

30-025-45862

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

July 31, 2019

Oxy USA Incorporated
5 Greenway Plaza, Suite 110
Houston, TX 77046

Re:

CLIENT: Oxy USA Incorporated
WELL: MESA VERDE WC UNIT 5H
FIELD: MESA VERDE WOLFCAMP

S17, T24S, R32E Lea, NM
N 32.2109841 W -103.6974183

RIG: H&P 635
COUNTY: LEA
API NO: 30-025-45862
JOB NO: 19MLH0271

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.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
JOSEPH AJAYI FE	MESA VERDE WC UNIT 5H Original Hole	1064.00 Ft to 22463.00 Ft	June 16, 2019 to July 24, 2019	SlimPulse Third Party Corrected

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

ANDREW SALOMON
Field Service Manager

Schlumberger-Private

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:
S17, T24S, R32E Lea, NM
N 32.2109841 W -103.6974183

I, JOSEPH AJAYI certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of June 16, 2019 through July 24, 2019, conduct or supervise the taking of the SlimPulse & Third Party Corrected surveys from a depth of 1064.00 feet to a depth of 22463.00 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, Incorporated for the MESA VERDE WC UNIT 5H Well (Original Hole) API No. 30-025-45862 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.

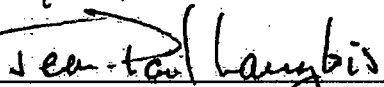
By
JOSEPH AJAYI
FE



Subscribed and Sworn to before me this 5 day of August (month) 2019 (yr)

My Commission expires:

6/14/2023

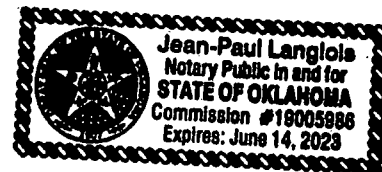


(signature)

Notary Public

Comanche Oklahoma

(County State)





Vertical Section (ft) Azim = 3.27° Scale = 1:1800.00(ft) Origin = 0N/-S, 0E/-W

Schlumberger

Oxy Mesa Verde WC Unit 5H Gyro + MWD 0-22505' MD Survey Geodetic Report (Def Survey)



Report Date: July 24, 2019 - 04:14 PM
 Client: OXY
 Field: NM Lea County (NAD 83)
 Structure / Slot: Oxy Mesa Verde WC Unit 5H / Oxy Mesa Verde WC Unit 5H
 Well: Oxy Mesa Verde WC Unit 5H
 Borehole: Original Borehole
 UWI / API#: Unknown / 30-025-45862
 Survey Name: Oxy Mesa Verde WC Unit 5H Gyro + MWD 0-22505' MD
 Survey Date: June 04, 2019
 Tort / AHD / DDI / ERD Ratio: 256.919 * / 11150.994 ft / 6.722 / 0.912
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 12' 39.54280", W 103° 41' 50.68950"
 Location Grid N/E Y/X: N 441071.890 RUS, E 738014.000 RUS
 CRS Grid Convergence Angle: 0.3390 *
 Grid Scale Factor: 0.99995339
 Version / Patch: 2.10.760.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 3.272 * (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 TVD Reference Elevation: 3586.600 ft above MSL
 Seabed / Ground Elevation: 3560.100 ft above MSL
 Magnetic Declination: 6.660 *
 Total Gravity Field Strength: 988.4317 mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 47888.700 nT
 Magnetic Dip Angle: 59.838 *
 Declination Date: July 09, 2019
 Magnetic Declination Model: IFR1
 North Reference: Grid North
 Grid Convergence Used: 0.3390 *
 Total Corr Mag North->Grid North: 6.3210 *
 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/S ° ' ")	Longitude (E/W ° ' ")
RKB SHL	0.00	0.00	3.27	0.00	0.00	0.00	0.00	N/A	441071.89	738014.00	N 32 12 39.54	W 103 41 50.69
	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	441071.89	738014.00	N 32 12 39.54	W 103 41 50.69
	99.00	0.17	130.98	99.00	-0.07	-0.07	0.08	0.23	441071.82	738014.08	N 32 12 39.54	W 103 41 50.69
	127.00	0.09	179.97	127.00	-0.11	-0.12	0.11	0.46	441071.77	738014.11	N 32 12 39.54	W 103 41 50.69
	156.00	0.13	125.82	156.00	-0.15	-0.16	0.14	0.37	441071.73	738014.14	N 32 12 39.54	W 103 41 50.69
	185.00	0.34	114.70	185.00	-0.20	-0.22	0.24	0.74	441071.67	738014.24	N 32 12 39.54	W 103 41 50.69
	212.00	0.24	118.39	212.00	-0.26	-0.28	0.37	0.38	441071.61	738014.37	N 32 12 39.54	W 103 41 50.69
	237.00	0.22	115.11	237.00	-0.30	-0.32	0.46	0.10	441071.57	738014.46	N 32 12 39.54	W 103 41 50.68
	267.00	0.22	114.91	267.00	-0.34	-0.37	0.56	0.00	441071.52	738014.56	N 32 12 39.54	W 103 41 50.68
	298.00	0.18	111.45	298.00	-0.38	-0.41	0.68	0.13	441071.48	738014.66	N 32 12 39.54	W 103 41 50.68
Last Gyro	330.00	0.10	112.42	330.00	-0.40	-0.44	0.73	0.25	441071.45	738014.73	N 32 12 39.54	W 103 41 50.68
	361.00	0.10	64.18	361.00	-0.40	-0.44	0.78	0.26	441071.45	738014.78	N 32 12 39.54	W 103 41 50.68
	393.00	0.09	128.62	393.00	-0.40	-0.45	0.83	0.32	441071.44	738014.83	N 32 12 39.54	W 103 41 50.68
	424.00	0.07	141.05	424.00	-0.43	-0.48	0.86	0.09	441071.41	738014.86	N 32 12 39.54	W 103 41 50.68
	456.00	0.09	173.95	456.00	-0.48	-0.52	0.87	0.15	441071.37	738014.87	N 32 12 39.54	W 103 41 50.68
	488.00	0.10	165.17	488.00	-0.52	-0.57	0.88	0.06	441071.32	738014.88	N 32 12 39.54	W 103 41 50.68
	519.00	0.11	183.27	519.00	-0.57	-0.62	0.89	0.11	441071.27	738014.89	N 32 12 39.54	W 103 41 50.68
	551.00	0.11	199.18	551.00	-0.63	-0.68	0.88	0.10	441071.21	738014.88	N 32 12 39.54	W 103 41 50.68
	583.00	0.18	198.59	583.00	-0.70	-0.75	0.85	0.16	441071.14	738014.85	N 32 12 39.54	W 103 41 50.68
	614.00	0.16	198.30	614.00	-0.79	-0.84	0.82	0.00	441071.05	738014.82	N 32 12 39.53	W 103 41 50.68
646.00	0.23	224.54	646.00	-0.88	-0.92	0.76	0.35	441070.97	738014.76	N 32 12 39.53	W 103 41 50.68	
677.00	0.18	215.49	677.00	-0.97	-1.01	0.69	0.19	441070.88	738014.69	N 32 12 39.53	W 103 41 50.68	
709.00	0.17	211.97	709.00	-1.05	-1.09	0.64	0.05	441070.80	738014.64	N 32 12 39.53	W 103 41 50.68	
740.00	0.15	207.72	740.00	-1.13	-1.16	0.60	0.07	441070.73	738014.60	N 32 12 39.53	W 103 41 50.68	
772.00	0.11	226.37	772.00	-1.19	-1.22	0.55	0.18	441070.67	738014.55	N 32 12 39.53	W 103 41 50.68	
803.00	0.07	226.55	803.00	-1.22	-1.26	0.52	0.13	441070.63	738014.52	N 32 12 39.53	W 103 41 50.68	
835.00	0.13	203.64	835.00	-1.27	-1.30	0.49	0.22	441070.59	738014.49	N 32 12 39.53	W 103 41 50.68	
866.00	0.09	216.30	866.00	-1.33	-1.36	0.46	0.15	441070.53	738014.46	N 32 12 39.53	W 103 41 50.68	
898.00	0.11	193.65	898.00	-1.38	-1.41	0.44	0.14	441070.48	738014.44	N 32 12 39.53	W 103 41 50.68	
929.00	0.11	193.53	929.00	-1.44	-1.46	0.42	0.00	441070.43	738014.42	N 32 12 39.53	W 103 41 50.68	
937.00	0.09	204.02	937.00	-1.45	-1.48	0.42	0.34	441070.41	738014.42	N 32 12 39.53	W 103 41 50.68	
1064.00	0.02	75.72	1064.00	-1.54	-1.56	0.40	0.08	441070.33	738014.40	N 32 12 39.53	W 103 41 50.68	
1156.00	0.09	280.33	1156.00	-1.52	-1.55	0.35	0.12	441070.35	738014.35	N 32 12 39.53	W 103 41 50.69	
1249.00	0.02	44.59	1249.00	-1.50	-1.52	0.29	0.11	441070.37	738014.29	N 32 12 39.53	W 103 41 50.69	
1434.00	0.02	183.96	1434.00	-1.51	-1.53	0.31	0.02	441070.38	738014.31	N 32 12 39.53	W 103 41 50.69	
1618.00	0.07	128.58	1618.00	-1.61	-1.63	0.39	0.03	441070.28	738014.39	N 32 12 39.53	W 103 41 50.69	
1807.00	0.02	182.48	1807.00	-1.71	-1.74	0.48	0.03	441070.15	738014.48	N 32 12 39.53	W 103 41 50.68	
1901.00	0.02	345.31	1901.00	-1.71	-1.74	0.48	0.04	441070.15	738014.48	N 32 12 39.53	W 103 41 50.68	
1995.00	0.02	176.10	1995.00	-1.71	-1.74	0.47	0.04	441070.15	738014.47	N 32 12 39.53	W 103 41 50.68	
2090.00	0.05	249.67	2090.00	-1.74	-1.77	0.43	0.05	441070.12	738014.43	N 32 12 39.53	W 103 41 50.68	
2184.00	0.05	185.84	2184.00	-1.80	-1.82	0.39	0.06	441070.07	738014.39	N 32 12 39.52	W 103 41 50.69	
2279.00	0.03	277.85	2279.00	-1.84	-1.86	0.36	0.08	441070.03	738014.36	N 32 12 39.52	W 103 41 50.69	
2373.00	0.05	200.90	2373.00	-1.87	-1.90	0.32	0.06	441069.99	738014.32	N 32 12 39.52	W 103 41 50.69	
2562.00	0.05	290.97	2562.00	-1.93	-1.94	0.22	0.04	441069.95	738014.22	N 32 12 39.52	W 103 41 50.69	
2656.00	0.02	260.76	2656.00	-1.92	-1.93	0.16	0.04	441069.96	738014.16	N 32 12 39.52	W 103 41 50.69	
2845.00	0.02	176.34	2845.00	-1.96	-1.97	0.13	0.01	441069.92	738014.13	N 32 12 39.52	W 103 41 50.69	
3034.00	0.02	267.37	3034.00	-2.00	-2.00	0.10	0.02	441069.89	738014.10	N 32 12 39.52	W 103 41 50.69	
3225.00	0.02	5.24	3225.00	-1.97	-1.97	0.07	0.02	441069.92	738014.07	N 32 12 39.52	W 103 41 50.69	
3414.00	0.03	286.98	3414.00	-1.92	-1.93	0.03	0.02	441069.96	738014.03	N 32 12 39.52	W 103 41 50.69	
3602.00	0.02	170.22	3602.00	-1.94	-1.94	-0.01	0.02	441069.95	738013.99	N 32 12 39.52	W 103 41 50.69	
3791.00	0.02	7.22	3791.00	-1.94	-1.94	0.00	0.02	441069.95	738014.00	N 32 12 39.52	W 103 41 50.69	
3979.00	0.02	23.36	3979.00	-1.88	-1.88	0.01	0.00	441070.01	738014.01	N 32 12 39.52	W 103 41 50.69	
4168.00	0.03	123.74	4168.00	-1.87	-1.88	0.07	0.02	441070.01	738014.07	N 32 12 39.52	W 103 41 50.69	
4357.00	0.06	215.11	4357.00	-1.98	-1.99	0.05	0.04	441069.90	738014.05	N 32 12 39.52	W 103 41 50.69	
4546.00	0.02	77.51	4546.00	-2.06	-2.06	0.03	0.04	441069.83	738014.03	N 32 12 39.52	W 103 41 50.69	
4734.00	0.05	286.41	4734.00	-2.03	-2.03	-0.02	0.04	441069.88	738013.98	N 32 12 39.52	W 103 41 50.69	
4921.00	0.02	264.88	4921.00	-2.01	-2.01	-0.13	0.02	441069.88	738013.87	N 32 12 39.52	W 103 41 50.69	
5110.00	0.05	156.69	5110.00	-2.09	-2.09	-0.13	0.03	441069.80	738013.87	N 32 12 39.52	W 103 41 50.69	
5204.00	0.02	354.35	5204.00	-2.11	-2.11	-0.12	0.07	441069.78	738013.88	N 32 12 39.52	W 103 41 50.69	
5298.00	0.02	354.08	5298.00	-2.08	-2.08	-0.12	0.00	441069.81	738013.88	N 32 12 39.52	W 103 41 50.69	
5394.00	0.02	191.98	5394.00	-2.08	-2.08	-0.12	0.04	441069.81	738013.88	N 32 12 39.52	W 103 41 50.69	
5487.00	0.07	228.53	5487.00	-2.14	-2.13	-0.17	0.06	441069.78	738013.83	N 32 12 39.52	W 103 41 50.69	
5676.00	0.03	198.86	5676.00	-2.27	-2.25	-0.27	0.02	441069.84	738013.73	N 32 12 39.52	W 103 41 50.69	
5864.00	0.05	10.05	5864.00	-2.23	-2.22	-0.27	0.04	441069.87	738013.73	N 32 12 39.52	W 103 41 50.69	
5958.00	0.05	238.50	5958.00	-2.21	-2.20	-0.30	0.10	441069.69	738013.70	N 32 12 39.52	W 103 41 50.69	
6147.00	0.02	243.97	6147.00	-2.28	-2.26	-0.40	0.02	441069.63	738013.60	N 32 12 39.52	W 103 41 50.69	
6241.00	0.02	302.70	6241.00	-2.28	-2.26	-0.43	0.02	441069.63	738013.57	N 32 12 39.52	W 103 41 50.69	
6430.00	0.02	181.63	6430.00	-2.29	-2.27	-0.46	0.02	441069.62	738013.54	N 32 12 39.52	W 103 41 50.70	
6524.00	0.05	110.72	6524.00	-2.32	-2.30	-0.42	0.05	441069.59	738013.58	N 32 12 39.52	W 103 41 50.69	
6618.00	0.05	228.65	6618.00	-2.36	-2.34	-0.41	0.09	441069.55	738013.59	N 32 12 39.52	W 103 41 50.69	
6713.00	0.02	52.09	6713.00	-2.38	-2.36	-0.43	0.07	441069.53	738013.57	N 32 12 39.52	W 103 41 50.69	
6904.00	1.67	92.41	6903.97	-2.32	-2.46	2.37	0.87	441069.43	738016.37	N 32 12 39.52	W 103 41 50.68	
6998.00	0.05	299.85	6997.96	-2.28	-2.49	3.71	1.82	441069.40	738017.71	N 32 12 39.52	W 103 41 50.65	
7187.00	0.07	323.72	7186.96	-2.15	-2.38	3.57	0.02	441069.53	738017.57	N 32 12 39.52	W 103 41 50.65	
7375.00	0.05	168.97	7374.96	-2.14	-2.35	3.52	0.06	441069.54	738017.52	N 32 12 39.52	W 103 41 50.65	
7469.00	0.02	150.54	7468.96	-2.20	-2.40	3.53	0.03	441069.49	738017.53	N 32 12 39.52	W 103 41 50.65	
7658.00	0.05	295.06	7657.96	-2.20	-2.							

Comments	MD (ft)	Incl (°)	Azin Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLB (ft/100m)	Northings (ft)	Easting (ft)	Latitude (N/S)	Longitude (E/W)
	7840.00	4.20	145.10	7938.78	-6.75	-7.28	8.80	1.85	441064.83	738022.80	N 32 12 39.47	W 103 41 50.59
	8032.00	5.98	147.69	8031.40	-13.28	-14.06	13.28	1.93	441057.88	738027.28	N 32 12 39.40	W 103 41 50.54
	8124.00	6.36	147.84	8122.87	-21.32	-22.42	18.55	0.44	441049.48	738032.55	N 32 12 39.32	W 103 41 50.48
	8219.00	6.86	138.39	8217.26	-29.51	-30.99	25.01	1.17	441040.90	738039.01	N 32 12 39.23	W 103 41 50.40
	8313.00	6.79	130.22	8310.61	-36.71	-38.65	32.87	1.03	441033.24	738046.87	N 32 12 39.16	W 103 41 50.31
	8407.00	7.34	123.33	8403.90	-43.06	-45.54	42.13	1.07	441026.35	738056.13	N 32 12 39.09	W 103 41 50.20
	8502.00	7.64	117.53	8498.09	-48.70	-51.79	52.80	0.86	441020.10	738066.80	N 32 12 39.03	W 103 41 50.08
	8596.00	7.30	113.08	8591.29	-53.29	-57.02	63.84	0.71	441014.87	738077.83	N 32 12 38.97	W 103 41 49.95
	8785.00	7.69	107.59	8778.68	-60.48	-65.55	86.94	0.43	441006.34	738100.93	N 32 12 38.89	W 103 41 49.88
	8879.00	8.01	107.34	8871.80	-63.83	-69.40	99.18	0.34	441002.49	738113.18	N 32 12 38.85	W 103 41 49.54
	8974.00	9.33	109.04	8965.71	-67.33	-73.89	112.78	1.42	440998.00	738126.78	N 32 12 38.81	W 103 41 49.38
	9068.00	10.16	106.76	9058.36	-71.34	-78.77	127.92	0.97	440993.13	738141.92	N 32 12 38.76	W 103 41 49.21
	9162.00	10.16	104.42	9150.88	-74.87	-83.22	143.89	0.44	440988.67	738157.89	N 32 12 38.71	W 103 41 49.02
	9257.00	9.89	101.29	9244.43	-77.63	-86.91	160.01	0.64	440984.99	738174.00	N 32 12 38.67	W 103 41 48.83
	9351.00	9.74	99.77	9337.06	-79.66	-89.84	175.76	0.32	440982.06	738189.75	N 32 12 38.64	W 103 41 48.65
	9540.00	10.14	103.98	9523.22	-84.56	-96.57	207.68	0.44	440975.33	738221.65	N 32 12 38.58	W 103 41 48.28
	9634.00	10.85	109.23	9615.65	-88.53	-101.48	224.04	1.27	440970.41	738238.03	N 32 12 38.53	W 103 41 48.09
	9729.00	10.83	108.37	9708.96	-93.31	-107.24	240.98	0.17	440964.66	738254.95	N 32 12 38.47	W 103 41 47.89
	9823.00	10.81	108.93	9801.29	-97.99	-112.88	257.68	0.11	440959.01	738271.66	N 32 12 38.41	W 103 41 47.70
	9918.00	10.74	108.67	9894.61	-102.74	-118.61	274.49	0.09	440953.29	738288.48	N 32 12 38.35	W 103 41 47.50
	10012.00	10.36	111.07	9987.02	-107.65	-124.45	290.87	0.62	440947.45	738304.66	N 32 12 38.29	W 103 41 47.31
	10106.00	10.44	109.46	10079.48	-112.61	-130.32	306.59	0.32	440941.57	738320.58	N 32 12 38.24	W 103 41 47.13
	10201.00	10.24	109.02	10172.83	-117.30	-135.94	322.69	0.23	440935.95	738336.67	N 32 12 38.18	W 103 41 46.94
	10295.00	10.69	110.64	10265.37	-122.17	-141.74	338.75	0.57	440930.16	738352.73	N 32 12 38.12	W 103 41 46.76
	10389.00	10.76	112.23	10357.73	-127.63	-148.13	355.03	0.32	440923.77	738369.01	N 32 12 38.06	W 103 41 46.57
	10484.00	10.77	119.26	10451.08	-134.40	-155.83	370.98	1.38	440916.07	738384.96	N 32 12 37.98	W 103 41 46.38
	10578.00	10.83	119.78	10543.40	-142.19	-164.50	386.31	0.12	440907.39	738400.29	N 32 12 37.89	W 103 41 46.20
	10672.00	10.94	119.49	10635.71	-150.07	-173.28	401.74	0.13	440898.62	738415.72	N 32 12 37.80	W 103 41 46.03
	10861.00	10.52	120.72	10821.40	-165.95	-190.92	432.18	0.25	440880.97	738446.16	N 32 12 37.63	W 103 41 45.67
	10955.00	10.43	119.55	10913.83	-173.87	-199.50	446.96	0.25	440872.40	738460.94	N 32 12 37.54	W 103 41 45.50
	11050.00	10.32	119.91	11007.28	-181.29	-207.99	461.82	0.13	440863.91	738475.80	N 32 12 37.46	W 103 41 45.33
	11144.00	10.71	122.40	11099.70	-189.32	-216.87	476.49	0.64	440855.03	738490.47	N 32 12 37.37	W 103 41 45.18
	11333.00	10.41	102.05	11285.57	-200.47	-228.85	508.03	1.97	440842.05	738522.00	N 32 12 37.24	W 103 41 44.79
	11427.00	9.65	101.29	11378.13	-202.87	-233.16	524.06	0.82	440838.74	738538.03	N 32 12 37.20	W 103 41 44.81
	11522.00	10.41	98.58	11471.68	-204.77	-238.00	540.38	0.94	440835.90	738554.33	N 32 12 37.18	W 103 41 44.42
	11672.00	17.54	47.26	11671.64	-189.69	-222.82	570.50	0.09	440849.28	738584.47	N 32 12 37.31	W 103 41 44.08
	11767.00	19.88	25.12	11707.73	-164.37	-198.25	587.89	7.82	440873.65	738601.87	N 32 12 37.55	W 103 41 43.88
KOP Actual	11840.00	24.56	24.43	11775.29	-138.68	-173.18	599.44	6.42	440899.72	738613.41	N 32 12 37.79	W 103 41 43.72
100' FSL Crossed	11862.00	25.97	24.27	11795.19	-129.92	-164.83	603.31	6.42	440907.27	738617.29	N 32 12 37.88	W 103 41 43.68
	11956.00	30.36	25.79	11878.04	-88.74	-124.46	622.12	4.73	440947.44	738636.09	N 32 12 38.27	W 103 41 43.48
	12050.00	34.08	18.73	11997.58	-41.38	-76.09	640.92	5.62	440993.80	738654.89	N 32 12 38.73	W 103 41 43.24
	12145.00	36.90	12.88	12034.94	12.42	-25.06	655.84	4.64	441046.84	738669.80	N 32 12 39.26	W 103 41 43.08
	12240.00	43.85	10.16	12107.28	73.29	35.22	668.01	7.55	441107.10	738681.88	N 32 12 39.85	W 103 41 42.91
	12335.00	58.05	0.20	12166.46	147.13	108.84	674.00	17.85	441180.72	738697.97	N 32 12 40.58	W 103 41 42.84
	12429.00	75.46	358.39	12202.76	233.27	195.18	672.86	17.65	441267.07	738696.83	N 32 12 41.43	W 103 41 42.84
	12524.00	91.51	2.38	12213.51	327.21	289.24	673.53	17.39	441361.12	738687.49	N 32 12 42.37	W 103 41 42.83
	12714.00	88.50	2.78	12213.49	517.18	478.03	682.05	1.80	441550.89	738696.01	N 32 12 44.24	W 103 41 42.72
	12904.00	86.91	3.83	12217.79	707.12	668.66	693.00	0.59	441740.52	738706.98	N 32 12 46.12	W 103 41 42.58
	12998.00	89.25	1.34	12219.29	801.10	762.55	697.24	2.87	441834.40	738711.20	N 32 12 47.05	W 103 41 42.52
	13092.00	89.36	358.96	12220.44	894.94	856.53	697.48	2.53	441928.38	738711.45	N 32 12 47.98	W 103 41 42.51
	13187.00	89.32	357.19	12221.53	989.54	951.47	694.29	1.88	442023.31	738708.26	N 32 12 48.92	W 103 41 42.54
	13376.00	90.15	351.95	12222.40	1176.30	1139.55	678.41	2.81	442211.38	738690.38	N 32 12 50.78	W 103 41 42.74
	13470.00	89.22	355.22	12222.92	1268.94	1232.95	665.91	3.62	442304.78	738679.88	N 32 12 51.70	W 103 41 42.85
	13565.00	89.36	355.27	12224.10	1363.01	1327.61	658.04	0.18	442399.44	738672.00	N 32 12 52.64	W 103 41 42.94
	13660.00	89.05	355.88	12225.42	1457.14	1422.32	650.71	0.72	442494.14	738664.68	N 32 12 53.58	W 103 41 43.02
	13850.00	89.63	358.72	12227.61	1646.08	1612.08	641.78	1.53	442683.89	738655.73	N 32 12 55.46	W 103 41 43.11
	13945.00	89.70	0.03	12228.16	1740.85	1707.07	640.72	1.38	442778.87	738654.69	N 32 12 56.40	W 103 41 43.11
	14039.00	90.25	359.76	12228.20	1834.69	1801.07	640.55	0.65	442872.87	738654.52	N 32 12 57.33	W 103 41 43.11
	14136.00	91.32	357.64	12226.87	1931.37	1898.02	638.35	2.45	442969.82	738652.32	N 32 12 58.29	W 103 41 43.13
	14231.00	91.59	358.60	12224.46	2025.95	1992.94	635.23	1.05	443064.73	738649.20	N 32 12 59.23	W 103 41 43.16
	14421.00	90.39	357.05	12221.18	2215.05	2182.77	628.02	1.03	443254.55	738641.99	N 32 13 1.07	W 103 41 43.23
	14610.00	92.28	359.24	12216.77	2403.23	2371.60	621.91	1.53	443443.37	738635.88	N 32 13 2.97	W 103 41 43.29
	14800.00	91.42	0.81	12210.64	2592.80	2561.49	621.66	0.85	443633.26	738635.63	N 32 13 4.85	W 103 41 43.28
	14989.00	90.56	0.40	12207.37	2781.55	2750.45	623.33	0.47	443822.21	738637.30	N 32 13 6.72	W 103 41 43.24
	15083.00	90.70	0.87	12206.34	2875.43	2844.44	624.20	0.32	443916.20	738638.17	N 32 13 7.65	W 103 41 43.23
	15273.00	88.60	359.07	12207.50	3065.08	3034.42	623.77	1.39	444106.17	738637.74	N 32 13 9.53	W 103 41 43.22
	15462.00	89.66	0.00	12210.37	3253.63	3223.39	622.24	0.75	444295.12	738636.21	N 32 13 11.40	W 103 41 43.22
	15557.00	89.49	0.11	12211.08	3348.50	3318.39	622.33	0.21	444390.12	738636.30	N 32 13 12.34	W 103 41 43.22
	15745.00	89.11	0.93	12213.37	3536.27	3506.36	624.04	0.48	444578.08	738638.01	N 32 13 14.20	W 103 41 43.18
	15935.00	89.36	0.27	12215.91	3726.04	3696.34	626.03	0.37	444768.05	738640.00	N 32 13 16.08	W 103 41 43.15
	16124.00	89.46	359.90	12217.86	3914.74	3885.32	626.31	0.20	444957.03	738640.28	N 32 13 17.95	W 103 41 43.13
	16218.00	89.94	0.72	12218.35	4008.61	3979.32	626.81	1.01	445051.02	738640.78	N 32 13 18.88	W 103 41 43.12
	16313.00	90.70	0.40	12217.82	4103.50	4074.31	627.74	0.87	445146.01	738641.71	N 32 13 19.82	W 103 41 43.10
	16502.00	90.66	0.88	12215.57	4292.29	4263.29	629.85	0.25	445334.97	738643.82	N 32 13 21.69	W 103 41 43.08
	16597.00	91.25	1.19	12213.99	4387.20	4358.26	631.57	0.70	445429.94	738645.54	N 32 13 22.83	W 103 41 43.04
	16692.00	90.66	0.71	12212.41	4482.11	4453.23	633.14	0.80	445524.91	738647.11	N 32 13 23.57	W 103 41 43.01

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS ("/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	21144.00	90.67	2.91	12223.14	8922.12	8901.47	816.00	2.22	449972.93	738629.97	N 32 14 7.59	W 103 41 42.90
	21239.00	90.46	0.24	12222.20	9017.07	8996.42	818.61	2.82	450067.88	738632.58	N 32 14 8.53	W 103 41 42.87
	21429.00	90.70	359.97	12220.28	9206.77	9186.41	818.96	0.19	450257.86	738632.93	N 32 14 10.41	W 103 41 42.85
	21523.00	90.32	359.56	12219.44	9300.59	9280.41	818.57	0.59	450351.85	738632.54	N 32 14 11.34	W 103 41 42.85
	21618.00	90.32	359.62	12218.91	9395.39	9375.40	817.89	0.06	450446.84	738631.86	N 32 14 12.28	W 103 41 42.85
	21807.00	90.50	0.78	12217.56	9584.11	9564.39	818.55	0.82	450635.82	738632.52	N 32 14 14.15	W 103 41 42.83
	21901.00	90.77	359.40	12216.52	9677.95	9658.39	818.70	1.50	450729.81	738632.67	N 32 14 15.08	W 103 41 42.82
	22090.00	90.67	359.82	12214.14	9866.55	9847.37	817.42	0.23	450916.78	738631.39	N 32 14 16.95	W 103 41 42.82
	22279.00	89.88	0.17	12213.23	10055.24	10036.36	817.40	0.48	451107.76	738631.37	N 32 14 18.82	W 103 41 42.81
	22374.00	90.84	0.94	12212.64	10150.13	10131.35	818.32	1.30	451202.75	738632.29	N 32 14 19.78	W 103 41 42.79
100'FNL Crossed	22434.00	90.70	1.06	12211.83	10210.08	10191.34	819.37	0.31	451262.73	738633.34	N 32 14 20.35	W 103 41 42.78
Final MWD	22463.00	90.63	1.12	12211.49	10239.05	10220.33	819.92	0.31	451291.73	738633.89	N 32 14 20.64	W 103 41 42.77
Proj to TD	22505.00	90.63	1.12	12211.03	10281.02	10262.32	820.74	0.00	451333.71	738634.71	N 32 14 21.05	W 103 41 42.76

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	1/98.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde WC Unit 5H Gyro + MWD 0-22505'MD
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde WC Unit 5H Gyro + MWD 0-22505'MD
	1	26.500	937.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Mesa Verde WC Unit 5H Gyro + MWD 0-22505'MD
	1	937.000	11522.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde WC Unit 5H Gyro + MWD 0-22505'MD
	1	11522.000	12145.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde WC Unit 5H Gyro + MWD 0-22505'MD
	1	12145.000	21049.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Mesa Verde WC Unit 5H Gyro + MWD 0-22505'MD
	1	21049.000	22505.000	Act Stns	30.000	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde WC Unit 5H Gyro + MWD 0-22505'MD