13532.00	90.79	358.87	10394.91	3249.03	3203.15	-661.74	0.14	444258.95	736022.38	N 32 13 11.20 W 103 42 13.65	
	13626.00	90.51	358.42	10393.83	3343.86	3298.10	-663.32	0.28	444353.86	736019.80	N 32 13 12.14 W 103 42 13.68	
	13721.00	90.73	358.52	10392.82	3437.69	3392.06	-667.83	0.24	444447.88	736017.29	N 32 13 13.07 W 103 42 13.70	
	13816.00	90.82	358.72	10391.70	3532.50	3487.03	-670.12	0.24	444542.82	736015.01	N 32 13 14.01 W 103 42 13.72	
	13910.00	90.56	358.67	10390.73	3628.31	3581.09	-681.26	0.08	444638.79	736012.87	N 32 13 14.94 W 103 42 13.74	
	14009.00	88.41	359.76	10393.24	3721.00	3675.94	-682.56	4.52	444731.72	736011.58	N 32 13 15.88 W 103 42 13.78	
	14193.00	90.50	359.01	10395.78	3814.68	3769.68	-683.57	4.42	444825.65	736010.58	N 32 13 16.80 W 103 42 13.75	
	14287.00	90.79	358.63	10394.72	3908.47	3863.65	-685.50	0.51	444919.62	736008.62	N 32 13 17.73 W 103 42 13.77	
	14381.00	85.46	0.58	10397.79	4002.09	3957.78	-686.15	6.04	445013.52	736007.87	N 32 13 18.66 W 103 42 13.77	
	14476.00	87.70	0.45	10403.46	4096.49	4052.58						

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLB (°/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	17877.00	89.00	355.05	10393.84	7491.84	7450.28	-804.28	0.45	448505.87	735889.85	N 32 13 53.23	W 103 42 14.91
	17971.00	89.83	354.46	10395.98	7585.83	7543.88	-812.87	0.85	448599.47	735881.26	N 32 13 54.18	W 103 42 18.00
	18066.00	90.06	353.38	10396.07	7680.81	7638.35	-822.93	1.16	448693.93	735871.20	N 32 13 55.09	W 103 42 15.11
	18255.00	90.45	354.78	10395.23	7889.78	7829.33	-842.43	0.77	448881.91	735851.71	N 32 13 56.96	W 103 42 15.33
	18350.00	90.73	356.29	10394.25	7984.77	7921.04	-849.82	1.62	448976.61	735844.31	N 32 13 57.89	W 103 42 15.40
	18445.00	91.18	354.84	10392.67	8059.75	8016.74	-857.17	1.60	449071.30	735836.97	N 32 13 58.83	W 103 42 15.48
	18539.00	90.81	354.15	10391.28	8153.73	8109.29	-866.18	1.02	449164.85	735827.95	N 32 13 59.75	W 103 42 15.58
	18634.00	90.87	353.49	10390.30	8248.70	8203.73	-876.41	0.71	449259.29	735817.72	N 32 14 0.69	W 103 42 15.69
	18728.00	90.84	355.19	10389.08	8342.88	8297.28	-885.70	1.79	449352.81	735808.43	N 32 14 1.81	W 103 42 15.80
	18823.00	90.84	357.45	10387.67	8437.84	8392.05	-891.62	2.41	449447.59	735802.31	N 32 14 2.95	W 103 42 15.88
	18917.00	90.84	358.61	10386.29	8531.51	8485.88	-895.06	1.23	449541.52	735799.08	N 32 14 3.48	W 103 42 15.89
	19012.00	91.01	359.07	10384.78	8626.29	8580.95	-896.98	0.52	449636.49	735797.16	N 32 14 4.42	W 103 42 15.91
	19106.00	91.07	359.69	10383.05	8720.01	8674.93	-898.00	0.66	449730.48	735796.14	N 32 14 5.35	W 103 42 15.91
	19200.00	89.94	0.33	10381.39	8808.29	8863.91	-897.88	0.69	449819.44	735796.17	N 32 14 7.22	W 103 42 15.90
	19389.00	89.66	359.70	10381.72	9001.94	8957.91	-897.94	0.73	450013.43	735798.20	N 32 14 8.15	W 103 42 15.89
	19484.00	89.78	359.44	10382.18	9098.85	9052.81	-898.65	0.30	450108.42	735795.48	N 32 14 9.09	W 103 42 15.90
	19573.00	89.50	359.81	10382.77	9190.38	9146.90	-899.43	0.35	450202.41	735794.70	N 32 14 10.02	W 103 42 15.90
	19671.00	89.27	0.40	10383.79	9285.00	9241.90	-899.42	0.87	450297.40	735794.71	N 32 14 10.96	W 103 42 15.89
	19767.00	89.28	359.67	10384.90	9378.64	9333.89	-899.36	0.79	450391.39	735794.77	N 32 14 11.89	W 103 42 15.89
	19862.00	89.05	359.52	10386.20	9473.34	9430.89	-900.04	0.38	450486.38	735794.10	N 32 14 12.83	W 103 42 15.89
	19956.00	89.38	359.19	10387.49	9567.07	9524.88	-901.09	0.50	450580.36	735793.04	N 32 14 13.76	W 103 42 15.89
	20050.00	89.44	359.71	10388.45	9660.79	9618.85	-902.00	0.56	450674.34	735792.14	N 32 14 14.69	W 103 42 15.90
	20145.00	89.61	0.68	10389.24	9755.40	9713.85	-901.67	1.04	450769.33	735792.46	N 32 14 15.63	W 103 42 15.89
	20234.00	89.38	359.79	10390.91	9843.83	9802.84	-900.90	0.49	450858.31	735793.24	N 32 14 17.50	W 103 42 15.86
	20428.00	89.80	0.47	10391.83	10037.25	9998.83	-900.68	0.73	451052.30	735793.45	N 32 14 18.43	W 103 42 15.85
Final MWD Survey	20468.00	89.55	0.14	10392.18	10077.09	10036.83	-900.47	0.83	451092.30	735793.68	N 32 14 18.83	W 103 42 15.85
Proj to Bit	20504.00	89.55	0.14	10392.44	10112.94	10072.83	-900.38	0.00	451128.29	735793.75	N 32 14 19.18	W 103 42 15.85

Survey Type: Del Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 85.000% 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	1/98.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde BS Unit 9 Gyro+MWD 0-20,504'
	1	26.500	26.500	Act Strs	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde BS Unit 9 Gyro+MWD 0-20,504'
	1	26.500	10428.800	Act Strs	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Mesa Verde BS Unit 9 Gyro+MWD 0-10428.800'
	1	10428.800	20504.000	Act Strs	30.000	30.000	NAL_MWD_PLUS_0 5_DEG	Original Borehole / Oxy Mesa Verde BS Unit 9 Gyro+MWD 0-20504.000'

OXY USA Inc.
Mesa Verde BS Unit 9H
API No. 30-025-44194

