

Oilfield Services, Eastern U.S. Unit
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

May 1, 2018

Oxy USA Inc.

HOERS OCD
MAY 10 2018
RECEIVED

17, 24 South, 32 East, Lea NM
-32.21101 -103.69131

Re:

CLIENT: Oxy USA Inc.
WELL: Mesa Verde BS Unit 4H
FIELD: Mesa Verde Bone Spring

RIG: H&P 617
COUNTY: Lea
API NO: 30-025-44064
JOB NO: 17MLD2496

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>
Tyler Matthews FE	Mesa Verde BS Unit 4H Original Hole	10782.00 Ft to 20503.00 Ft	April 2, 2018 to April 7, 2018	SlimPulse

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

Field Service Manager

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, 24 South, 32 East, Lea NM
-32.21101 -103.69131

I, Tyler Matthews certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of April 02, 2018 through April 07, 2018, conduct or supervise the taking of the SlimPulse surveys from a depth of 10782.00 feet to a depth of 20503.00 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 4H Well (Original Hole) API No. 30-025-44064 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.

Tyler Matthews

By
Tyler Matthews
FE

Subscribed and Sworn to before me this 2nd day of May (month) 2018 (yr)

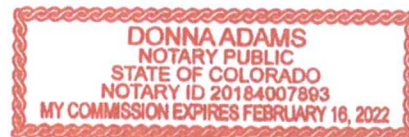
My Commission expires:

2-16-2022

D. Adams -
Notary Public

(signature)

Adams County Colorado
(County State)



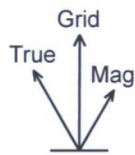
Schlumberger

OXY

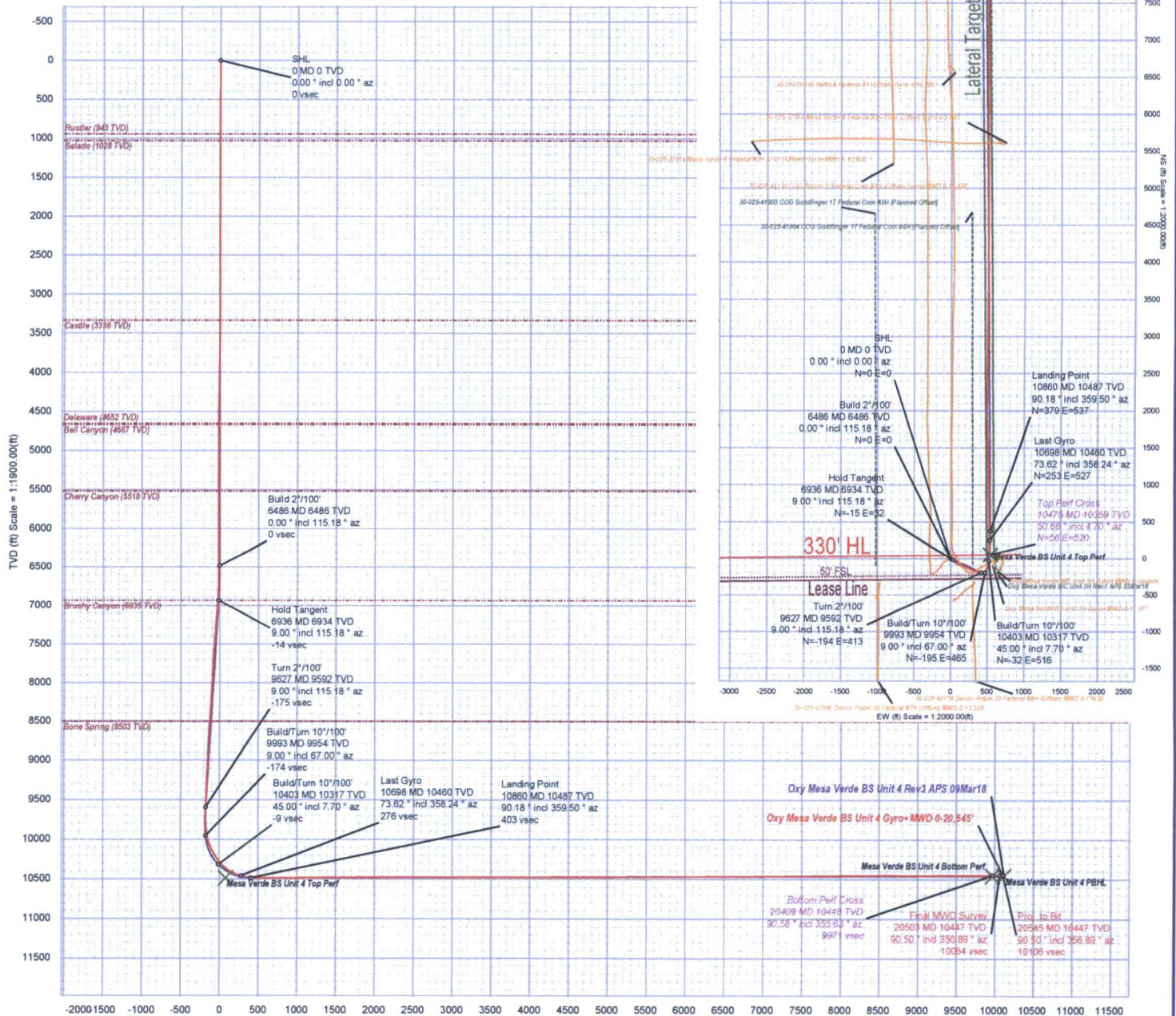


Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Mesa Verde BS Unit 4	NM Lea County (NAD 83)	Oxy Mesa Verde BS Unit 4

Gravity & Magnetic Parameters Model: HDGM 2018 Dip: 59.928° Date: 26-Mar-2018 MagDec: 6.829° FS: 48019.78nT Gravity FS: 998.432mgal (9.80665 Based)	Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet Lat: N 32 12 39.55 Northing: 441093.87NUS Grid Conv: 0.3422° Lon: W 103 41 28.71 Easting: 739902.67NUS Scale Fact: 0.99995425	Miscellaneous Slot: Oxy Mesa Verde TVD Ref: RKB=26.5' (3587ft above MSL) Plan: Oxy Mesa Verde BS Unit 4 Rev3 APS 09Mar18
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Grid North
Tot Corr (M->G 6.487°)
Mag Dec (6.829°)
Grid Conv (0.342°)



Vertical Section (ft) Azim = 2.56° Scale = 1:1900.00 (ft) Origin = 0N-S, 0E-W

Oxy Mesa Verde BS Unit 4 Gyro+MWD 0-20,545' Survey Geodetic Report

(Def Survey)

Report Date: April 08, 2018 - 01:27 AM
 Client: OXY
 Field: NM Lea County (NAD 83)
 Structure / Slot: Oxy Mesa Verde BS Unit 4 / Oxy Mesa Verde BS Unit 4
 Well: Oxy Mesa Verde BS Unit 4
 Borehole: Original Borehole
 UWI / API#: Unknown / 30-025-44064
 Survey Name: Oxy Mesa Verde BS Unit 4 Gyro+MWD 0-20,545'
 Survey Date: March 26, 2018
 Tort / AHD / DDI / ERD Ratio: 180.277' / 10817.396 ft / 6.582' / 1.031
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 12' 39.64722", W 103° 41' 28.70590"
 Location Grid N/E Y/X: N 441093.670 RUS, E 739902.600 RUS
 CRS Grid Convergence Angle: 0.3422 °
 Grid Scale Factor: 0.99995425
 Version / Patch: 2.10.715.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 2.562 ° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB=26.5'
 TVD Reference Elevation: 3587.000 ft above MSL
 Seabed / Ground Elevation: 3560.500 ft above MSL
 Magnetic Declination: 6.829 °
 Total Gravity Field Strength: 998.4321mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48019.780 nT
 Magnetic Dip Angle: 59.928 °
 Declination Date: March 26, 2018
 Magnetic Declination Model: HDGM 2018
 North Reference: Grid North
 Grid Convergence Used: 0.3422 °
 Total Corr Mag North->Grid North: 6.4870 °
 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 ° ' ")
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	441093.67	739902.60	N 32 12 39.65	W 103 41 28.71
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	441093.67	739902.60	N 32 12 39.65	W 103 41 28.71
	46.30	0.56	150.93	46.30	-0.08	-0.08	0.05	2.83	441093.59	739902.65	N 32 12 39.65	W 103 41 28.71
	137.60	0.49	156.41	137.60	-0.81	-0.83	0.42	0.09	441092.84	739903.02	N 32 12 39.64	W 103 41 28.70
	228.80	0.39	168.05	228.79	-1.46	-1.49	0.64	0.15	441092.18	739903.24	N 32 12 39.63	W 103 41 28.70
	320.10	0.39	179.14	320.09	-2.07	-2.11	0.71	0.08	441091.56	739903.31	N 32 12 39.63	W 103 41 28.70
	411.30	0.37	196.72	411.29	-2.67	-2.70	0.63	0.13	441090.97	739903.23	N 32 12 39.62	W 103 41 28.70
	502.60	0.40	208.85	502.59	-3.24	-3.26	0.39	0.09	441090.41	739902.99	N 32 12 39.61	W 103 41 28.70
	593.90	0.39	208.23	593.88	-3.81	-3.81	0.09	0.01	441089.86	739902.69	N 32 12 39.61	W 103 41 28.71
	685.10	0.11	205.36	685.08	-4.17	-4.17	-0.09	0.31	441089.50	739902.51	N 32 12 39.61	W 103 41 28.71
	776.40	0.13	352.95	776.38	-4.15	-4.14	-0.14	0.25	441089.53	739902.46	N 32 12 39.61	W 103 41 28.71
	867.60	0.05	338.32	867.58	-4.01	-4.00	-0.17	0.09	441089.67	739902.43	N 32 12 39.61	W 103 41 28.71
	958.90	0.26	180.21	958.88	-4.18	-4.17	-0.19	0.34	441089.50	739902.41	N 32 12 39.61	W 103 41 28.71
	1053.20	0.15	174.27	1053.18	-4.51	-4.51	-0.18	0.12	441089.16	739902.42	N 32 12 39.60	W 103 41 28.71
	1148.00	0.11	158.64	1147.98	-4.72	-4.72	-0.13	0.06	441088.95	739902.47	N 32 12 39.60	W 103 41 28.71
	1242.70	0.12	171.87	1242.68	-4.90	-4.90	-0.08	0.03	441088.77	739902.52	N 32 12 39.60	W 103 41 28.71
	1337.20	0.14	197.33	1337.18	-5.11	-5.11	-0.10	0.06	441088.56	739902.50	N 32 12 39.60	W 103 41 28.71
	1431.90	0.14	227.17	1431.88	-5.30	-5.30	-0.22	0.08	441088.37	739902.38	N 32 12 39.59	W 103 41 28.71
	1526.50	0.15	248.05	1526.48	-5.44	-5.42	-0.42	0.06	441088.25	739902.18	N 32 12 39.59	W 103 41 28.71
	1621.20	0.17	280.63	1621.18	-5.47	-5.44	-0.68	0.10	441088.23	739901.92	N 32 12 39.59	W 103 41 28.71
	1715.90	0.25	326.46	1715.88	-5.28	-5.25	-0.93	0.19	441088.42	739901.67	N 32 12 39.60	W 103 41 28.72
	1810.50	0.27	336.45	1810.48	-4.92	-4.87	-1.13	0.05	441088.80	739901.47	N 32 12 39.60	W 103 41 28.72
	1905.10	0.19	337.03	1905.08	-4.57	-4.52	-1.28	0.08	441089.15	739901.32	N 32 12 39.60	W 103 41 28.72
	1999.80	0.10	331.32	1999.78	-4.36	-4.30	-1.38	0.10	441089.37	739901.22	N 32 12 39.60	W 103 41 28.72
	2094.50	0.05	328.47	2094.48	-4.26	-4.20	-1.44	0.05	441089.47	739901.16	N 32 12 39.61	W 103 41 28.72
	2189.30	0.05	316.32	2189.28	-4.19	-4.13	-1.49	0.01	441089.54	739901.11	N 32 12 39.61	W 103 41 28.72
	2283.80	0.03	300.36	2283.78	-4.15	-4.09	-1.54	0.02	441089.58	739901.06	N 32 12 39.61	W 103 41 28.72
	2378.00	0.03	288.66	2377.98	-4.14	-4.07	-1.59	0.01	441089.60	739901.01	N 32 12 39.61	W 103 41 28.72
	2472.50	0.03	285.57	2472.48	-4.12	-4.05	-1.64	0.00	441089.62	739900.96	N 32 12 39.61	W 103 41 28.73
	2567.10	0.02	270.69	2567.08	-4.12	-4.05	-1.68	0.01	441089.62	739900.92	N 32 12 39.61	W 103 41 28.73
	2661.80	0.03	211.45	2661.78	-4.14	-4.07	-1.71	0.03	441089.60	739900.89	N 32 12 39.61	W 103 41 28.73
	2756.30	0.13	180.14	2756.28	-4.27	-4.20	-1.72	0.11	441089.47	739900.88	N 32 12 39.61	W 103 41 28.73
	2851.00	0.19	162.91	2850.98	-4.52	-4.45	-1.67	0.08	441089.22	739900.93	N 32 12 39.60	W 103 41 28.73
	2945.60	0.23	152.31	2945.58	-4.84	-4.77	-1.54	0.06	441088.90	739901.06	N 32 12 39.60	W 103 41 28.72
	3040.30	0.23	150.06	3040.28	-5.16	-5.11	-1.35	0.01	441088.57	739901.25	N 32 12 39.60	W 103 41 28.72
	3134.80	0.06	201.84	3134.78	-5.37	-5.32	-1.28	0.21	441088.35	739901.32	N 32 12 39.59	W 103 41 28.72
	3229.50	0.04	247.68	3229.48	-5.43	-5.37	-1.33	0.05	441088.30	739901.27	N 32 12 39.59	W 103 41 28.72
	3324.30	0.06	94.84	3324.28	-5.44	-5.39	-1.31	0.10	441088.28	739901.29	N 32 12 39.59	W 103 41 28.72
	3419.00	0.02	102.51	3418.98	-5.45	-5.40	-1.24	0.04	441088.27	739901.36	N 32 12 39.59	W 103 41 28.72
	3515.70	0.00	33.93	3515.68	-5.45	-5.40	-1.23	0.02	441088.27	739901.37	N 32 12 39.59	W 103 41 28.72
	3608.20	0.10	259.82	3608.18	-5.47	-5.42	-1.31	0.11	441088.25	739901.29	N 32 12 39.59	W 103 41 28.72
	3702.80	0.02	245.31	3702.78	-5.50	-5.44	-1.40	0.09	441088.23	739901.20	N 32 12 39.59	W 103 41 28.72
	3797.50	0.05	288.59	3797.48	-5.49	-5.43	-1.46	0.04	441088.24	739901.14	N 32 12 39.59	W 103 41 28.72
	3892.20	0.13	161.64	3892.18	-5.58	-5.52	-1.46	0.17	441088.15	739901.14	N 32 12 39.59	W 103 41 28.72
	3986.70	0.93	138.85	3986.67	-6.23	-6.20	-0.92	0.86	441087.47	739901.68	N 32 12 39.59	W 103 41 28.72
	4081.40	1.09	136.88	4081.36	-7.42	-7.44	0.20	0.17	441086.23	739902.80	N 32 12 39.57	W 103 41 28.70
	4175.90	0.30	102.85	4175.85	-8.09	-8.15	1.05	0.91	441085.52	739903.65	N 32 12 39.57	W 103 41 28.69
	4270.40	0.70	164.76	4270.35	-8.69	-8.76	1.45	0.65	441084.91	739904.05	N 32 12 39.56	W 103 41 28.69
	4365.00	1.56	159.16	4364.93	-10.42	-10.52	2.06	0.92	441083.15	739904.66	N 32 12 39.54	W 103 41 28.68
	4459.50	1.55	147.33	4459.39	-12.64	-12.80	3.20	0.34	441080.87	739905.80	N 32 12 39.52	W 103 41 28.66
	4553.90	0.40	96.10	4553.78	-13.71	-13.91	4.22	1.42	441079.76	739906.82	N 32 12 39.51	W 103 41 28.66
	4648.00	0.38	77.77	4647.88	-13.65	-13.88	4.85	0.13	441079.79	739907.45	N 32 12 39.51	W 103 41 28.65
	4742.50	0.10	22.40	4742.37	-13.49	-13.73	5.19	0.35	441079.94	739907.79	N 32 12 39.51	W 103 41 28.65
	4837.20	0.07	333.52	4837.07	-13.36	-13.61	5.20	0.08	441080.06	739907.80	N 32 12 39.51	W 103 41 28.65
	4931.70	0.07	319.39	4931.57	-13.27	-13.51	5.13	0.02	441080.16	739907.73	N 32 12 39.51	W 103 41 28.65
	5026.20	0.06	345.17	5026.07	-13.18	-13.42	5.08	0.03	441080.25	739907.68	N 32 12 39.51	W 103 41 28.65
	5120.90	0.06	343.60	5120.77	-13.08	-13.32	5.06	0.00	441080.35	739907.66	N 32 12 39.52	W 103 41 28.65
	5215.60	0.06	337.19	5215.47	-12.99	-13.23	5.02	0.01	441080.44	739907.62	N 32 12 39.52	W 103 41 28.65
	5310.20	0.07	309.70	5310.07	-12.91	-13.15	4.96	0.03	441080.52	739907.56	N 32 12 39.52	W 103 41 28.65
	5404.40	0.06	324.12	5404.27	-12.84	-13.07	4.89	0.02	441080.60	739907.49	N 32 12 39.52	W 103 41 28.65
	5499.00	0.06	328.08	5498.87	-12.76	-12.99	4.83	0.00	441080.68	739907.43	N 32 12 39.52	W 103 41 28.65
	5593.40	0.07	319.19	5593.27	-12.68	-12.90	4.77	0.02	441080.77	739907.37	N 32 12 39.52	W 103 41 28.65
	5687.70	0.07	148.26	5687.57	-12.68	-12.91	4.76	0.15	441080.76	739907.36	N 32 12 39.52	W 103 41 28.65
	5782.10	0.07	171.41	5781.97	-12.79	-13.01	4.80	0.03	441080.66	739907.40	N 32 12 39.52	W 103 41 28.65
	5876.40	0.06	153.06	5876.27	-12.89	-13.12	4.83	0.02	441080.56	739907.43	N 32 12 39.52	W 103 41 28.65
	5970.90	0.06	157.18	5970.77	-12.97	-13.21	4.87	0.00	441080.47	739907.47	N 32 12 39.52	W 103 41 28.65
	6065.50	0.08	140.25	6065.37	-13.07	-13.30	4.93	0.03	441080.37	739907.53	N 32 12 39.52	W 103 41 28.65
	6159.90	0.06	152.66	6159.77	-13.16	-13.40	5.00	0.03	441080.27	739907.60	N 32 12 39.51	W 103 41 28.65
	6254.20	0.06	170.44	6254.07	-13.25	-13.49	5.03	0.02	441080.18	739907.63	N 32 12 39.51	W 103 41 28.65
	6348.50	0.07	139.32	6348.37	-13.34	-13.58	5.07	0.04	441080.09	739907.67	N 32 12 39.51	W 103 41 28.65
	6442.80	0.09	144.22	6442.67	-13.44	-13.68	5.15	0.02	441079.99	739907.75	N 32 12 39.51	W 103 41 28.65
	6537.20	0.07	135.78	6537.07	-13.54	-13.79	5.24	0.02	441079.88	739907.84	N 32 12 39.51	W 103 41 28.65
	6631.40	0.02	71.23	6631.27	-13.57	-13.82	5.29	0.07	441079.85	739907.89	N 32 12 39.51	W 103 41 28.65
	6726.00	1.45	126.34	6725.86	-14.23	-14.53	6.27	1.52	441079.14	739908.87	N 32 12 39.50	W 103

Comments

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 ° ' ")
	19313.00	89.97	359.37	10451.96	8877.74	8864.56	493.18	0.36	449957.80	740395.76	N 32 14 7.33	W 103 41 22.35
	19408.00	90.03	358.49	10451.96	8972.55	8959.54	491.41	0.93	450052.78	740393.99	N 32 14 8.27	W 103 41 22.36
	19503.00	90.17	358.87	10451.79	9067.33	9054.51	489.22	0.43	450147.75	740391.80	N 32 14 9.21	W 103 41 22.38
	19597.00	90.14	359.26	10451.54	9161.16	9148.50	487.69	0.42	450241.73	740390.26	N 32 14 10.14	W 103 41 22.39
	19786.00	90.31	358.73	10450.80	9349.79	9337.47	484.37	0.29	450430.69	740386.95	N 32 14 12.01	W 103 41 22.42
	19881.00	90.14	358.42	10450.42	9444.56	9432.44	482.01	0.37	450525.66	740384.59	N 32 14 12.95	W 103 41 22.44
	20066.00	89.88	359.21	10450.39	9629.16	9617.40	478.18	0.45	450710.61	740380.76	N 32 14 14.78	W 103 41 22.47
	20161.00	90.68	359.56	10449.93	9724.01	9712.39	477.16	0.92	450805.60	740379.74	N 32 14 15.72	W 103 41 22.47
	20255.00	90.22	356.49	10449.19	9817.70	9806.32	473.93	3.30	450899.52	740376.50	N 32 14 16.65	W 103 41 22.51
	20350.00	90.63	354.94	10448.48	9912.02	9901.05	466.83	1.69	450994.25	740369.41	N 32 14 17.59	W 103 41 22.58
	20444.00	90.55	356.04	10447.52	10005.30	9994.75	459.44	1.17	451087.94	740362.01	N 32 14 18.52	W 103 41 22.66
Final MWD Survey	20503.00	90.50	356.89	10446.97	10063.96	10053.64	455.80	1.44	451146.83	740358.38	N 32 14 19.10	W 103 41 22.70
Proj. to Bit	20545.00	90.50	356.89	10446.61	10105.75	10095.57	453.52	0.00	451188.76	740356.10	N 32 14 19.52	W 103 41 22.72

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)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/98.425	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde BS Unit 4 Gyro+MWD 0-20,545'
	1	26.500	26.500	Act Stns	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Mesa Verde BS Unit 4 Gyro+MWD 0-20,545'
	1	26.500	10697.900	Act Stns	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Mesa Verde BS Unit 4 Gyro+MWD 0-
	1	10697.900	20545.000	Act Stns	30.000	NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Mesa Verde BS Unit 4 Gyro+MWD 0-