

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)

RECEIVED

Schlumberger

JAN 07 2020

EMNRD-OCD ARTESIA

May 21, 2019

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

Re:

SEC6, T24S, R29E, EDDY NM
32.2536254 -104.0247289

CLIENT: Oxy USA Incorporated
WELL: Height CC 6-7 Federal Com 33H
FIELD: Pierce Crossing Bone Spring

RIG: H&P 636
COUNTY: Eddy
API NO: 30-015-45561
JOB NO: 18MLD0101

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>
J. Estrada FS	Height CC 6-7 Federal Com 33H Original Hole	473.00 Ft to 19966.00 Ft	March 30, 2019 to May 18, 2019	SlimPulse

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

A. Salomon
Field Service Manager

Oilfield Services Central U.S. Land
Schlumberger Drilling and Measurements
Drilling Group
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Well Reference:

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32.2536254 -104.0247289

I, J. Estrada certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of March 30, 2019 through May 18, 2019, conduct or supervise the taking of the SlimPulse surveys from a depth of 473.00 feet to a depth of 19966.00 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 Height CC 6-7 Federal Com 33H Well (Original Hole) API No. 30-015-45561 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
J. Estrada
FS



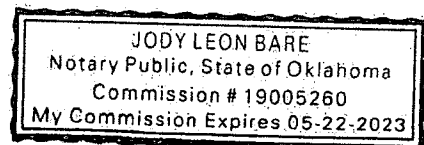
Subscribed and Sworn to before me this 31 day of May (month) 2019 (yr)
My Commission expires:

22 May 2023

Notary Public

Grady County, Oklahoma
(County State)

(signature)



Schlumberger

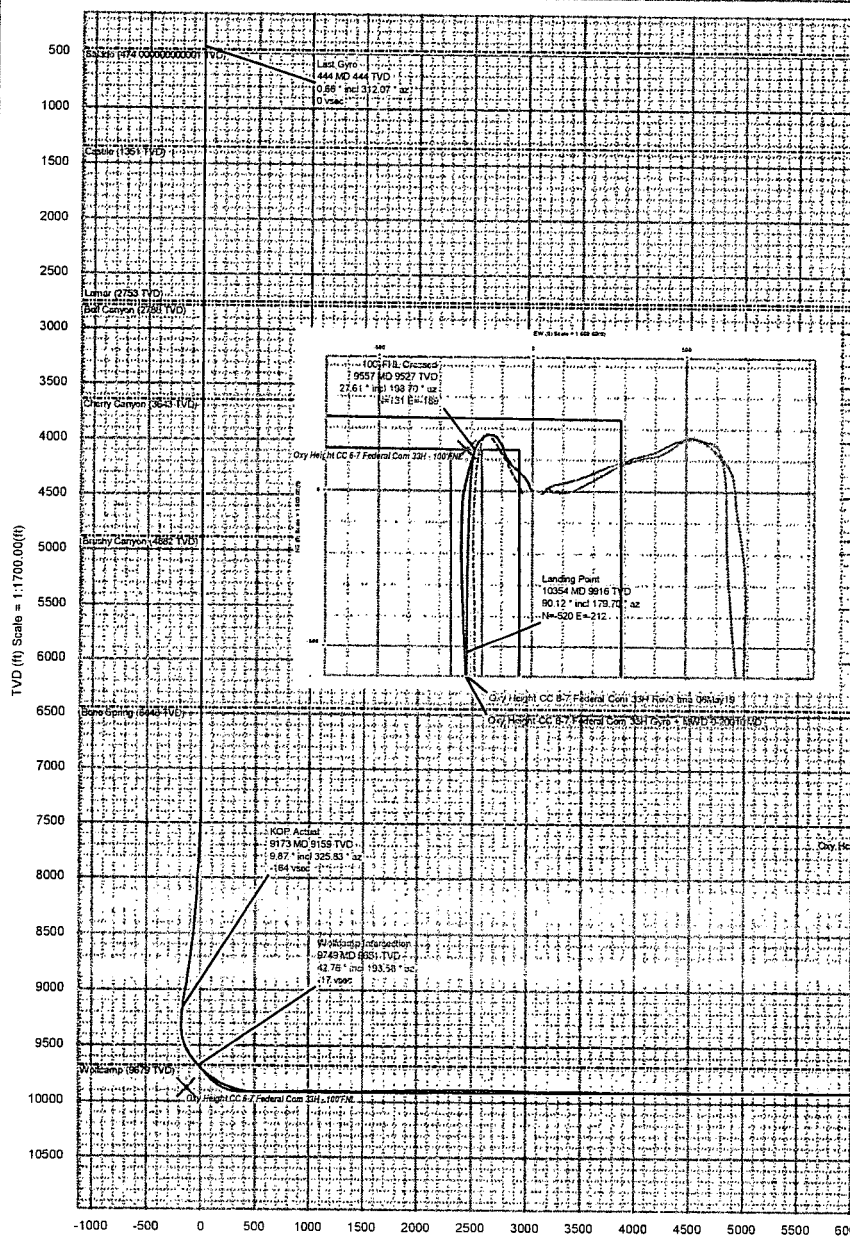
OXY



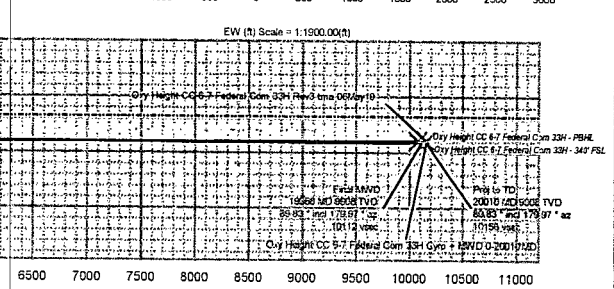
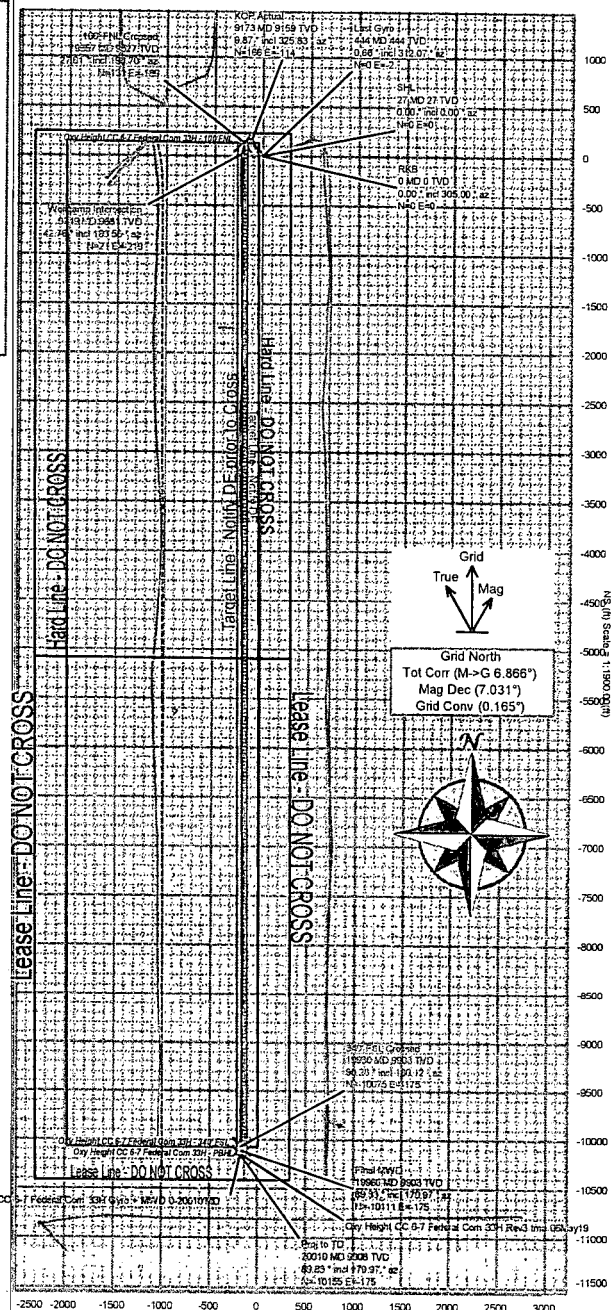
Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Height CC 6-7 Federal Com 33H	NM Eddy County (NAD 83)	Oxy Height CC 6-7 Federal Com 33H

Gravity & Magnetic Parameters				Surface Location				Miscellaneous			
Model:	IFR1	Dip:	80.021°	Date:	02-May-2019	NAD83 New Mexico State Plane, Eastern Zone, US Feet		Oxy Height CC 6-7 Federal Com 33H			
MagDec:	7.031°	F5:	47924.5nT	Gravity F5:	998.471mgm (8.80655 Based)	LAT: N 32 15 13.05	Northing: 456139.3HUS	Grid Conv:	0.1647°	TVD Ref:	RKB=26.5' (2994.7ft above MSL)
						Lon: W 104 1 29.02	Easting: 636737.12HUS	Scale Fact:	0.99991951	Plan:	Oxy Height CC 6-7 Federal Com 33H Gyro + MWD 0-20010MD

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
RKB	0.00	0.00	305.00	0.00	0.00	0.00	0.00	
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00
Last Gyro	443.80	0.66	312.07	443.79	-0.27	0.30	-1.91	0.62
KOP Actual	9173.00	9.87	325.83	9159.28	-164.13	165.97	-114.03	0.31
100' FNL Crossed	9557.00	27.61	198.70	9527.50	-128.20	131.24	-189.06	11.42
Wolfcamp Intersection	9749.15	42.76	193.58	9681.00	-17.19	20.69	-219.13	7.95
340' FSL Crossed	19930.00	90.28	180.12	9908.07	10076.44	-10074.94	-174.69	1.33
Final MWD	19966.00	89.83	179.97	9908.03	10112.44	-10110.94	-174.72	1.33
Proj to TD	20010.00	89.83	179.97	9908.16	10156.43	-10154.94	-174.70	0.00



Vertical Section (ft) Azim = 180.92° Scale = 1:1700.00(ft) Origin = 0N-S, 0E-W



Oxy Height CC 6-7 Federal Com 33H Gyro + MWD 0-20010' MD Survey

Geodetic Report

(Def Survey)



Report Date: May 20, 2019 - 12:09 PM
 Client: OXY
 Field: NM Eddy County (NAD 83)
 Structure / Slot: Oxy Height CC 6-7 Federal Com 33H / Oxy Height CC 6-7 Federal Com 33H
 Well: Oxy Height CC 6-7 Federal Com 33H
 Borehole: Original Borehole
 UWI / API#: Unknown / 30-015-45561
 Survey Name: Oxy Height CC 6-7 Federal Com 33H Gyro + MWD 0-20010' MD
 Survey Date: March 22, 2019
 Tort / AHD / DDI / ERD Ratio: 253.851' / 10611.060 ft / 6.735' / 1.071
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 15' 13.05131", W 104° 1' 29.02405"
 Location Grid N/E Y/X: N 456139.300 NUS, E 836737.120 NUS
 CRS Grid Convergence Angle: 0.1647°
 Grid Scale Factor: 0.99991951
 Version / Patch: 2.10.760.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 180.915° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB=26.5'
 TVD Reference Elevation: 2984.700 ft above MSL
 Seabed / Ground Elevation: 2956.200 ft above MSL
 Magnetic Declination: 7.031°
 Total Gravity Field Strength: 998.4714 mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 47924.600 nT
 Magnetic Dip Angle: 60.021°
 Declination Date: May 02, 2019
 Magnetic Declination Model: IFR1
 North Reference: Grid North
 Grid Convergence Used: 0.1647°
 Total Corr Mag North->Grid North: 6.8663°
 Local Coord Referenced To: Well Head

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 ° ' ")
RKB	0.00	0.00	305.00	0.00	0.00	0.00	0.00	N/A	456139.30	636737.12	N 32 15 13.05 W 104	129.02
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	456139.30	636737.12	N 32 15 13.05 W 104	129.02
	117.80	0.47	272.71	117.80	-0.01	0.02	-0.37	0.51	456139.32	636736.75	N 32 15 13.05 W 104	129.03
	190.10	0.34	253.37	190.10	0.04	-0.03	-0.88	0.26	456139.27	636736.24	N 32 15 13.05 W 104	129.03
Last Gyro	352.60	0.10	302.78	352.60	0.11	-0.09	-1.46	0.18	456139.21	636735.66	N 32 15 13.05 W 104	129.04
	443.80	0.66	312.07	443.79	-0.27	0.30	-1.91	0.62	456139.60	636735.21	N 32 15 13.05 W 104	129.05
	473.00	0.56	316.43	472.99	-0.49	0.52	-2.14	0.38	456139.82	636734.98	N 32 15 13.06 W 104	129.05
	567.00	0.12	28.31	566.99	-0.90	0.94	-2.41	0.57	456140.24	636734.71	N 32 15 13.06 W 104	129.05
	661.00	0.16	318.99	660.99	-1.09	1.13	-2.45	0.17	456140.43	636734.67	N 32 15 13.06 W 104	129.05
	755.00	0.14	356.25	754.99	-1.30	1.34	-2.54	0.10	456140.64	636734.58	N 32 15 13.06 W 104	129.05
	934.00	0.12	302.49	933.99	-1.61	1.66	-2.71	0.07	456140.96	636734.41	N 32 15 13.07 W 104	129.06
	1028.00	0.19	341.24	1027.99	-1.81	1.86	-2.85	0.13	456141.16	636734.27	N 32 15 13.07 W 104	129.06
	1122.00	0.14	323.49	1121.99	-2.05	2.10	-2.96	0.08	456141.40	636734.16	N 32 15 13.07 W 104	129.06
	1216.00	0.20	33.80	1215.99	-2.28	2.33	-2.94	0.21	456141.63	636734.18	N 32 15 13.07 W 104	129.06
	1310.00	0.18	224.42	1309.99	-2.31	2.36	-2.95	0.40	456141.66	636734.17	N 32 15 13.07 W 104	129.06
	1404.00	0.20	0.69	1403.99	-2.37	2.42	-3.05	0.38	456141.72	636734.07	N 32 15 13.08 W 104	129.06
	1499.00	0.19	337.87	1498.99	-2.68	2.73	-3.11	0.08	456142.03	636734.01	N 32 15 13.08 W 104	129.06
	1592.00	0.12	314.42	1591.99	-2.89	2.94	-3.24	0.10	456142.24	636733.88	N 32 15 13.08 W 104	129.06
	1688.00	0.15	26.50	1687.99	-3.07	3.12	-3.26	0.17	456142.42	636733.86	N 32 15 13.08 W 104	129.06
	1782.00	0.06	226.18	1781.99	-3.15	3.20	-3.24	0.22	456142.50	636733.88	N 32 15 13.08 W 104	129.06
	1876.00	0.17	299.68	1875.99	-3.18	3.23	-3.39	0.17	456142.53	636733.73	N 32 15 13.08 W 104	129.06
	1971.00	0.18	303.57	1970.99	-3.33	3.39	-3.64	0.02	456142.68	636733.48	N 32 15 13.08 W 104	129.07
	2065.00	0.23	315.64	2064.99	-3.54	3.60	-3.89	0.07	456142.90	636733.23	N 32 15 13.09 W 104	129.07
	2159.00	0.13	302.83	2158.99	-3.73	3.79	-4.12	0.11	456143.09	636733.00	N 32 15 13.09 W 104	129.07
	2254.00	0.17	204.40	2253.99	-3.66	3.72	-4.26	0.24	456143.02	636732.86	N 32 15 13.09 W 104	129.07
	2348.00	0.15	333.38	2347.98	-3.64	3.71	-4.38	0.31	456143.01	636732.74	N 32 15 13.09 W 104	129.07
	2442.00	0.19	98.03	2441.98	-3.73	3.80	-4.28	0.32	456143.10	636732.84	N 32 15 13.09 W 104	129.07
	2633.00	0.05	242.35	2632.98	-3.65	3.71	-4.04	0.12	456143.01	636733.08	N 32 15 13.09 W 104	129.07
	2728.00	0.08	114.22	2727.98	-3.60	3.67	-4.01	0.12	456142.97	636733.11	N 32 15 13.09 W 104	129.07
	2822.00	0.20	196.92	2821.98	-3.42	3.48	-4.00	0.22	456142.78	636733.12	N 32 15 13.09 W 104	129.07
	3012.00	0.07	257.61	3011.98	-3.07	3.14	-4.21	0.09	456142.44	636732.91	N 32 15 13.08 W 104	129.07
	3201.00	0.16	4.78	3200.98	-3.31	3.38	-4.30	0.10	456142.68	636732.82	N 32 15 13.08 W 104	129.07
	3296.00	0.15	329.03	3295.99	-3.55	3.62	-4.36	0.10	456142.92	636732.76	N 32 15 13.09 W 104	129.07
	3390.00	0.16	3.73	3389.98	-3.78	3.85	-4.41	0.10	456143.15	636732.71	N 32 15 13.09 W 104	129.08
	3581.00	0.18	320.89	3580.98	-4.28	4.35	-4.58	0.07	456143.65	636732.54	N 32 15 13.09 W 104	129.08
	3781.00	0.11	0.01	3780.98	-4.71	4.79	-4.78	0.06	456144.09	636732.34	N 32 15 13.10 W 104	129.08
	3965.00	0.12	129.88	3964.98	-4.77	4.84	-4.61	0.11	456144.14	636732.49	N 32 15 13.10 W 104	129.08
	4059.00	0.12	152.36	4058.98	-4.62	4.69	-4.51	0.05	456143.99	636732.61	N 32 15 13.10 W 104	129.08
	4153.00	0.04	147.60	4152.98	-4.50	4.58	-4.45	0.09	456143.88	636732.67	N 32 15 13.10 W 104	129.08
	4342.00	0.15	210.91	4341.98	-4.24	4.31	-4.45	0.07	456143.61	636732.58	N 32 15 13.09 W 104	129.08
	4438.00	0.13	241.24	4437.98	-4.07	4.15	-4.70	0.08	456143.45	636732.42	N 32 15 13.09 W 104	129.08
	4627.00	0.03	320.81	4626.98	-4.00	4.08	-4.92	0.07	456143.38	636732.20	N 32 15 13.09 W 104	129.08
	4816.00	0.06	164.95	4815.98	-3.95	4.03	-4.93	0.05	456143.33	636732.23	N 32 15 13.09 W 104	129.08
	4911.00	0.03	115.40	4910.98	-3.89	3.97	-4.89	0.05	456143.27	636732.23	N 32 15 13.09 W 104	129.08
	5011.00	0.05	317.70	5010.98	-3.91	3.99	-4.90	0.08	456143.29	636732.22	N 32 15 13.09 W 104	129.08
	5105.00	0.02	292.81	5104.98	-3.95	4.03	-4.94	0.04	456143.32	636732.18	N 32 15 13.09 W 104	129.08
	5200.00	0.02	236.99	5199.98	-3.94	4.02	-4.97	0.02	456143.32	636732.15	N 32 15 13.09 W 104	129.08
	5294.00	0.01	340.85	5293.98	-3.94	4.02	-4.98	0.03	456143.32	636732.14	N 32 15 13.09 W 104	129.08
	5484.00	0.05	10.86	5483.98	-4.04	4.12	-4.97	0.02	456143.42	636732.15	N 32 15 13.09 W 104	129.08
	5579.00	0.11	266.21	5578.98	-4.07	4.15	-5.06	0.14	456143.45	636732.06	N 32 15 13.09 W 104	129.08
	5673.00	0.08	28.09	5672.98	-4.12	4.21	-5.12	0.18	456143.50	636732.00	N 32 15 13.09 W 104	129.08
	5768.00	0.04	197.07	5767.98	-4.15	4.23	-5.09	0.13	456143.53	636732.03	N 32 15 13.09 W 104	129.08
	5862.00	0.03	355.51	5861.98	-4.14	4.23	-5.11	0.07	456143.52	636732.01	N 32 15 13.09 W 104	129.08
	5956.00	0.05	239.76	5955.98	-4.15	4.23	-5.14	0.07	456143.53	636731.98	N 32 15 13.09 W 104	129.08
	6051.00	0.13	293.52	6050.98	-4.17	4.25	-5.28	0.11	456143.55	636731.84	N 32 15 13.09 W 104	129.09
	6145.00	0.02	116.43	6144.98	-4.20	4.29	-5.36	0.16	456143.59	636731.76	N 32 15 13.09 W 104	129.09
	6240.00	0.06	146.94	6239.98	-4.15	4.24	-5.32	0.05	456143.54	636731.80	N 32 15 13.09 W 104	129.09
	6429.00	0.11	267.27	6428.98	-4.06	4.15	-5.45	0.08	456143.45	636731.67	N 32 15 13.09 W 104	129.09
	6618.00	0.06	307.48	6617.98	-4.11	4.20	-5.71	0.04	456143.50	636731.41	N 32 15 13.09 W 104	129.09
	6807.00	0.19	85.86	6806.98	-4.19	4.28	-5.47	0.13	456143.58	636731.65	N 32 15 13.09 W 104	129.09
	6901.00	0.17	51.93	6900.98	-4.29	4.38	-5.21	0.11	456143.68	636731.91	N 32 15 13.09 W 104	129.08
	6996.00	0.15	32.18	6995.98	-4.49	4.57	-5.03	0.06	456143.87	636732.09	N 32 15 13.10 W 104	129.08
	7090.00	0.18	220.36	7089.98	-4.48	4.56	-5.06	0.35	456143.86	636732.06	N 32 15 13.10 W 104	129.08
	7185.00	0.18	347.50	7184.98	-4.51	4.59	-5.19	0.34	456143.89	636731.93	N 32 15 13.10 W 104	129.08
	7373.00	0.62	324.59	7372.97	-5.62	5.71	-5.84	0.24	456145.01	636731.28	N 32 15 13.11 W 104	129.09
	7468.00	1.53	321.26	7467.96	-7.01	7.12	-6.93	0.96	456146.42	636730.19	N 32 15 13.12 W 104	129.10
	7562.00	2.38	332.04	7561.90	-9.68	9.82	-8.63	0.98	456149.12	636728.49	N 32 15 13.15 W 104	129.12
	7656.00	2.66	336.61	7655.81	-13.38	13.55	-10.41	0.37	456152.85	636726.71	N 32 15 13.19 W 104	129.14
	7751.00	2.26	337.18	7750.72	-17.10	17.30	-12.02	0.42	456156.60	636725.10	N 32 15 13.22 W 104	129.16
	7846.00	2.81	342.25	7845.63	-21.02	21.24	-13.45	0.62	456160.54	636723.67	N 32 15 13.26 W 104	129.18
	7941.00	4.13	330.73	7940.45	-26.19	26.44	-15.84	1.56	456165.74	636721.29	N 32 15 13.31 W 104	129.21
	8035.00	3.90	332.13	8034.22	-31.92	32.22	-18.98	0.27	456171.52	636718.14	N 32 15 13.37 W 104	129.24
	8224.00	5.90	317.82	8222.53	-44.64	45.10	-28.51	1.23	456184.40	636708.61	N 32 15 13.50 W 104	129.35
	8412.00	8.66	311.32	8409.00	-60.88	61.61	-45.63	1.53	456200.91	636691.49	N 32 15 13.66 W 104	129.55
	8507.00	9.03	310.17	8502.87	-70.23	71.14	-56.70	0.43	456210.44	636680.42	N 32 15 13.76 W 104	129.68
	8601.00	9.98	315.03	8595.58	-80.57	81.67	-68.10	1.32	456220.96	636669.03	N 32	

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 ° ° '")
	8884.00	9.69	343.32	8874.69	-119.50	120.99	-92.40	1.75	456260.28	636644.73	N 32 15 14.25 W 104	1 30.10
	8978.00	10.32	340.46	8967.26	-134.93	136.50	-97.48	0.85	456275.79	636639.65	N 32 15 14.40 W 104	1 30.15
	9073.00	10.05	330.33	9060.77	-150.04	151.73	-104.43	1.90	456291.01	636632.70	N 32 15 14.56 W 104	1 30.24
	9108.00	9.86	324.64	9095.24	-155.08	156.82	-107.68	2.86	456296.11	636629.45	N 32 15 14.61 W 104	1 30.27
	9173.00	9.87	325.83	9159.28	-164.13	165.97	-114.03	0.31	456305.26	636623.10	N 32 15 14.70 W 104	1 30.35
	9268.00	9.66	293.46	9252.98	-173.86	175.89	-125.92	5.71	456315.17	636611.21	N 32 15 14.80 W 104	1 30.48
	9363.00	14.86	262.79	9345.87	-175.19	177.54	-145.35	8.59	456316.82	636591.78	N 32 15 14.81 W 104	1 30.71
	9458.00	20.12	226.92	9436.70	-162.08	164.80	-169.46	12.36	456304.09	636567.68	N 32 15 14.69 W 104	1 30.99
	9552.00	27.06	199.02	9523.06	-130.39	133.41	-188.31	13.80	456272.70	636548.82	N 32 15 14.38 W 104	1 31.21
100' FNL Crossed	9557.00	27.61	198.70	9527.50	-128.20	131.24	-189.05	11.42	456270.53	636548.08	N 32 15 14.36 W 104	1 31.22
	9647.00	37.64	194.49	9603.21	-81.51	84.75	-202.66	11.42	456224.04	636534.48	N 32 15 13.90 W 104	1 31.38
	9742.00	42.75	194.42	9675.75	-21.92	25.40	-217.95	5.38	456164.70	636519.18	N 32 15 13.31 W 104	1 31.56
Wolfcamp Intersection	9749.15	42.76	193.58	9681.00	-17.19	20.69	-219.13	7.95	456159.99	636518.01	N 32 15 13.26 W 104	1 31.57
	9836.00	43.36	183.50	9744.53	41.43	-37.80	-227.88	7.95	456101.50	636509.26	N 32 15 12.88 W 104	1 31.68
	9930.00	48.97	181.27	9809.62	109.18	-105.51	-230.64	6.21	456033.80	636506.50	N 32 15 12.01 W 104	1 31.71
	10023.00	61.88	179.99	9882.28	185.59	-181.92	-231.42	13.93	455957.40	636505.72	N 32 15 11.26 W 104	1 31.72
	10117.00	72.67	177.78	9897.01	272.67	-269.04	-229.64	13.78	455870.29	636507.49	N 32 15 10.40 W 104	1 31.71
	10210.00	88.78	177.21	9910.36	364.30	-360.75	-225.62	15.18	455778.58	636511.51	N 32 15 9.49 W 104	1 31.66
	10274.00	89.71	177.14	9911.20	428.16	-424.66	-222.47	1.46	455714.67	636514.67	N 32 15 8.86 W 104	1 31.63
	10314.00	90.39	176.68	9911.17	468.06	-464.60	-220.31	2.05	455674.73	636516.82	N 32 15 8.46 W 104	1 31.60
	10409.00	90.22	178.13	9910.66	562.88	-559.50	-216.01	1.54	455579.84	636521.12	N 32 15 7.52 W 104	1 31.56
	10503.00	90.56	179.66	9910.02	656.82	-653.48	-214.20	1.67	455485.87	636522.94	N 32 15 6.59 W 104	1 31.54
	10598.00	90.25	178.69	9909.35	751.77	-748.47	-212.83	1.07	455390.89	636524.30	N 32 15 5.65 W 104	1 31.53
	10693.00	90.87	178.45	9908.42	846.68	-843.43	-210.46	0.70	455295.94	636526.68	N 32 15 4.71 W 104	1 31.50
	10788.00	91.32	177.12	9906.61	941.52	-938.34	-208.79	1.48	455201.04	636530.35	N 32 15 3.77 W 104	1 31.46
	10882.00	90.49	176.75	9905.12	1035.28	-1032.19	-201.77	0.97	455107.19	636535.37	N 32 15 2.84 W 104	1 31.41
	10977.00	90.49	176.28	9904.31	1130.00	-1127.02	-195.99	0.49	455012.38	636541.14	N 32 15 1.91 W 104	1 31.34
	11072.00	90.22	176.72	9903.72	1224.72	-1221.84	-190.19	0.54	454917.57	636546.94	N 32 15 0.97 W 104	1 31.28
	11166.00	87.91	175.16	9905.25	1318.34	-1315.58	-183.54	2.97	454823.83	636553.60	N 32 15 0.04 W 104	1 31.21
	11260.00	89.29	175.97	9907.55	1411.90	-1409.27	-178.27	1.70	454730.15	636560.86	N 32 14 59.11 W 104	1 31.12
	11355.00	92.01	181.25	9906.45	1506.89	-1504.14	-174.77	4.01	454635.29	636565.36	N 32 14 58.17 W 104	1 31.07
	11450.00	90.29	179.91	9901.20	1695.58	-1693.04	-171.65	2.79	454540.36	636565.49	N 32 14 57.23 W 104	1 31.08
	11544.00	91.46	179.19	9899.75	1790.54	-1788.02	-172.60	2.32	454446.40	636564.53	N 32 14 56.30 W 104	1 31.09
	11639.00	90.67	179.21	9897.99	1885.48	-1883.00	-171.85	1.45	454351.43	636565.28	N 32 14 55.36 W 104	1 31.08
	11734.00	90.84	180.41	9896.75	1979.45	-1976.98	-170.53	0.83	454256.46	636566.61	N 32 14 54.42 W 104	1 31.07
	11828.00	89.70	185.91	9896.30	2074.34	-2071.80	-170.22	1.29	454162.48	636566.92	N 32 14 53.49 W 104	1 31.07
	11923.00	90.73	186.70	9895.94	2168.92	-2166.22	-175.45	5.91	454067.67	636561.68	N 32 14 52.56 W 104	1 31.14
	12018.00	90.77	185.61	9894.70	2263.51	-2260.67	-185.88	1.37	453973.25	636551.25	N 32 14 51.62 W 104	1 31.26
	12113.00	89.94	184.36	9894.11	2358.26	-2355.30	-196.07	1.15	453878.82	636547.01	N 32 14 50.69 W 104	1 31.38
	12208.00	90.19	183.76	9894.00	2453.12	-2450.06	-204.32	1.58	453784.19	636532.81	N 32 14 49.75 W 104	1 31.48
	12303.00	89.91	183.12	9893.92	2547.03	-2543.89	-211.05	0.88	453689.44	636526.09	N 32 14 48.81 W 104	1 31.56
	12397.00	89.50	181.87	9894.41	2641.99	-2638.80	-216.69	0.74	453595.62	636520.45	N 32 14 47.89 W 104	1 31.63
	12492.00	89.26	181.16	9895.44	2736.98	-2733.76	-220.82	1.38	453500.72	636516.31	N 32 14 46.95 W 104	1 31.68
	12587.00	89.23	180.44	9896.68	2830.97	-2827.74	-224.34	0.79	453405.76	636513.80	N 32 14 46.01 W 104	1 31.72
	12681.00	89.02	179.15	9898.13	2925.94	-2922.73	-224.65	0.77	453311.79	636512.49	N 32 14 45.08 W 104	1 31.73
	12776.00	88.81	178.74	9899.93	3020.86	-3017.70	-222.56	1.38	453216.81	636512.83	N 32 14 44.14 W 104	1 31.73
	12871.00	90.22	178.77	9900.73	3115.79	-3112.67	-220.50	0.48	453121.85	636514.58	N 32 14 43.20 W 104	1 31.72
	12966.00	89.98	178.87	9900.57	3210.73	-3207.65	-218.54	0.27	453026.89	636516.64	N 32 14 42.26 W 104	1 31.70
	13061.00	89.78	178.54	9900.76	3304.66	-3301.62	-216.41	0.41	452931.92	636518.60	N 32 14 41.32 W 104	1 31.68
	13155.00	89.71	178.97	9901.19	3399.59	-3396.60	-214.35	0.46	452837.95	636520.72	N 32 14 40.39 W 104	1 31.65
	13250.00	90.02	179.07	9901.41	3494.54	-3491.59	-212.73	0.34	452742.98	636522.79	N 32 14 39.45 W 104	1 31.63
	13345.00	88.98	178.33	9902.24	3589.46	-3586.56	-210.57	1.34	452648.00	636524.41	N 32 14 38.51 W 104	1 31.62
	13440.00	89.47	177.64	9903.51	3683.33	-3680.49	-207.27	0.90	452553.04	636526.57	N 32 14 37.57 W 104	1 31.60
	13534.00	90.22	177.02	9903.77	3778.14	-3775.38	-202.84	1.02	452459.12	636529.87	N 32 14 36.64 W 104	1 31.56
	13629.00	89.57	176.59	9903.94	3872.89	-3870.23	-197.55	0.82	452364.23	636534.30	N 32 14 35.70 W 104	1 31.51
	13724.00	89.91	176.11	9904.37	3967.59	-3965.04	-191.50	0.82	452269.38	636539.59	N 32 14 34.76 W 104	1 31.45
	13819.00	89.71	179.00	9904.69	4062.42	-4059.94	-187.45	3.05	452174.59	636545.64	N 32 14 33.82 W 104	1 31.39
	13914.00	89.81	180.22	9905.08	4156.39	-4153.94	-186.81	1.30	452079.69	636549.69	N 32 14 32.88 W 104	1 31.34
	14008.00	89.88	179.39	9905.34	4251.37	-4248.94	-186.48	0.88	451985.70	636550.33	N 32 14 31.95 W 104	1 31.34
	14103.00	89.84	179.14	9905.80	4346.32	-4343.92	-184.05	0.13	451890.71	636550.65	N 32 14 31.01 W 104	1 31.34
	14293.00	89.54	179.62	9906.32	4441.29	-4438.92	-181.05	0.60	451700.75	636553.09	N 32 14 29.13 W 104	1 31.32
	14388.00	90.19	180.61	9906.54	4536.26	-4533.91	-182.02	1.25	451605.76	636554.12	N 32 14 28.19 W 104	1 31.31
	14483.00	90.22	179.72	9906.20	4631.25	-4628.91	-183.21	0.95	451510.77	636553.93	N 32 14 27.25 W 104	1 31.31
	14577.00	90.57	181.14	9905.55	4725.24	-4722.91	-183.48	1.54	451416.78	636553.66	N 32 14 26.32 W 104	1 31.32
	14672.00	89.98	179.14	9905.09	4820.23	-4817.90	-184.19	2.19	451321.80	636552.94	N 32 14 25.38 W 104	1 31.33
	14767.00	88.54	181.44	9906.32	4915.21	-4912.89	-184.42	2.86	451226.81	636552.71	N 32 14 24.44 W 104	1 31.34
	14862.00	90.88	180.76	9906.80	5010.19	-5007.88	-184.90	2.59	451131.84	636552.23	N 32 14 23.50 W 104	1 31.34
	14956.00	90.53	180.34	9905.64	5104.18	-5101.85	-186.71	0.58	451037.87	636550.43	N 32 14 22.57 W 104	1 31.37
	15050.00	90.46	181.05	9904.82	5198.17	-5195.84	-187.61	0.75	450943.89	636549.52	N 32 14 21.64 W 104	1 31.38
	15145.00	90.15	177.96	9904.07	5293.17	-5290.83	-188.76	1.16	450848.91	636548.37	N 32 14 20.70 W 104	1 31.40
	15239.00	89.57	180.46	9903.51	5387.16	-5384.82	-189.62	2.66	450754.92	636547.51	N 32 14 19.77 W 104	1 31.41
	15333.00	89.57	181.50	9903.43	5481.10	-5478.80	-187.95	1.49	450660.95	636549.18	N 32 14 18.84 W 104	1 31.40
	15428.00	90.33	180.84	9902.64	5576.05	-5573.78	-186.64	1.76	450565.98	636550.49	N 32 14 17.90 W 104	1 31.38
	15523.00	90.64	179.89	9901.83	5671.05	-5668.77	-188.27	0.78	450471.00	636548.87	N 32 14 16.96 W 104	1 31.41
	15618.00	90.29	178.13	9901.07	5766.05	-5763.75	-189.62	1.05	450376.02	636547.52	N 32 14 16.02 W 104	1 31.42
	15712.00	90.57	181.14	9905.55	5860.04	-5857.75	-190.41	1.91	450282.04	636546.72	N 32 14 15.09 W 104	1 31.44
	15807.00	90.29	178.1									

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 ° ' ")
	18738.00	89.83	179.44	9909.03	8884.60	-8883.01	-169.95	0.04	447257.02	636567.18	N 32 13 45.16 W 104	1 31.30
	18832.00	90.01	179.61	9909.16	8978.57	-8977.01	-169.17	0.26	447163.03	636567.96	N 32 13 44.23 W 104	1 31.29
	18927.00	89.83	179.70	9909.29	9073.54	-9072.01	-168.60	0.21	447068.04	636568.53	N 32 13 43.29 W 104	1 31.29
	19022.00	89.66	180.08	9909.71	9168.53	-9167.01	-168.42	0.44	446973.05	636568.71	N 32 13 42.35 W 104	1 31.29
	19117.00	89.90	179.92	9910.08	9263.52	-9262.01	-168.42	0.30	446878.06	636568.71	N 32 13 41.41 W 104	1 31.29
	19211.00	89.90	180.28	9910.24	9357.51	-9356.01	-168.58	0.38	446784.07	636568.55	N 32 13 40.48 W 104	1 31.30
	19305.00	89.83	180.80	9910.46	9451.50	-9450.00	-169.47	0.56	446690.08	636567.66	N 32 13 39.55 W 104	1 31.31
	19400.00	89.77	180.49	9910.80	9546.50	-9545.00	-170.54	0.33	446595.09	636566.59	N 32 13 38.61 W 104	1 31.33
	19495.00	91.11	181.80	9910.07	9641.49	-9639.97	-172.44	1.97	446500.13	636564.70	N 32 13 37.67 W 104	1 31.35
	19590.00	89.83	179.99	9909.29	9736.48	-9734.95	-173.92	2.33	446405.15	636563.21	N 32 13 36.73 W 104	1 31.37
	19685.00	90.04	180.09	9909.39	9831.47	-9829.95	-173.99	0.24	446310.16	636563.15	N 32 13 35.79 W 104	1 31.38
	19779.00	89.90	180.05	9909.44	9925.46	-9923.95	-174.10	0.15	446216.17	636563.03	N 32 13 34.86 W 104	1 31.38
	19873.00	91.00	180.37	9908.71	10019.45	-10017.94	-174.45	1.22	446122.18	636562.69	N 32 13 33.93 W 104	1 31.39
Final MWD	19966.00	89.83	179.97	9908.03	10112.44	-10110.94	-174.72	1.33	446029.20	636562.41	N 32 13 33.01 W 104	1 31.40
Proj to TD	20010.00	89.83	179.97	9908.16	10156.43	-10154.94	-174.70	0.00	445985.20	636562.43	N 32 13 32.57 W 104	1 31.40

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)	EQU 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 Height CC 6-7 Federal Com 33H Gyro + MWD 0-20010'MD
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Oxy Height CC 6-7 Federal Com 33H Gyro + MWD 0-20010'MD
	1	26.500	443.800	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Oxy Height CC 6-7 Federal Com 33H Gyro + MWD 0-20010'MD
	1	443.800	20010.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Oxy Height CC 6-7 Federal Com 33H Gyro +

...Original Borehole\Oxy Height CC 6-7 Federal Com 33H Gyro + MWD 0-20010'MD