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APR 30 2019

DISTRICT II-ARTESIA O.C.D.

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:
33, 23S, 31E, Eddy NM
N 32.26744 W -103.78859

I, Jude Omokwale certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of March 02, 2019 through April 04, 2019, conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 857.00 feet to a depth of 20562.00 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 Iridium MDP1 28-21 Federal Com 1H Well (Original Hole) API No. 30-015-45242 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.

Final Surveys are corrected by Superior QC, a third party company.

By
Jude Omokwale
FS

Subscribed and Sworn to before me this 8th day of April (month) 2019 (yr)

My Commission expires:

2-11-2022

D. Adams (signature)

Notary Public

Adams County Colorado

(County State)

DONNA ADAMS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20184007893
MY COMMISSION EXPIRES FEBRUARY 16, 2022

Schlumberger

OXY

Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Iridium MDP1 28-21 Federal Com 1H	NM Eddy County (NAD 83)	Oxy Iridium MDP1 28-21 Federal Com 1H

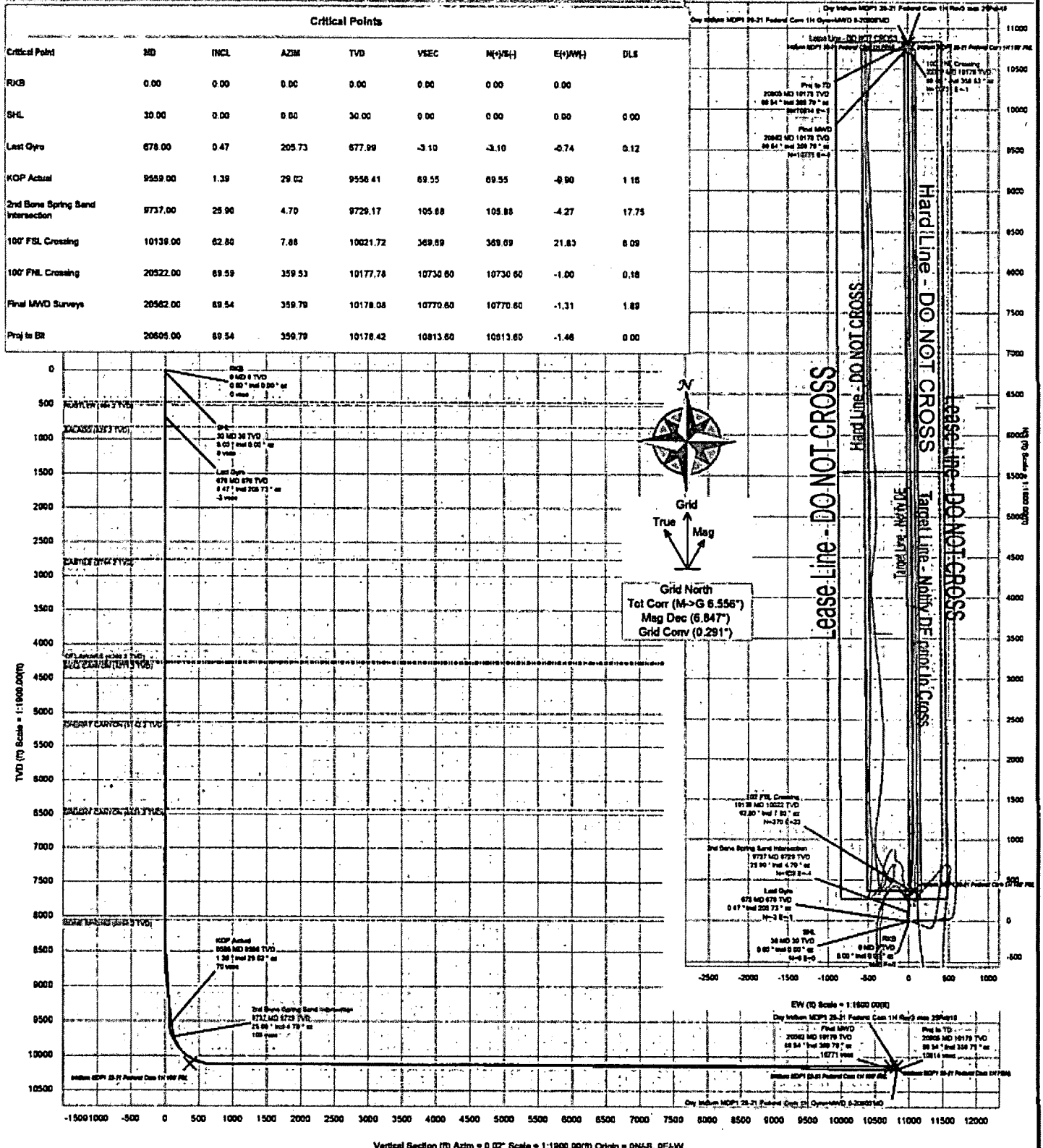
Gravity & Magnetic Parameters

Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet

Miscellaneous

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
SHL	30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00
Last Gyro	678.00	0.47	205.73	677.99	-3.10	-3.10	-0.74	0.12
KOP Actual	9559.00	1.39	29.02	9558.41	69.55	69.55	-9.90	1.15
2nd Bone Spring Sand Intersection	9737.00	25.90	4.70	9729.17	105.88	105.88	-4.27	17.75
100' FSL Crossing	10139.00	62.80	7.88	10021.72	369.69	369.69	21.83	8.09
100' FNL Crossing	20522.00	89.59	359.53	10177.78	10730.60	10730.60	-1.00	0.18
Final MWD Surveys	20562.00	89.54	359.79	10178.08	10770.60	10770.60	-1.31	1.89
Proj to BR	20605.00	89.54	359.79	10178.42	10813.60	10813.60	-1.46	0.00



Schlumberger

Oxy Iridium MDP1 28-21 Federal Com 1H Gyro+MWD 0-20605'MD Survey
Geodetic Report
(Def Survey)

Report Date:	April 08, 2019 - 02:47 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	0.019 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Iridium MDP1 28-21 Federal Com 1H / Oxy Iridium MDP1 28-21 Federal Com 1H	**TVD Reference Datum:**	RKB+30'
Well:	Oxy Iridium MDP1 28-21 Federal Com 1H	**TVD Reference Elevation:**	3405.300 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3375.300 ft above MSL
UWI / API#:	Unknown / 30-015-45242	**Magnetic Declination:**	6.847 °
Survey Name:	Oxy Iridium MDP1 28-21 Federal Com 1H Gyro+MWD 0-20605'MD	**Total Gravity Field Strength:**	998.4502mgn (9.80665 Based)
Survey Date:	February 11, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	218.554 ° / 10853.229 ft / 6.677 / 1.066	**Total Magnetic Field Strength:**	47992.700 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.991 °
Location Lat / Long:	N 32° 15' 2.77566", W 103° 47' 18.92860"	**Declination Date:**	March 13, 2019
Location Grid N/E Y/X:	N 461454.300 ftUS, E 709710.150 ftUS	**Magnetic Declination Model:**	IFR1
CRS Grid Convergence Angle:	0.2908 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99994156	**Grid Convergence Used:**	0.2908 °
Version / Patch:	2.10.753.0	**Total Corr Mag North->Grid North:**	6.5562 °
		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	461454.30	709710.15	N 32 16 2.78	W 103 47 18.93
SHL	30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	461454.30	709710.15	N 32 16 2.78	W 103 47 18.93
	102.00	0.10	58.67	102.00	0.03	0.03	0.05	0.14	461454.33	709710.20	N 32 16 2.78	W 103 47 18.93
	134.00	0.11	103.80	134.00	0.04	0.04	0.11	0.25	461454.34	709710.26	N 32 16 2.78	W 103 47 18.93
	216.00	0.21	178.83	216.00	-0.13	-0.13	0.19	0.25	461454.17	709710.34	N 32 16 2.78	W 103 47 18.93
	307.00	0.38	191.76	307.00	-0.57	-0.57	0.14	0.18	461453.73	709710.29	N 32 16 2.77	W 103 47 18.93
	401.00	0.41	190.15	401.00	-1.19	-1.19	0.02	0.05	461453.11	709710.17	N 32 16 2.76	W 103 47 18.93
	496.00	0.41	214.78	495.99	-1.80	-1.80	-0.24	0.18	461452.50	709709.91	N 32 16 2.76	W 103 47 18.93
	590.00	0.45	182.56	589.99	-2.44	-2.44	-0.51	0.18	461451.86	709709.64	N 32 16 2.75	W 103 47 18.93
Last Gyro	678.00	0.47	205.73	677.99	-3.10	-3.10	-0.74	0.12	461451.20	709709.41	N 32 16 2.75	W 103 47 18.94
	857.00	0.11	71.11	856.99	-3.71	-3.71	-0.00	0.31	461450.59	709709.25	N 32 16 2.74	W 103 47 18.94
	1039.00	0.16	213.26	1038.99	-3.87	-3.86	-0.07	0.14	461450.44	709709.28	N 32 16 2.74	W 103 47 18.94
	1221.00	1.48	355.50	1220.97	-1.73	-1.73	-1.18	0.88	461452.57	709708.97	N 32 16 2.76	W 103 47 18.94
	1402.00	0.11	11.39	1401.95	0.77	0.77	-1.32	0.76	461455.07	709708.83	N 32 16 2.78	W 103 47 18.94
	1591.00	0.16	215.07	1590.95	0.73	0.73	-1.44	0.14	461455.03	709708.71	N 32 16 2.78	W 103 47 18.95
	1760.00	0.16	20.78	1779.95	0.76	0.76	-1.50	0.17	461455.06	709708.65	N 32 16 2.78	W 103 47 18.95
	1875.00	0.11	190.18	1874.95	0.79	0.80	-1.46	0.29	461455.10	709708.69	N 32 16 2.78	W 103 47 18.95
	1969.00	0.16	300.00	1968.95	0.77	0.77	-1.59	0.24	461455.07	709708.56	N 32 16 2.78	W 103 47 18.95
	2158.00	0.16	214.56	2157.95	0.59	0.59	-1.97	0.11	461454.99	709708.18	N 32 16 2.78	W 103 47 18.95
	2253.00	0.11	349.22	2252.94	0.57	0.57	-2.06	0.26	461454.97	709708.09	N 32 16 2.78	W 103 47 18.95
	2347.00	0.16	165.80	2346.94	0.53	0.53	-2.05	0.29	461454.93	709708.10	N 32 16 2.78	W 103 47 18.95
	2441.00	0.16	180.37	2440.94	0.37	0.37	-2.02	0.04	461454.87	709708.13	N 32 16 2.78	W 103 47 18.95
	2535.00	0.11	8.06	2534.94	0.33	0.33	-2.01	0.29	461454.83	709708.14	N 32 16 2.78	W 103 47 18.95
	2630.00	0.11	94.77	2629.94	0.41	0.41	-1.90	0.16	461454.71	709708.25	N 32 16 2.78	W 103 47 18.95
	2724.00	0.16	319.49	2723.94	0.50	0.50	-1.90	0.27	461454.80	709708.25	N 32 16 2.78	W 103 47 18.95
	2819.00	0.16	185.33	2818.94	0.47	0.47	-2.00	0.31	461454.77	709708.15	N 32 16 2.78	W 103 47 18.95
	2913.00	0.16	349.53	2912.94	0.47	0.47	-2.03	0.34	461454.77	709708.12	N 32 16 2.78	W 103 47 18.95
	3008.00	0.14	14.46	3007.94	0.71	0.71	-2.03	0.07	461455.01	709708.12	N 32 16 2.78	W 103 47 18.95
	3102.00	0.16	16.08	3101.94	0.95	0.95	-1.96	0.02	461455.25	709708.19	N 32 16 2.79	W 103 47 18.95
	3197.00	0.14	234.03	3196.94	1.01	1.01	-2.02	0.30	461455.31	709708.13	N 32 16 2.79	W 103 47 18.95
	3291.00	0.06	186.30	3290.94	0.99	0.99	-2.12	0.12	461455.19	709708.03	N 32 16 2.79	W 103 47 18.95
	3386.00	0.11	236.50	3385.94	0.79	0.79	-2.20	0.09	461455.09	709707.95	N 32 16 2.78	W 103 47 18.95
	3480.00	0.19	152.43	3479.94	0.61	0.61	-2.20	0.22	461454.91	709707.95	N 32 16 2.78	W 103 47 18.95
	3575.00	0.16	191.56	3574.94	0.35	0.35	-2.07	0.03	461454.65	709708.08	N 32 16 2.78	W 103 47 18.95
	3669.00	0.11	19.85	3668.94	0.32	0.32	-1.97	0.26	461454.62	709708.18	N 32 16 2.78	W 103 47 18.95
	3857.00	0.06	37.65	3856.94	0.57	0.57	-1.85	0.03	461454.87	709708.30	N 32 16 2.78	W 103 47 18.95
	3952.00	0.16	184.00	3951.94	0.47	0.47	-1.83	0.22	461454.77	709708.32	N 32 16 2.78	W 103 47 18.95
	4046.00	0.11	184.27	4045.94	0.25	0.25	-1.85	0.05	461454.55	709708.30	N 32 16 2.78	W 103 47 18.95
	4204.00	0.16	349.36	4203.94	0.32	0.32	-1.90	0.17	461454.62	709708.25	N 32 16 2.78	W 103 47 18.95
	4319.00	0.07	347.16	4318.94	0.54	0.54	-1.94	0.08	461454.84	709708.21	N 32 16 2.78	W 103 47 18.95
	4414.00	0.06	22.39	4413.94	0.65	0.65	-1.94	0.04	461454.95	709708.21	N 32 16 2.78	W 103 47 18.95
	4603.00	0.14	281.55	4602.94	0.78	0.79	-2.13	0.09	461455.09	709708.02	N 32 16 2.78	W 103 47 18.95
	4697.00	0.09	265.78	4696.94	0.80	0.80	-2.21	0.06	461455.10	709707.94	N 32 16 2.78	W 103 47 18.96
	4792.00	0.07	327.01	4791.94	0.85	0.85	-2.42	0.09	461455.15	709707.73	N 32 16 2.79	W 103 47 18.96
	4886.00	0.01	180.24	4885.94	0.89	0.89	-2.45	0.08	461455.19	709707.70	N 32 16 2.79	W 103 47 18.96
	4981.00	0.07	115.81	4980.94	0.85	0.85	-2.40	0.07	461455.15	709707.75	N 32 16 2.79	W 103 47 18.96
	5075.00	0.09	340.83	5074.94	0.90	0.90	-2.37	0.18	461455.20	709707.78	N 32 16 2.79	W 103 47 18.96
	5169.00	0.07	352.32	5168.94	1.02	1.02	-2.40	0.03	461455.32	709707.75	N 32 16 2.79	W 103 47 18.96
	5263.00	0.09	253.04	5262.94	1.06	1.06	-2.48	0.13	461455.36	709707.67	N 32 16 2.79	W 103 47 18.96
	5358.00	0.09	235.07	5357.94	0.99	0.99	-2.62	0.03	461455.29	709707.54	N 32 16 2.79	W 103 47 18.96
	5452.00	0.01	23.30	5451.94	0.96	0.96	-2.67	0.10	461455.26	709707.48	N 32 16 2.79	W 103 47 18.96
	5641.00	0.13	168.15	5640.94	0.76	0.77	-2.62	0.07	461455.07	709707.53	N 32 16 2.78	W 103 47 18.96
	5735.00	0.13	254.49	5734.94	0.63	0.63	-2.70	0.19	461454.93	709707.45	N 32 16 2.78	W 103 47 18.96
	5830.00	0.09	176.50	5829.94	0.53	0.53	-2.80	0.15	461454.83	709707.35	N 32 16 2.78	W 103 47 18.96
	5925.00	0.07	8.60	5924.94	0.51	0.51	-2.79	0.17	461454.81	709707.36	N 32 16 2.78	W 103 47 18.96
	6114.00	0.05	222.32	6113.94	0.56	0.57	-2.83	0.06	461454.87	709707.32	N 32 16 2.78	W 103 47 18.96
	6208.00	0.25	201.80	6207.94	0.34	0.34	-2.93	0.22	461454.64	709707.22	N 32 16 2.78	W 103 47 18.96
	6303.00	0.14	208.79	6302.94	0.05	0.05	-3.06	0.12	461454.35	709707.09	N 32 16 2.78	W 103 47 18.96
	6397.00	0.08	262.74	6396.94	-0.06	-0.06	-3.18	0.12	461454.24	709706.97	N 32 16 2.78	W 103 47 18.97
	6492.00	0.07	144.85	6491.94	-0.12	-0.11	-3.22	0.14	461454.19	709706.93	N 32 16 2.78	W 103 47 18.97
	6587.00	0.20	152.29	6586.94	-0.31	-0.31	-3.11	0.14	461453.99	709707.04	N 32 16 2.77	W 103 47 18.96
	6681.00	0.40	163.07	6680.94	-0.77	-0.77	-2.93	0.22	461453.53	709707.22	N 32 16 2.77	W 103 47 18.96
	6776.00	0.35	171.77	6775.93	-1.37	-1.37	-2.80	0.08	461452.93	709707.35	N 32 16 2.76	W 103 47 18.96
	6870.00	0.23	163.52	6869.93	-1.84	-1.84	-2.70	0.13	461452.46	709707.45	N 32 16 2.76	W 103 47 18.96
	7059.00	0.27	106.44	7058.93	-2.33	-2.33	-2.17	0.13	461451.97	709707.98	N 32 16 2.75	W 103 47 18.95
	7248.00	0.27	98.14	7247.93	-2.50	-2.50	-1.30	0.03	461451.80	709708.85	N 32 16 2.75	W 103 47 18.94
	7438.00	0.29	72.68	7437.93	-2.41	-2.41	-0.39	0.06	461451.89	709709.76	N 32 16 2.75	W 103 47 18.93
	7532.00	0.32	322.29	7531.93	-2.13	-2.13	-0.33	0.53	461452.17	709709.82	N 32 16 2.76	W 103 47 18.93
	7627.00	0.07	146.93	7626.93	-1.97	-1.97	-0.48	0.41	461452.33	709709.69	N 32 16 2.76	W 103 47 18.93
	7816.00	0.35	327.83	7815.93	-1.57	-1.57	-0.70	0.22	461452.73	709709.45	N 32 16 2.76	W 103 47 18.94
	8005.00	0.32	192.97	8004.92	-1.60	-1.12	0.33	461452.70	709709.03	N 32 16 2.76	W 103 47 18.94
	8194.00	0.70	4.31	8193.92	-0.96	-0.96	-1.16	0.54	461453.34	709708.99	N 32 16 2.77	W 103 47 18.94
	8289.00	2.26	25.76	8288.89	1.30	1.30	-0.30	1.71	461455.60	709709.85	N 32 16 2.79	W 103 47 18.93
	8383.00	3.42	11.35	8382.77	5.72	5.72	1.06	1.44	461460.02	709711.21	N 32 16 2.83	W 103 47 18.92
	8478.00	4.51	353.75	8477.55	12.22	12.21	1.21	1.71	461466.51	709711.36	N 32 16 2.90	W 103 47 18.91
	8572.00	5.34	339.21	8571.20	19.98	19.98	-0.75	1.59	461474.28	709709.40	N 32 16 2.97	W 103 47 18.94
	8667.00	5.22	335.28	8665.80	28.04	28.04	-4.12	0.40	461482.33	709706.03	N 32 16 3.05	W 103 47 18.97

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 ° ' ")
	8761.00	4.58	332.42	8758.45	35.24	35.25	-7.65	0.73	461489.58	709702.50	N 32 16 3.13	W 103 47 19.02
	8855.00	3.80	332.08	8853.20	41.32	41.33	-10.84	0.83	461495.82	709699.31	N 32 16 3.19	W 103 47 19.05
	8950.00	3.71	328.08	8948.00	46.71	46.72	-13.94	0.29	461501.01	709696.21	N 32 16 3.24	W 103 47 19.09
	9044.00	2.75	322.97	9041.85	51.09	51.10	-16.91	1.07	461505.40	709693.24	N 32 16 3.28	W 103 47 19.12
	9138.00	2.35	3.54	9135.76	54.82	54.82	-18.15	1.92	461509.12	709692.00	N 32 16 3.32	W 103 47 19.14
	9233.00	2.49	27.36	9230.68	58.59	58.60	-17.08	1.06	461512.90	709693.07	N 32 16 3.36	W 103 47 19.12
	9327.00	2.05	39.09	9324.61	61.71	61.72	-15.08	0.68	461516.01	709695.07	N 32 16 3.39	W 103 47 19.10
	9421.00	2.99	33.11	9418.51	65.07	65.08	-12.88	1.04	461519.37	709697.47	N 32 16 3.42	W 103 47 19.07
KOP Actual	9559.00	1.39	29.02	9556.41	69.55	69.55	-9.90	1.16	461523.85	709700.25	N 32 16 3.47	W 103 47 19.04
	9654.00	11.31	11.77	9650.71	79.70	79.71	-7.44	10.52	461534.00	709702.71	N 32 16 3.57	W 103 47 19.01
	9748.00	27.84	4.30	9738.96	110.84	110.84	-3.89	17.75	461565.13	709706.27	N 32 16 3.87	W 103 47 18.97
	9837.00	30.27	6.28	9816.76	153.67	153.67	0.13	2.94	461608.16	709710.28	N 32 16 4.30	W 103 47 18.92
	9932.00	42.67	2.88	9892.93	210.16	210.17	4.39	13.43	461664.46	709714.54	N 32 16 4.86	W 103 47 18.87
	10027.00	48.42	6.31	9959.33	277.83	277.83	9.92	6.39	461732.11	709720.07	N 32 16 5.53	W 103 47 18.80
	10121.00	61.35	8.05	10013.29	353.94	353.94	19.82	13.84	461808.22	709729.77	N 32 16 6.28	W 103 47 18.68
	10215.00	68.90	7.09	10052.80	438.42	438.41	30.85	8.09	461892.68	709741.00	N 32 16 7.11	W 103 47 18.54
	10310.00	73.48	5.98	10083.43	527.74	527.73	41.07	4.95	461982.00	709751.22	N 32 16 8.00	W 103 47 18.42
	10404.00	77.35	3.79	10107.09	616.36	616.35	48.80	4.89	462072.61	709758.95	N 32 16 8.89	W 103 47 18.32
	10499.00	88.39	1.15	10118.87	712.39	712.37	52.83	11.94	462166.63	709762.98	N 32 16 9.82	W 103 47 18.27
	10593.00	87.91	0.53	10121.90	806.33	806.31	54.21	0.83	462260.56	709764.35	N 32 16 10.75	W 103 47 18.25
	10687.00	87.99	0.36	10122.76	830.31	830.30	54.40	0.71	462284.54	709764.54	N 32 16 10.99	W 103 47 18.25
	10711.00	89.10	359.87	10125.15	924.28	924.26	54.68	1.26	462378.51	709764.83	N 32 16 11.92	W 103 47 18.24
	10804.00	91.40	358.79	10124.74	1017.27	1017.25	53.88	2.78	462471.49	709763.83	N 32 16 12.84	W 103 47 18.24
	10898.00	91.02	358.69	10122.02	1111.20	1111.19	51.81	0.56	462565.42	709761.78	N 32 16 13.77	W 103 47 18.26
	10993.00	88.99	359.71	10120.44	1206.17	1206.16	50.29	2.30	462660.38	709760.43	N 32 16 14.71	W 103 47 18.27
	11087.00	88.75	0.89	10120.65	1300.17	1300.16	50.61	1.07	462754.38	709760.76	N 32 16 15.64	W 103 47 18.26
	11182.00	88.44	0.86	10121.32	1395.16	1395.15	51.73	0.33	462849.36	709761.88	N 32 16 16.58	W 103 47 18.24
	11276.00	90.09	0.80	10121.71	1489.16	1489.14	52.93	0.71	462943.35	709763.08	N 32 16 17.51	W 103 47 18.22
	11371.00	89.72	359.85	10121.87	1584.15	1584.13	53.47	1.07	463038.34	709763.62	N 32 16 18.45	W 103 47 18.21
	11466.00	90.58	0.24	10121.82	1679.15	1679.13	53.54	0.99	463133.33	709763.69	N 32 16 19.39	W 103 47 18.21
	11560.00	89.66	359.33	10121.40	1773.15	1773.13	53.19	1.35	463227.32	709763.34	N 32 16 20.32	W 103 47 18.20
	11655.00	89.41	359.87	10122.18	1868.14	1868.12	52.36	0.46	463322.31	709762.51	N 32 16 21.26	W 103 47 18.21
	11750.00	89.58	359.87	10122.99	1963.14	1963.12	51.82	0.18	463417.30	709761.96	N 32 16 22.20	W 103 47 18.21
	11845.00	90.58	0.84	10122.86	2058.13	2058.11	52.24	1.82	463512.29	709762.39	N 32 16 23.14	W 103 47 18.20
	11939.00	90.68	0.01	10121.83	2152.12	2152.11	52.94	0.89	463606.28	709763.08	N 32 16 24.07	W 103 47 18.18
	12034.00	90.20	359.91	10121.10	2247.12	2247.10	52.87	0.52	463701.27	709763.02	N 32 16 25.01	W 103 47 18.18
	12128.00	89.75	359.28	10121.14	2341.12	2341.10	52.21	0.82	463795.26	709762.35	N 32 16 25.94	W 103 47 18.18
	12222.00	88.96	359.77	10122.20	2435.11	2435.09	51.43	0.99	463889.24	709761.57	N 32 16 26.87	W 103 47 18.19
	12317.00	90.06	0.62	10123.01	2530.10	2530.08	51.75	1.46	463984.23	709761.90	N 32 16 27.81	W 103 47 18.18
	12412.00	89.44	1.13	10123.43	2625.09	2625.07	53.20	0.85	464079.21	709763.35	N 32 16 28.75	W 103 47 18.15
	12507.00	89.27	1.36	10124.49	2720.08	2720.04	55.26	0.30	464174.18	709765.41	N 32 16 29.69	W 103 47 18.12
	12601.00	89.92	0.48	10125.16	2814.04	2814.03	56.77	1.16	464268.16	709766.92	N 32 16 30.62	W 103 47 18.10
	12790.00	89.41	0.55	10126.26	3003.03	3003.01	58.47	0.27	464457.13	709768.62	N 32 16 32.49	W 103 47 18.07
	12885.00	89.72	0.97	10126.99	3098.02	3098.00	59.73	0.55	464552.12	709769.88	N 32 16 33.43	W 103 47 18.05
	12979.00	89.78	0.88	10127.40	3192.01	3191.99	61.25	0.12	464646.10	709771.40	N 32 16 34.36	W 103 47 18.03
	13074.00	89.54	0.68	10127.96	3287.00	3286.98	62.69	0.25	464741.08	709772.84	N 32 16 35.30	W 103 47 18.00
	13168.00	89.54	0.84	10128.71	3380.98	3380.96	64.09	0.02	464835.06	709774.23	N 32 16 36.23	W 103 47 17.98
	13357.00	89.72	359.19	10129.93	3569.97	3569.95	64.14	0.88	465024.04	709774.28	N 32 16 38.10	W 103 47 17.97
	13452.00	89.86	0.11	10130.43	3664.97	3664.95	63.56	0.97	465119.03	709773.70	N 32 16 39.04	W 103 47 17.97
	13547.00	90.03	0.97	10130.67	3759.96	3759.94	64.45	0.98	465214.02	709774.60	N 32 16 39.98	W 103 47 17.96
	13641.00	89.54	0.28	10131.03	3853.96	3853.94	65.48	0.90	465308.00	709775.62	N 32 16 40.91	W 103 47 17.94
	13736.00	89.85	1.11	10131.53	3948.95	3948.93	66.83	0.93	465402.99	709776.77	N 32 16 41.85	W 103 47 17.92
	13831.00	89.81	0.86	10131.98	4043.93	4043.91	68.28	0.26	465497.97	709778.41	N 32 16 42.79	W 103 47 17.89
	13926.00	90.99	0.03	10131.48	4138.93	4138.90	69.00	1.70	465592.95	709779.15	N 32 16 43.73	W 103 47 17.88
	14114.00	89.85	357.82	10130.43	4326.88	4326.84	65.14	1.47	465780.88	709775.29	N 32 16 45.59	W 103 47 17.91
	14209.00	89.85	358.80	10131.01	4421.81	4421.79	62.18	1.24	465875.83	709772.32	N 32 16 46.53	W 103 47 17.94
	14304.00	90.06	359.29	10131.25	4516.80	4516.78	60.59	0.67	465970.81	709770.74	N 32 16 47.47	W 103 47 17.96
	14399.00	89.68	358.65	10131.47	4611.78	4611.76	58.89	0.78	466065.78	709769.03	N 32 16 48.41	W 103 47 17.97
	14493.00	89.81	358.25	10132.05	4705.75	4705.73	56.34	0.43	466159.74	709766.49	N 32 16 49.34	W 103 47 17.99
	14588.00	89.48	358.45	10132.80	4800.70	4800.68	53.81	0.25	466254.69	709763.75	N 32 16 50.28	W 103 47 18.02
	14682.00	89.58	358.43	10133.58	4894.66	4894.65	51.05	0.11	466348.65	709761.20	N 32 16 51.21	W 103 47 18.04
	14777.00	90.03	357.83	10133.90	4989.60	4989.59	47.78	0.97	466443.59	709757.93	N 32 16 52.15	W 103 47 18.08
	14872.00	90.03	358.28	10133.85	5084.54	5084.53	44.38	0.66	466538.52	709754.52	N 32 16 53.09	W 103 47 18.11
	14966.00	89.17	358.10	10134.50	5178.49	5178.48	41.39	0.93	466632.46	709751.54	N 32 16 54.02	W 103 47 18.14
	15061.00	88.78	357.88	10136.20	5273.42	5273.40	38.06	0.46	466727.38	709748.21	N 32 16 54.95	W 103 47 18.17
	15155.00	89.61	358.60	10137.51	5367.38	5367.35	35.17	1.16	466821.32	709745.32	N 32 16 55.88	W 103 47 18.20
	15250.00	89.85	358.36	10138.12	5462.32	5462.31	32.65	0.26	466916.28	709742.80	N 32 16 56.82	W 103 47 18.23
	15439.00	90.16	359.33	10138.44	5651.28	5651.27	28.84	0.56	467105.23	709738.99	N 32 16 58.69	W 103 47 18.28
	15534.00	89.96	358.66	10138.34	5746.26	5746.26	27.18	0.74	467200.21	709737.33	N 32 16 59.63	W 103 47 18.27
	15629.00	89.75	359.29	10138.56	5841.25	5841.24	25.48	0.70	467295.19	709735.63	N 32 17 0.57	W 103 47 18.29
	15723.00	89.46	358.88	10139.21	5935.23	5935.22	23.81	0.71	467389.16	709733.96	N 32 17 1.50	W 103 47 18.30
	15913.00	89.85	357.95	10140.85	6125.14	6125.13	18.23	0.39	467578.08	709728.38	N 32 17 3.38	W 103 47 18.35
	16007.00	89.85	358.72	10141.22	6219.10	6219.09	15.50	0.82	467673.02	709725.64	N 32 17 4.31	W 103 47 18.38
	16186.00	89.76	358.25	10142.16	6408.03	6408.02	10.50	0.26	467861.93	709720.63	N 32 17 6.18	W 103 47 18.43
	16291.00	89.75	358.59	10142.55	6502.99	6502.98	7.68	0.34	467956.88	709718.03	N 32 17 7.12	W 103 47 18.45
	16479.00	89.30	358.67	10144.11	6690.81	6690.81	0.11	1.05	468144.70	709710.26	N 32 17 8.98	W 103 47 18.53
	16574.00	89.54	358.10	10145.07	6785.70	6785.70	-4.23	1.53	468239.59	709705.92	N 32 17 9.92	W 103 47 18.58
	16763.00	89.68	0.58	10146.36	6974.67	6974.67	-6.41	1.31	468428.55	709703.75	N 32 17 11.79	W 103 47 18.59
	16858.00	89.58	0.85	10146.98	7069.66	7069.66	-6.22	0.30	468523.53	709704.93	N 32 17 12.73	W 103 47 18.57
	16952.00	89.20	1.81	10147.98	7163.63	7163.63	-3.04	1.10	468617.50	709707.11	N 32 17 13.66	W 103 47 18.54
	17047.00	89.96	0.99	10148.67	7258.60	7258.60	-0.72	1.18	468712.48	709709.43	N 32 17 14.60	W 103 47 18.51
	17142.00	90.06	0.70	10148.66	7353.59	7353.59	0.66	0.32	468807.44	709710.83	N 32 17 15.54	W 103 47 18.49
	17236.00	89.68	1.01	10148.87	7447.58	7447.58	2.09	0.52	468901.43	709712.24	N 32 17 16.47	W 103 47 18.46
	17331.00	89.51	0.84	10149.54	7542.56	7542.56	3.62	0.25	468996.40	709713.77	N 32 17 17.41	W 103 47 18.44
	17425.00	89.58	0.93	10150.29	7636.55	7636.55	5.07	0.12	469090.38	709715.22	N 32 17 18.34	W 103 47 18.42
	17520.00	89.61	1.00	10150.86	7731.53	7731.53	6.67	0.08	469185.36	709716.82	N 32 17 19.28	W 103 47 18.39
	17614.00	90.09	2.06	10151.20	7825.50	7825.49	9.18	1.24	469279.32	709719.33	N 32 17 20.21	W 103 47 18.36
	17709.00	89.85	0.90	10151.42	7920.46	7920.46	11.64	1.31	469374.28	709721.78	N 32 17 21.15	W 103 47 18.32
	17803.00	90.89	2.43	10150.86	8014.42	8014.42	14.37	2.10	469468.23	709724.52	N 32 17 22.08	W 103 47 18.29
	17898.00	89.48	1.38	10150.67	8109.38	8109.38	17.53	1.84	469563.17	709727.68	N 32 17 23.02	W 103 47 18.24
	17993.00	89.89	1.36	10151.19	8204.34	8204.33	19.81	0.43	469658.13	709729.96	N 32 17 23.96	W 103 47 18.21
	18087.00	89.96	1.94	10151.32	8298.30	8298.29	22.52	0.62	469752.09	709732.67	N 32 17 24.89	W 103 47 18.18
	18181.00	89.89	2.37	10151.44	8392.23	8392.22	26.05	0.46	469846.02	709736.20	N 32 17 25.82	W 103 47 18.13
	18276.00	91.37	3.23	10150.39	8487.11	8487.10	30.89	1.80	469940.89	709740.84	N 32 17 26.75	W 103 47 18.07
	18371.00	92.40	3.27	10147.27	8581.91	8581.90	36.08	1.09	470035.68	709746.22	N 32 17 27.69	W 103 47 18.00
	18465.00	93.30	3.26	10142.80	8675.64	8675.63	41.42	0.96	470129.40	709751.57	N 32 17 28.62	W 103 47 17.93
	18559.00	89.85	357.85	10140.01	8769.55	8769.54	42.33	6.82	470223.31	709752.48	N 32 17 29.55	W 103 47 17.92
	18749.00	88.82	356.57	10142.55	8959.20	8959.19	31.43	1.36	470412.95	709741.58	N 32 17 31.43	W 103 47 18.03
	18843.00	88.10	354.81	10145.24	9052.83	9052.83	23.63	0.69	470506.58	709733.78	N 32 17 32.35	W 103 47 18.12
	18938.00	88.00	355.21	10148.47	9147.42	9147.42	15.45	0.33	470601.17	709725.60	N 32 17 33.29	W 103 47 18.21
	19033.00	88.03	356.31	10151.76	9242.20	9242.20	10.09	3.26	470695.94	709720.24	N 32 17 34.23	W 103 47 18.26
	19127.00	88.06	359.89	10154.97	9336.13	9336.13	8.61	1.86	470789.87	709718.78	N 32 17 35.16	W 103 47 18.28
	19221.00	87.96	0.26	10158.23	9430.08	9430.07	8.74	0.41	470883.80	709718.89	N 32 17 36.09	W 103 47 18.27
	19316.00	88.17	0.09	10161.44	9525.02	9525.02	9.03	0.28	470978.74	709719.18	N 32 17 37.03	W 103 47 18.26
	19411.00	88.20	0.07	10164.45	9619.97	9619.97	9.16	0.04	471073.69	709719.31	N 32 17 37.97	W 103 47 18.25
	19505.00	87.96	0.15	10167.60	9713.92	9713.92	9.34	0.27	471167.63	709719.49	N 32 17 38.89	W 103 47 18.25
	19600.00	87.99	359.80	10170.96	9808.86	9808.86	9.13	0.58	471262.58	709719.28	N 32 17 39.83	W 103 47 18.24
	19694.00	88.72	359.24	10173.85	9902.82	9902.81	8.18	0.97	471356.51	709718.33	N 32 17 40.76	W 103 47 18.25
	19789.00	89.06	359.89	10175.49	9997.79	9997.78	7.29	0.59	471451.49	709717.44	N 32 17 41.70	W 103 47 18.25

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 ° ' ")
	19883.00	91.57	1.27	10174.98	10091.78	10091.78	8.08	3.16	471545.47	709718.23	N 32 17 42.83	W 103 47 18.24
	19978.00	89.03	357.81	10174.48	10186.75	10186.75	7.32	4.52	471640.43	709717.47	N 32 17 43.57	W 103 47 18.24
	20167.00	89.44	358.31	10177.00	10375.62	10375.62	0.92	0.34	471829.30	709711.07	N 32 17 45.44	W 103 47 18.30
	20262.00	90.54	0.46	10177.02	10470.61	10470.61	-0.10	2.54	471924.28	709710.05	N 32 17 46.38	W 103 47 18.31
	20356.00	89.85	359.67	10176.86	10564.61	10564.61	0.17	1.14	472018.27	709710.32	N 32 17 47.31	W 103 47 18.30
	20451.00	89.81	359.64	10177.48	10659.60	10659.61	-0.23	0.25	472113.26	709709.92	N 32 17 48.25	W 103 47 18.30
	20546.00	89.56	359.49	10178.15	10754.60	10754.60	-0.95	0.16	472208.25	709709.20	N 32 17 49.19	W 103 47 18.30
Final MWD Surveys Proj to Bit	20562.00	89.54	359.79	10178.27	10770.60	10770.60	-1.06	1.89	472224.25	709709.09	N 32 17 49.35	W 103 47 18.30
	20605.00	89.54	359.79	10178.62	10813.60	10813.60	-1.21	0.00	472267.24	709708.94	N 32 17 49.78	W 103 47 18.30

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	30.000	1/88.425	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 1H Gyro+MWD 0-20605'MD
	1	30.000	30.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 1H Gyro+MWD 0-20605'MD
	1	30.000	678.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 1H
	1	678.000	20605.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 1H