

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, 24S, 32E, Lea NM
32.21092 -103.68898

I, Perry Hawks certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of March 16, 2018 through April 13, 2018, conduct or supervise the taking of the TelePacer surveys from a depth of 1001.00 feet to a depth of 14013.00 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 WC Unit 1H Well (Original Hole) API No. 30-025-44195 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
Perry Hawks
FE

Subscribed and Sworn to before me this 26th day of June (month) 2018 (yr)

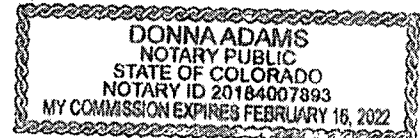
My Commission expires:

2-16-2022

D. Adams
Notary Public

Adams County Colorado
(County State)

(signature)



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Well Reference:
17, 24S, 32E, Lea NM
32.21092 -103.68898

I, Perry Hawks certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of April 19, 2018 through May 06, 2018, conduct or supervise the taking of the TelePacer surveys from a depth of 11551.00 feet to a depth of 22246.00 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 WC Unit 1H ST01 Well (Side Track) API No. 30-025-44195 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
Perry Hawks
FE

Subscribed and Sworn to before me this 26th day of June (month) 2018 (yr)

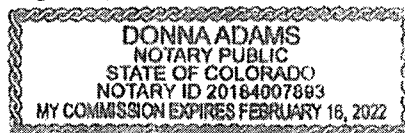
My Commission expires:

2-16-2022

D. Adams
Notary Public

Adams County Colorado
(County State)

(signature)



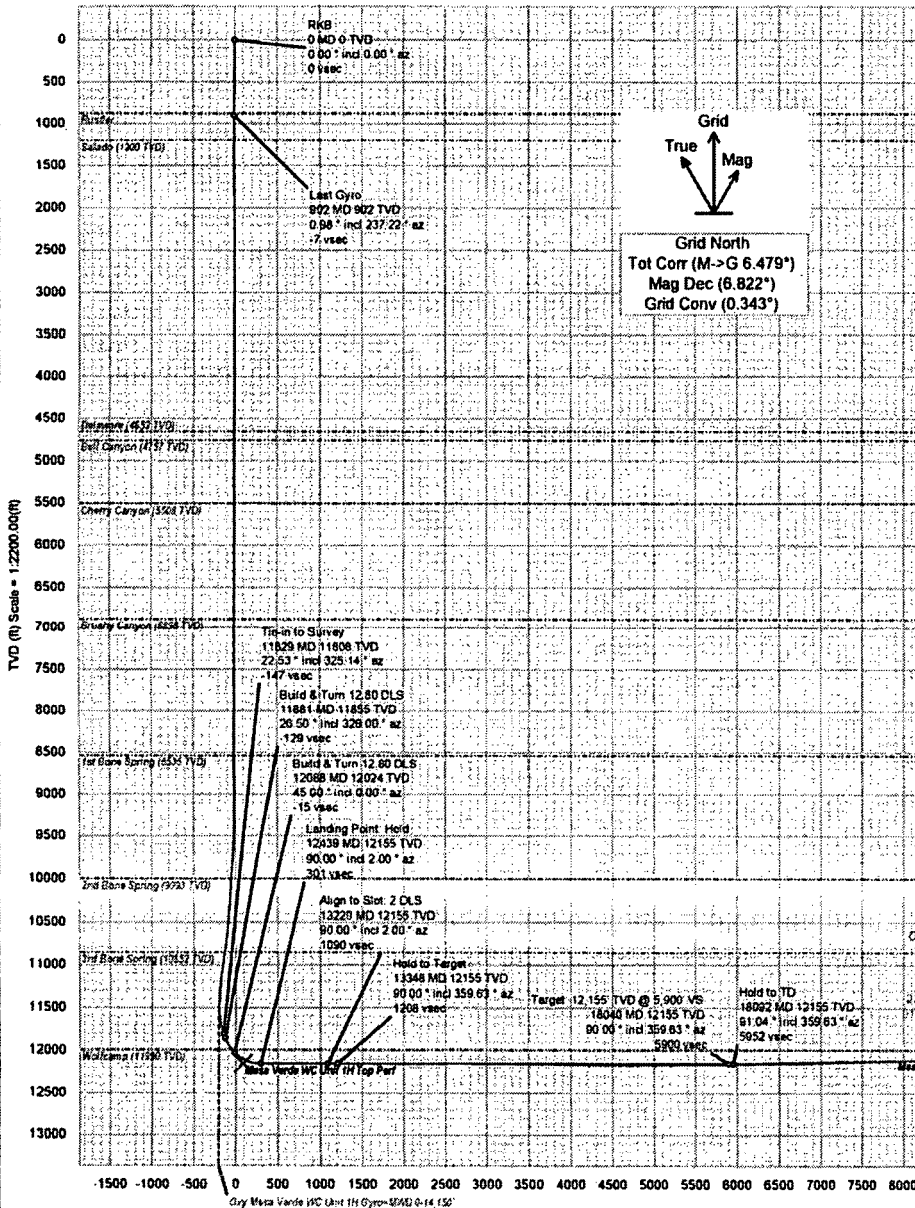
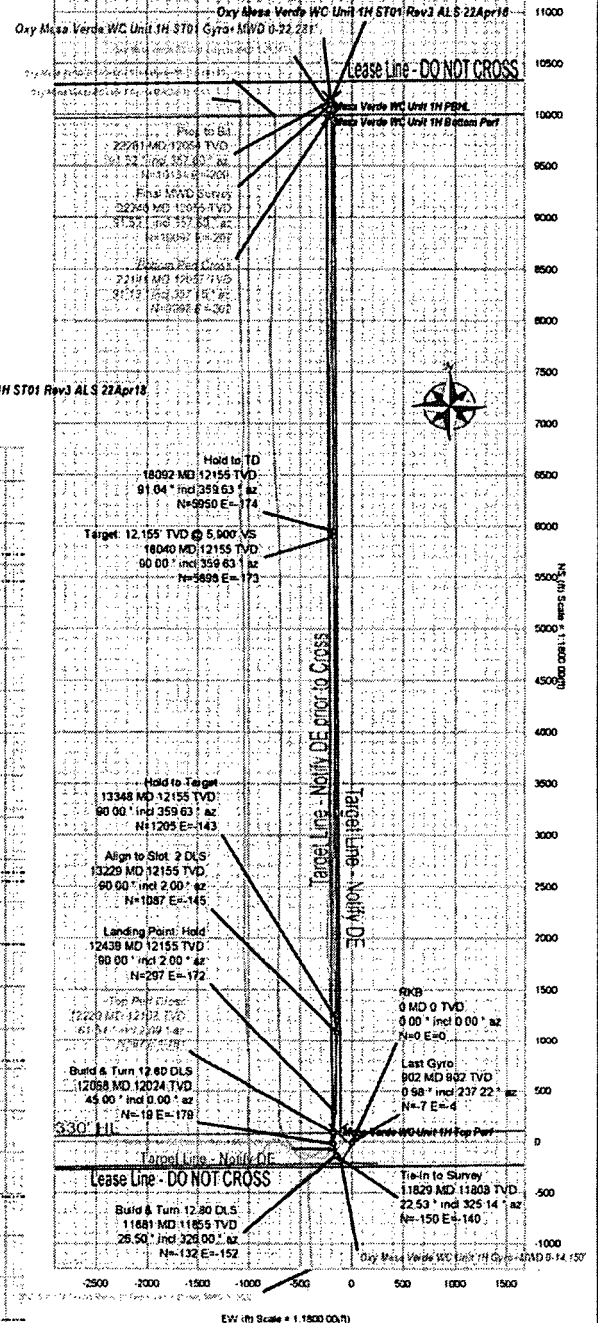
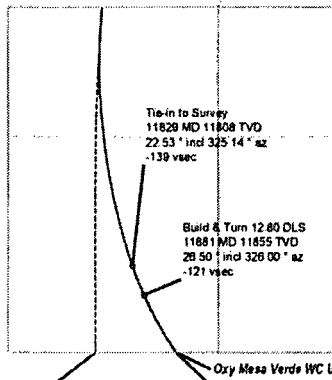
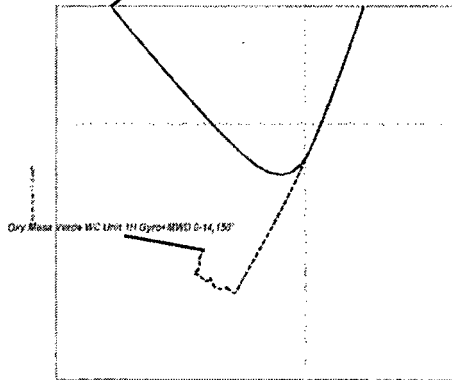
Schlumberger

OXY



Borehole:		Well:	Field:	Structure:
ST01		Oxy Mesa Verde WC Unit 1H	NM Lea County (NAD 83)	Oxy Mesa Verde WC Unit 1H
Gravity & Magnetic Parameters				
Model: MDGM 2018	Obs: 08.825"	Date: 17-Apr-2018	Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet	
MagDec: 6.822"	FS: 48012.826mT	Gravity FS: 998.432mgal (3.80465 Based)	Lat: N 32 18 28.30	North: 441062.921US
			Lon: W 103 41 20.33	East: 740822.771US
			Grid Conv: 0.3435"	Scale Fact: 0.9999458
Miscellaneous			Plan: Oxy Mesa Verde WC Unit 1H ST01 Rev3 ALS 22Apr18	
			TVD Ref: RKB=26.5' (5885.7ft above MSL)	

Oxy Mesa Verde WC Unit 1H ST01 Gyro-MWD 0-22.281'



Vertical Section (R) Azim = 358.87° Scale = 1:2200.00(R) Origin = 0N/-S, 0E/-W



Oxy Mesa Verde WC Unit 1H ST01 Gyro+MWD 0-22,281' Survey Geodetic

Report

(Def Survey)

Report Date: May 03, 2018 - 04:10 PM
 Client: OXY
 Field: NM Lea County (NAD 83)
 Structure / Slot: Oxy Mesa Verde WC Unit 1H / Oxy Mesa Verde WC Unit 1H
 Well: Oxy Mesa Verde WC Unit 1H
 Wellbore: ST01
 Well / API#: Unknown / Unknown
 Survey Name: Oxy Mesa Verde WC Unit 1H ST01 Gyro+MWD 0-22,281'
 Survey Date: April 17, 2018
 Survey / AHD / DD1 / ERD Ratio: 205.658' / 10597.835' / 6.601' / 0.871
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 12' 39.30029", W 103° 41' 20.32574"
 Location Grid N/E Y/X: N 441062.920 NUS, E 740622.770 NUS
 Grid Convergence Angle: 0.3435°
 Grid Scale Factor: 0.99995458
 Projection / Patch: 2.10.720.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 358.866° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB=26.5'
 TVD Reference Elevation: 3585.200 ft above MSL
 Seabed / Ground Elevation: 3559.200 ft above MSL
 Magnetic Declination: 8.822°
 Total Gravity Field Strength: 988.4324mgn (9.8665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48012.626 nT
 Magnetic Dip Angle: 59.925°
 Declination Date: April 17, 2018
 Magnetic Declination Model: HDGM 2018
 North Reference: Grid North
 Grid Convergence Used: 0.3435°
 Total Corr Mag North->Grid: 6.4790°
 Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (NUS)	Easting (EUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	441062.92	740622.77	N 32 12 39.30	W 103 41 20.33
	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	441062.92	740622.77	N 32 12 39.30	W 103 41 20.33
	75.09	0.30	109.92	75.09	-0.05	-0.04	0.12	0.62	441062.88	740622.89	N 32 12 39.30	W 103 41 20.32
	161.18	0.40	141.03	161.18	-0.36	-0.35	0.52	0.25	441062.57	740623.29	N 32 12 39.30	W 103 41 20.32
	247.24	0.46	190.68	247.24	-0.94	-0.93	0.65	0.42	441061.99	740623.42	N 32 12 39.29	W 103 41 20.32
	340.24	0.68	199.25	340.23	-1.82	-1.81	0.39	0.25	441061.11	740623.16	N 32 12 39.28	W 103 41 20.32
	434.34	0.73	198.41	434.32	-2.91	-2.91	0.02	0.05	441060.01	740622.79	N 32 12 39.27	W 103 41 20.33
	528.89	0.88	198.73	528.86	-4.16	-4.17	-0.40	0.16	441058.75	740622.37	N 32 12 39.26	W 103 41 20.33
	620.91	0.52	205.47	620.88	-5.20	-5.22	-0.81	0.40	441057.70	740621.96	N 32 12 39.25	W 103 41 20.34
	715.31	0.61	237.40	715.27	-5.84	-5.87	-1.42	0.34	441057.05	740621.35	N 32 12 39.24	W 103 41 20.34
	809.79	0.81	243.24	809.75	-6.40	-6.45	-2.44	0.22	441056.48	740620.33	N 32 12 39.24	W 103 41 20.35
	901.65	0.98	237.22	901.60	-7.09	-7.16	-3.68	0.21	441055.76	740619.09	N 32 12 39.23	W 103 41 20.37
	1001.00	0.87	244.45	1000.93	-7.85	-7.95	-5.07	0.16	441054.97	740617.70	N 32 12 39.22	W 103 41 20.39
	1141.00	0.76	237.89	1140.92	-8.76	-8.90	-6.82	0.10	441054.02	740615.95	N 32 12 39.21	W 103 41 20.41
	1324.00	0.13	77.68	1323.91	-9.35	-9.50	-7.64	0.48	441053.42	740615.13	N 32 12 39.21	W 103 41 20.42
	1505.00	0.13	127.57	1504.91	-9.44	-9.58	-7.28	0.06	441053.34	740615.49	N 32 12 39.21	W 103 41 20.41
	1885.00	0.13	32.05	1884.91	-9.39	-9.53	-7.01	0.11	441053.39	740615.78	N 32 12 39.21	W 103 41 20.41
	1870.00	0.13	330.38	1869.91	-9.03	-9.17	-7.00	0.07	441053.75	740615.77	N 32 12 39.21	W 103 41 20.41
	2059.00	0.08	90.94	2058.91	-8.85	-8.99	-6.97	0.10	441053.93	740615.80	N 32 12 39.21	W 103 41 20.41
	2154.00	0.08	107.29	2153.91	-8.87	-9.01	-6.85	0.02	441053.91	740615.92	N 32 12 39.21	W 103 41 20.41
	2248.00	0.08	20.64	2247.91	-8.83	-8.97	-6.76	0.12	441053.95	740616.01	N 32 12 39.21	W 103 41 20.41
	2342.00	0.13	274.30	2341.91	-8.76	-8.90	-6.84	0.18	441054.02	740615.93	N 32 12 39.21	W 103 41 20.41
	2437.00	0.11	280.47	2436.91	-8.73	-8.87	-7.04	0.03	441054.05	740615.73	N 32 12 39.21	W 103 41 20.41
	2532.00	0.11	151.16	2531.91	-8.80	-8.94	-7.09	0.21	441053.98	740615.88	N 32 12 39.21	W 103 41 20.41
	2626.00	0.00	287.44	2625.91	-8.88	-9.02	-7.04	0.12	441053.90	740615.73	N 32 12 39.21	W 103 41 20.41
	2721.00	0.00	289.08	2720.91	-8.88	-9.02	-7.04	0.00	441053.90	740615.73	N 32 12 39.21	W 103 41 20.41
	2816.00	0.00	250.85	2815.91	-8.88	-9.02	-7.04	0.00	441053.90	740615.73	N 32 12 39.21	W 103 41 20.41
	2910.00	0.09	219.61	2909.91	-8.92	-9.07	-7.08	0.09	441053.85	740615.69	N 32 12 39.21	W 103 41 20.41
	3005.00	0.11	252.27	3004.91	-9.00	-9.15	-7.21	0.08	441053.77	740615.56	N 32 12 39.21	W 103 41 20.41
	3009.00	0.11	141.52	3008.91	-9.10	-9.24	-7.24	0.19	441053.68	740615.53	N 32 12 39.21	W 103 41 20.41
	3184.00	0.18	175.31	3183.91	-9.32	-9.48	-7.17	0.11	441053.46	740615.60	N 32 12 39.21	W 103 41 20.41
	3289.00	0.13	165.49	3288.91	-9.57	-9.72	-7.13	0.06	441053.20	740615.64	N 32 12 39.20	W 103 41 20.41
	3383.00	0.06	236.61	3382.91	-9.70	-9.85	-7.15	0.13	441053.07	740615.62	N 32 12 39.20	W 103 41 20.41
	3478.00	0.11	103.43	3477.91	-9.75	-9.90	-7.10	0.17	441053.02	740615.67	N 32 12 39.20	W 103 41 20.41
	3573.00	0.13	238.56	3572.91	-9.83	-9.97	-7.11	0.23	441052.95	740615.67	N 32 12 39.20	W 103 41 20.41
	3667.00	0.06	108.10	3666.91	-9.90	-10.04	-7.15	0.19	441052.88	740615.62	N 32 12 39.20	W 103 41 20.41
	3762.00	0.13	263.33	3761.91	-9.93	-10.07	-7.21	0.20	441052.85	740615.56	N 32 12 39.20	W 103 41 20.41
	3857.00	0.06	237.47	3856.91	-9.96	-10.11	-7.36	0.08	441052.81	740615.41	N 32 12 39.20	W 103 41 20.41
	3952.00	0.20	176.44	3951.91	-10.16	-10.30	-7.39	0.19	441052.62	740615.38	N 32 12 39.20	W 103 41 20.41
	4046.00	0.20	165.60	4045.91	-10.48	-10.63	-7.34	0.04	441052.29	740615.43	N 32 12 39.20	W 103 41 20.41
	4141.00	0.08	145.15	4140.91	-10.70	-10.84	-7.26	0.13	441052.08	740615.51	N 32 12 39.19	W 103 41 20.41
	4236.00	0.23	217.06	4235.91	-10.90	-11.05	-7.34	0.23	441051.87	740615.43	N 32 12 39.19	W 103 41 20.41
	4330.00	0.25	196.00	4329.91	-11.24	-11.40	-7.51	0.10	441051.53	740615.26	N 32 12 39.19	W 103 41 20.41
	4425.00	0.18	185.70	4424.91	-11.59	-11.74	-7.58	0.08	441051.18	740615.19	N 32 12 39.18	W 103 41 20.41
	4520.00	0.18	220.29	4519.91	-11.84	-11.99	-7.68	0.11	441050.93	740615.09	N 32 12 39.18	W 103 41 20.42
	4614.00	0.13	271.81	4613.91	-11.93	-12.08	-7.87	0.14	441050.83	740614.90	N 32 12 39.18	W 103 41 20.42
	4709.00	0.13	247.58	4708.91	-11.97	-12.13	-8.08	0.06	441050.79	740614.69	N 32 12 39.18	W 103 41 20.42
	4804.00	0.06	125.39	4803.91	-12.03	-12.20	-8.14	0.18	441050.72	740614.63	N 32 12 39.18	W 103 41 20.42
	4898.00	0.08	59.79	4897.91	-12.03	-12.19	-8.04	0.08	441050.73	740614.73	N 32 12 39.18	W 103 41 20.42
	4993.00	0.13	215.41	4992.91	-12.09	-12.25	-8.05	0.22	441050.67	740614.72	N 32 12 39.18	W 103 41 20.42
	5088.00	0.06	15.27	5087.91	-12.12	-12.29	-8.09	0.20	441050.63	740614.68	N 32 12 39.18	W 103 41 20.42
	5183.00	0.08	57.60	5182.91	-12.04	-12.20	-8.03	0.06	441050.72	740614.74	N 32 12 39.18	W 103 41 20.42
	5277.00	0.08	8.40	5276.91	-11.94	-12.10	-7.96	0.07	441050.82	740614.81	N 32 12 39.18	W 103 41 20.42
	5372.00	0.08	153.39	5371.91	-11.94	-12.10	-7.92	0.16	441050.82	740614.85	N 32 12 39.18	W 103 41 20.42
	5467.00	0.06	90.24	5466.91	-12.00	-12.16	-7.84	0.08	441050.76	740614.93	N 32 12 39.18	W 103 41 20.42
	5561.00	0.06	280.73	5560.91	-11.99	-12.15	-7.84	0.13	441050.77	740614.93	N 32 12 39.18	W 103 41 20.42
	5656.00	0.06	298.23	5655.91	-11.96	-12.11	-7.93	0.02	441050.81	740614.84	N 32 12 39.18	W 103 41 20.42
	5751.00	0.11	269.42	5750.91	-11.83	-12.09	-8.07	0.07	441050.83	740614.70	N 32 12 39.18	W 103 41 20.42
	5846.00	0.13	238.25	5845.91	-11.88	-12.15	-8.25	0.07	441050.77	740614.52	N 32 12 39.18	W 103 41 20.42
	5940.00	0.06	221.37	5939.91	-12.07	-12.24	-8.37	0.08	441050.68	740614.40	N 32 12 39.18	W 103 41 20.42
	6035.00	0.06	354.65	6034.91	-12.06	-12.23	-8.41	0.12	441050.69	740614.36	N 32 12 39.18	W 103 41 20.42
	6130.00	0.06	59.20	6129.91	-11.99	-12.16	-8.37	0.07	441050.76	740614.40	N 32 12 39.18	W 103 41 20.42
	6225.00	0.06	217.38	6224.91	-12.00	-12.17	-8.36	0.12	441050.75	740614.41	N 32 12 39.18	W 103 41 20.42
	6319.00	0.08	338.24	6318.91	-11.98	-12.15	-8.42	0.13	441050.77	740614.35	N 32 12 39.18	W 103 41 20.42
	6508.00	0.08	263.76	6507.90	-11.87	-12.04	-8.60	0.05	441050.88	740614.17	N 32 12 39.18	W 103 41 20.43
	6603.00	0.18	110.46	6602.90	-11.93	-12.10	-8.52	0.27	441050.82	740614.25	N 32 12 39.18	W 103 41 20.43
	6698.00	0.13	147.56	6697.90	-12.08	-12.24	-8.32	0.12	441050.68	740614.45	N 32 12 39.18	W 103 41 20.42
	6792.00	0.08	309.19	6791.90	-12.12	-12.29	-8.32	0.22	441050.63	740614.45	N 32 12 39.18	W 103 41 20.42
	6887.00	0.13	247.11	6886.90	-12.12	-12.29	-8.47	0.12	441050.63	740614.30	N 32 12 39.18	W 103 41 20.43
	6981.00	0.13	209.29	6980.90	-12.25	-12.43	-8.62	0.09	441050.50	740614.15	N 32 12 39.18	W 103 41 20.43
	7076.00	0.06	282.68	7075.90	-12.33	-12.51	-8.72	0.13	441050.41	740614.05	N 32 12 39.18	W 103 41 20.43
	7170.00	0.06	172.04	7169.90	-12.37	-12.55	-8.76	0.10	441050.37	740614.01	N 32 12 39.18	W 103 41 20.43

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (NUS)	Easting (EUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7264.00	0.06	218.06	7263.90	-12.46	-12.63	-8.79	0.05	441050.29	740613.99	N 32 12 39.18 W 103 41 20.43	
	7359.00	0.11	198.31	7358.90	-12.58	-12.76	-8.84	0.06	441050.16	740613.93	N 32 12 39.17 W 103 41 20.43	
	7453.00	0.13	172.09	7452.90	-12.77	-12.95	-8.86	0.06	441049.97	740613.91	N 32 12 39.17 W 103 41 20.43	
	7547.00	0.00	207.92	7546.90	-12.88	-13.06	-8.84	0.14	441049.86	740613.93	N 32 12 39.17 W 103 41 20.43	
	7642.00	0.16	81.97	7641.90	-12.86	-13.04	-8.71	0.17	441049.88	740614.06	N 32 12 39.17 W 103 41 20.43	
	7737.00	0.08	50.69	7736.90	-12.81	-12.98	-8.53	0.11	441049.94	740614.24	N 32 12 39.17 W 103 41 20.43	
	7831.00	0.06	264.33	7830.90	-12.77	-12.94	-8.53	0.14	441049.88	740614.24	N 32 12 39.17 W 103 41 20.43	
	7928.00	0.11	259.17	7925.90	-12.79	-12.96	-8.67	0.05	441049.96	740614.10	N 32 12 39.17 W 103 41 20.43	
	8020.00	0.13	251.23	8019.90	-12.84	-13.01	-8.86	0.03	441049.91	740613.91	N 32 12 39.17 W 103 41 20.43	
	8115.00	0.13	266.08	8114.90	-12.87	-13.06	-9.07	0.04	441049.86	740613.70	N 32 12 39.17 W 103 41 20.43	
	8209.00	0.06	258.72	8208.90	-12.89	-13.07	-9.22	0.08	441049.85	740613.55	N 32 12 39.17 W 103 41 20.43	
	8304.00	0.06	257.05	8303.90	-12.91	-13.09	-9.32	0.00	441049.83	740613.45	N 32 12 39.17 W 103 41 20.44	
	8399.00	0.13	238.53	8398.90	-12.97	-13.16	-9.48	0.08	441049.76	740613.31	N 32 12 39.17 W 103 41 20.44	
	8494.00	0.06	299.12	8493.90	-13.00	-13.19	-9.59	0.12	441049.73	740613.18	N 32 12 39.17 W 103 41 20.44	
	8593.00	0.06	260.80	8592.90	-12.98	-13.18	-9.69	0.04	441049.74	740613.08	N 32 12 39.17 W 103 41 20.44	
	8687.00	0.06	352.94	8686.90	-12.94	-13.14	-9.74	0.09	441049.79	740613.03	N 32 12 39.17 W 103 41 20.44	
	8782.00	0.06	337.37	8781.90	-12.84	-13.04	-9.77	0.02	441049.88	740613.00	N 32 12 39.17 W 103 41 20.44	
	8887.00	0.17	328.24	8886.90	-12.86	-12.86	-9.87	0.11	441050.06	740612.90	N 32 12 39.17 W 103 41 20.44	
	8982.00	0.20	145.19	8981.90	-12.68	-12.87	-9.85	0.39	441050.05	740612.92	N 32 12 39.17 W 103 41 20.44	
	9077.00	0.28	223.37	9076.90	-12.98	-13.18	-9.92	0.33	441049.74	740612.85	N 32 12 39.17 W 103 41 20.44	
	9171.00	0.13	313.85	9170.90	-13.07	-13.27	-10.15	0.33	441049.65	740612.62	N 32 12 39.17 W 103 41 20.44	
	9266.00	0.64	191.84	9265.90	-13.51	-13.72	-10.34	0.76	441049.20	740612.43	N 32 12 39.17 W 103 41 20.45	
	9361.00	1.39	200.31	9360.88	-15.10	-15.32	-10.85	0.80	441047.60	740611.82	N 32 12 39.15 W 103 41 20.45	
	9455.00	1.78	202.78	9454.85	-17.49	-17.73	-11.81	0.42	441045.19	740610.96	N 32 12 39.13 W 103 41 20.46	
	9550.00	2.59	196.60	9549.78	-20.89	-21.15	-12.99	0.89	441041.77	740609.78	N 32 12 39.09 W 103 41 20.48	
	9645.00	3.23	203.25	9644.65	-25.37	-25.66	-14.66	0.76	441037.26	740608.11	N 32 12 39.05 W 103 41 20.50	
	9739.00	3.76	200.01	9738.48	-30.66	-30.99	-16.76	0.60	441031.93	740606.01	N 32 12 38.99 W 103 41 20.52	
	9834.00	3.95	199.93	9833.26	-36.61	-37.00	-18.94	0.20	441025.92	740603.83	N 32 12 38.94 W 103 41 20.55	
	9923.00	4.44	197.95	9922.03	-42.73	-43.16	-21.05	0.57	441019.77	740601.72	N 32 12 38.87 W 103 41 20.57	
	10018.00	4.52	198.10	10016.74	-49.78	-50.25	-23.22	0.17	441012.67	740599.55	N 32 12 38.80 W 103 41 20.60	
	10113.00	4.43	198.39	10111.45	-56.81	-57.33	-25.42	0.21	441005.59	740597.35	N 32 12 38.73 W 103 41 20.63	
	10207.00	4.26	201.18	10205.18	-63.47	-64.03	-27.82	0.29	440998.89	740594.95	N 32 12 38.67 W 103 41 20.65	
	10302.00	4.09	203.63	10299.92	-69.81	-70.42	-30.46	0.26	440992.50	740592.31	N 32 12 38.61 W 103 41 20.69	
	10397.00	4.59	205.97	10394.65	-76.27	-76.94	-33.48	0.56	440985.88	740589.29	N 32 12 38.54 W 103 41 20.72	
	10491.00	6.87	213.82	10488.18	-84.22	-85.00	-38.26	2.56	440977.93	740584.52	N 32 12 38.46 W 103 41 20.78	
	10586.00	9.07	218.78	10582.25	-94.63	-95.56	-40.11	2.42	440967.37	740576.66	N 32 12 38.36 W 103 41 20.87	
	10681.00	9.50	216.04	10678.01	-106.62	-107.73	-55.41	0.65	440955.19	740567.36	N 32 12 38.24 W 103 41 20.98	
	10775.00	9.31	214.73	10768.75	-118.96	-120.25	-64.31	0.30	440942.67	740558.46	N 32 12 38.11 W 103 41 21.08	
	10840.00	9.47	209.70	10832.88	-127.81	-129.22	-69.95	1.29	440933.71	740552.82	N 32 12 38.03 W 103 41 21.15	
	10984.00	9.12	206.46	10974.99	-148.10	-149.73	-80.91	0.44	440913.20	740541.87	N 32 12 37.82 W 103 41 21.28	
	11078.00	9.12	200.31	11067.80	-161.63	-163.38	-86.81	1.04	440899.54	740535.96	N 32 12 37.69 W 103 41 21.35	
	11173.00	7.29	197.23	11161.82	-174.36	-176.20	-91.21	1.98	440886.73	740531.58	N 32 12 37.56 W 103 41 21.40	
	11267.00	5.73	198.29	11255.22	-184.45	-186.35	-94.45	1.66	440876.57	740528.32	N 32 12 37.46 W 103 41 21.44	
	11362.00	4.97	198.32	11349.80	-192.80	-194.76	-97.23	0.80	440868.16	740525.54	N 32 12 37.38 W 103 41 21.47	
	11456.00	3.73	203.97	11443.53	-199.41	-201.42	-99.76	1.39	440851.51	740523.02	N 32 12 37.31 W 103 41 21.50	
	11543.00	4.63	314.18	11530.40	-199.48	-201.56	-103.43	7.90	440881.37	740519.35	N 32 12 37.30 W 103 41 21.54	
	11638.00	9.37	320.87	11624.67	-190.65	-192.89	-111.06	5.05	440870.04	740511.71	N 32 12 37.40 W 103 41 21.63	
	11735.00	15.64	327.74	11719.32	-173.22	-175.69	-123.04	8.63	440887.24	740499.74	N 32 12 37.57 W 103 41 21.77	
	11829.00	22.53	325.14	11808.10	-147.36	-150.16	-140.11	7.38	440912.76	740482.66	N 32 12 37.82 W 103 41 21.97	
	11924.00	29.40	336.54	11893.51	-110.75	-113.94	-160.21	8.65	440948.98	740462.57	N 32 12 38.18 W 103 41 22.20	
	12019.00	36.70	351.28	11973.23	-61.04	-64.50	-174.21	11.81	440998.42	740448.57	N 32 12 38.67 W 103 41 22.36	
	12113.00	47.56	356.33	12042.86	1.66	-1.92	-180.71	12.09	441061.00	740442.07	N 32 12 39.29 W 103 41 22.43	
	12208.00	59.34	1.49	12099.36	77.80	74.21	-181.90	13.14	441137.13	740440.88	N 32 12 40.05 W 103 41 22.44	
	12303.00	73.34	4.94	12137.40	164.32	160.85	-176.89	15.10	441223.76	740445.89	N 32 12 40.90 W 103 41 22.37	
	12397.00	86.86	4.90	12153.52	256.19	252.90	-168.97	14.38	441315.80	740453.81	N 32 12 41.81 W 103 41 22.27	
	12448.00	87.59	4.64	12155.89	306.86	303.66	-164.73	1.52	441366.56	740458.05	N 32 12 42.31 W 103 41 22.22	
	12554.00	89.38	3.55	12158.79	412.38	409.35	-157.16	1.98	441472.25	740465.61	N 32 12 43.36 W 103 41 22.13	
	12744.00	90.22	360.00	12159.46	602.10	599.22	-151.28	1.92	441662.11	740471.50	N 32 12 45.24 W 103 41 22.04	
	12933.00	89.89	358.35	12159.27	791.09	788.19	-154.00	0.89	441851.08	740468.78	N 32 12 47.11 W 103 41 22.06	
	13122.00	89.89	358.66	12159.64	980.08	977.13	-158.93	0.16	442040.00	740463.85	N 32 12 48.98 W 103 41 22.11	
	13217.00	90.11	358.77	12159.64	1075.08	1072.11	-161.06	0.26	442134.97	740461.72	N 32 12 49.92 W 103 41 22.13	
	13312.00	89.89	359.06	12159.64	1170.08	1167.09	-162.86	0.38	442229.95	740459.92	N 32 12 50.86 W 103 41 22.14	
	13406.00	89.89	359.65	12159.62	1264.08	1261.08	-163.92	0.63	442323.94	740458.66	N 32 12 51.79 W 103 41 22.15	
	13501.00	90.00	359.30	12159.91	1359.07	1356.08	-164.79	0.39	442418.93	740457.99	N 32 12 52.73 W 103 41 22.15	
	13596.00	90.17	359.50	12159.77	1454.07	1451.07	-165.78	0.28	442513.92	740456.99	N 32 12 53.67 W 103 41 22.15	
	13690.00	90.00	358.89	12159.63	1548.07	1545.06	-167.11	0.67	442607.91	740455.67	N 32 12 54.60 W 103 41 22.16	
	13785.00	90.06	358.81	12159.58	1643.07	1640.04	-169.01	0.11	442702.89	740453.77	N 32 12 55.54 W 103 41 22.18	
	13880.00	90.17	359.16	12159.39	1738.07	1735.03	-170.69	0.39	442797.87	740452.08	N 32 12 56.48 W 103 41 22.19	
	13974.00	90.11	359.32	12159.16	1832.06	1829.02	-171.84	0.18	442891.85	740450.84	N 32 12 57.41 W 103 41 22.20	
	14069.00	90.06	359.40	12159.02	1927.06	1924.01	-173.00	0.10	442986.84	740449.78	N 32 12 58.35 W 103 41 22.21	
	14258.00	90.17	359.19	12158.64	2116.05	2113.00	-175.33	0.13	443175.82	740447.45	N 32 13 0.22 W 103 41 22.22	
	14353.00	90.84	359.31	12157.80	2211.05	2207.99	-176.57	0.72	443270.80	740446.21	N 32 13 1.16 W 103 41 22.23	
	14448.00	90.06	359.60	12157.05	2306.04	2302.98	-177.48	0.88	443365.79	740445.30	N 32 13 2.10 W 103 41 22.23	
	14637.00	90.34	359.41	12156.39	2495.03	2491.97	-179.11	0.18	443554.77	740443.67	N 32 13 3.97 W 103 41 22.24	
	14826.00	90.17	359.73	12155.55	2684.01	2680.96	-180.53	0.19	443743.76	740442.25	N 32 13 5.84 W 103 41 22.24	
	14921.00	89.50	1.20	12155.83	2778.97	2775.96	-179.76	1.70	443838.74	740443.02	N 32 13 6.78 W 103 41 22.22	
	15110.00	89.78	0.68	12157.01	2967.84	2964.93	-178.66	0.31	444027.70	740446.12	N 32 13 8.65 W 103 41 22.18	
	15205.00	89.27	359.06									

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	17849.00	90.34	357.17	12166.00	5705.21	5702.62	-187.38	2.17	446765.27	740435.40	N 32 13 35.74 W	103 41 22.11
	17944.00	90.95	357.99	12164.93	5800.18	5797.53	-191.39	1.08	446880.17	740431.39	N 32 13 36.68 W	103 41 22.15
	18038.00	90.34	357.14	12163.87	5894.15	5891.44	-195.39	1.11	446954.08	740427.39	N 32 13 37.61 W	103 41 22.19
	18133.00	90.28	357.45	12163.35	5989.11	5986.33	-199.87	0.33	447048.97	740422.91	N 32 13 38.55 W	103 41 22.23
	18228.00	90.90	356.52	12162.38	6084.05	6081.19	-204.87	1.18	447143.82	740417.91	N 32 13 39.49 W	103 41 22.29
	18322.00	91.57	358.19	12160.35	6178.00	6175.07	-209.20	1.91	447237.69	740413.58	N 32 13 40.41 W	103 41 22.33
	18417.00	90.84	358.51	12158.35	6272.97	6270.00	-211.94	0.84	447332.63	740410.84	N 32 13 41.35 W	103 41 22.36
	18512.00	90.84	359.26	12156.98	6367.96	6364.98	-213.79	0.79	447427.59	740408.99	N 32 13 42.29 W	103 41 22.37
	18696.00	90.11	0.03	12155.43	6551.93	6548.96	-214.93	0.58	447611.57	740407.86	N 32 13 44.11 W	103 41 22.37
	18791.00	90.11	0.04	12155.25	6646.91	6643.96	-214.87	0.01	447706.57	740407.91	N 32 13 45.05 W	103 41 22.38
	18885.00	91.07	359.88	12154.28	6740.89	6737.98	-214.93	1.04	447800.58	740407.85	N 32 13 45.98 W	103 41 22.36
	18979.00	92.25	359.86	12151.56	6834.83	6831.91	-215.15	1.26	447894.51	740407.63	N 32 13 46.91 W	103 41 22.35
	19168.00	91.80	0.80	12144.88	7023.66	7020.79	-214.39	0.46	448083.38	740408.39	N 32 13 48.78 W	103 41 22.33
	19263.00	91.46	359.87	12142.18	7118.60	7115.75	-214.00	0.85	448178.34	740408.78	N 32 13 49.72 W	103 41 22.32
	19357.00	91.74	0.50	12139.56	7212.53	7209.72	-213.69	0.73	448272.29	740409.09	N 32 13 50.65 W	103 41 22.31
	19547.00	91.52	0.52	12134.15	7402.38	7399.63	-212.00	0.12	448462.20	740410.78	N 32 13 52.53 W	103 41 22.28
	19642.00	91.74	1.13	12131.45	7497.28	7494.58	-210.64	0.68	448557.15	740412.14	N 32 13 53.47 W	103 41 22.25
	19736.00	91.63	1.41	12128.68	7591.16	7588.52	-208.55	0.32	448651.08	740414.23	N 32 13 54.40 W	103 41 22.22
	19831.00	90.56	359.69	12126.87	7686.10	7683.49	-207.64	2.13	448746.05	740415.14	N 32 13 55.34 W	103 41 22.21
	19926.00	92.08	1.04	12124.68	7781.03	7778.46	-207.04	2.14	448841.01	740415.74	N 32 13 56.28 W	103 41 22.19
	20115.00	91.80	0.10	12118.28	7969.84	7967.34	-205.16	0.52	449029.88	740417.62	N 32 13 58.15 W	103 41 22.16
	20210.00	91.46	0.33	12115.58	8064.77	8062.30	-204.80	0.43	449124.84	740417.98	N 32 13 59.09 W	103 41 22.15
	20399.00	91.80	0.90	12110.20	8253.61	8251.21	-202.78	0.35	449313.74	740420.00	N 32 14 0.96 W	103 41 22.11
	20494.00	92.53	0.65	12106.62	8348.49	8346.14	-201.49	0.81	449408.66	740421.29	N 32 14 1.90 W	103 41 22.09
	20683.00	91.74	1.37	12099.57	8537.22	8534.97	-198.16	0.57	449597.49	740424.62	N 32 14 3.77 W	103 41 22.04
	20778.00	91.74	0.92	12096.69	8632.10	8629.91	-196.26	0.47	449692.42	740426.52	N 32 14 4.70 W	103 41 22.01
	20873.00	91.57	0.72	12093.95	8727.01	8724.86	-194.91	0.28	449787.37	740427.87	N 32 14 5.64 W	103 41 21.99
	20968.00	91.91	0.87	12091.06	8821.91	8819.81	-193.59	0.39	449882.31	740429.19	N 32 14 6.58 W	103 41 21.96
	21062.00	92.03	1.19	12087.83	8915.79	8913.74	-191.90	0.36	449976.23	740430.88	N 32 14 7.51 W	103 41 21.94
	21157.00	91.97	2.43	12084.51	9010.60	9008.63	-189.90	1.31	450071.12	740433.88	N 32 14 8.45 W	103 41 21.90
	21251.00	91.63	1.55	12081.56	9104.42	9102.52	-185.64	1.00	450165.01	740437.14	N 32 14 9.38 W	103 41 21.85
	21439.00	92.19	1.16	12075.30	9292.13	9290.37	-181.19	0.36	450352.85	740441.58	N 32 14 11.24 W	103 41 21.79
	21533.00	91.41	359.35	12072.34	9386.05	9384.31	-180.78	2.10	450446.79	740442.00	N 32 14 12.17 W	103 41 21.78
	21627.00	91.80	359.64	12069.71	9480.01	9478.27	-181.60	0.52	450540.74	740441.17	N 32 14 13.10 W	103 41 21.78
	21720.00	90.90	357.29	12067.52	9572.98	9571.21	-184.10	2.71	450633.67	740438.68	N 32 14 14.02 W	103 41 21.80
	21908.00	91.91	357.88	12062.91	9760.87	9758.98	-192.02	0.62	450821.44	740430.76	N 32 14 15.88 W	103 41 21.88
	22096.00	91.24	357.11	12057.74	9948.74	9946.73	-200.23	0.54	451009.18	740422.55	N 32 14 17.73 W	103 41 21.96
	22190.00	91.01	357.20	12055.90	10042.68	10040.59	-204.89	0.26	451103.04	740417.89	N 32 14 18.66 W	103 41 22.01
Final MWD	22246.00	91.52	357.80	12054.66	10098.65	10096.53	-207.34	1.41	451158.97	740415.44	N 32 14 19.22 W	103 41 22.03
Proj. to Bit	22281.00	91.52	357.80	12053.73	10133.63	10131.49	-208.68	0.00	451193.93	740414.10	N 32 14 19.56 W	103 41 22.05

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	26.500	1/88.425	30.000	NAL_NSG+MSHOT-Depth Only	ST01 / Oxy Mesa Verde WC Unit 1H ST01 Gyro+MWD 0-22.281'
	1	26.500	26.500	Act Stns	30.000	NAL_NSG+MSHOT-Depth Only	ST01 / Oxy Mesa Verde WC Unit 1H ST01 Gyro+MWD 0-22.281'
	1	26.500	901.650	Act Stns	30.000	NAL_NSG+MSHOT	ST01 / Oxy Mesa Verde WC Unit 1H ST01 Gyro+MWD 0-22.281'
	1	901.650	22281.000	Act Stns	30.000	NAL_MWD_PLUS_0.5_DEG	ST01 / Oxy Mesa Verde WC Unit 1H ST01 Gyro+MWD 0-22.281'

OXY USA Inc.
Mesa Verde Wolfcamp Unit 1H
API No. 30-025-44195

