

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)
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RECEIVED

JUN 12 2019

Schlumberger

DISTRICT II-ARTESIA O.C.D.

Well Reference:
15, 24S, 29E, Eddy NM
32.21398 103.96510

I, Chris Heimann certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of February 16, 2019 through March 08, 2019, conduct or supervise the taking of the SlimPulse & Third Party Corrected surveys from a depth of 10485.00 feet to a depth of 21127.00 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 Whomping Willow CC 15-16 State Com 44H ST01 Well (Side Track) API No. 30-015-45218 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
Chris Heimann
FE

Chris Heimann

Subscribed and Sworn to before me this 18th day of March (month) 2019 (yr)

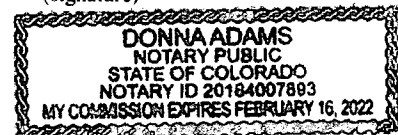
My Commission expires:

2-16-2022

D Adams
Notary Public

Adams County Colorado
(County State)

(signature)



Schlumberger

OXY

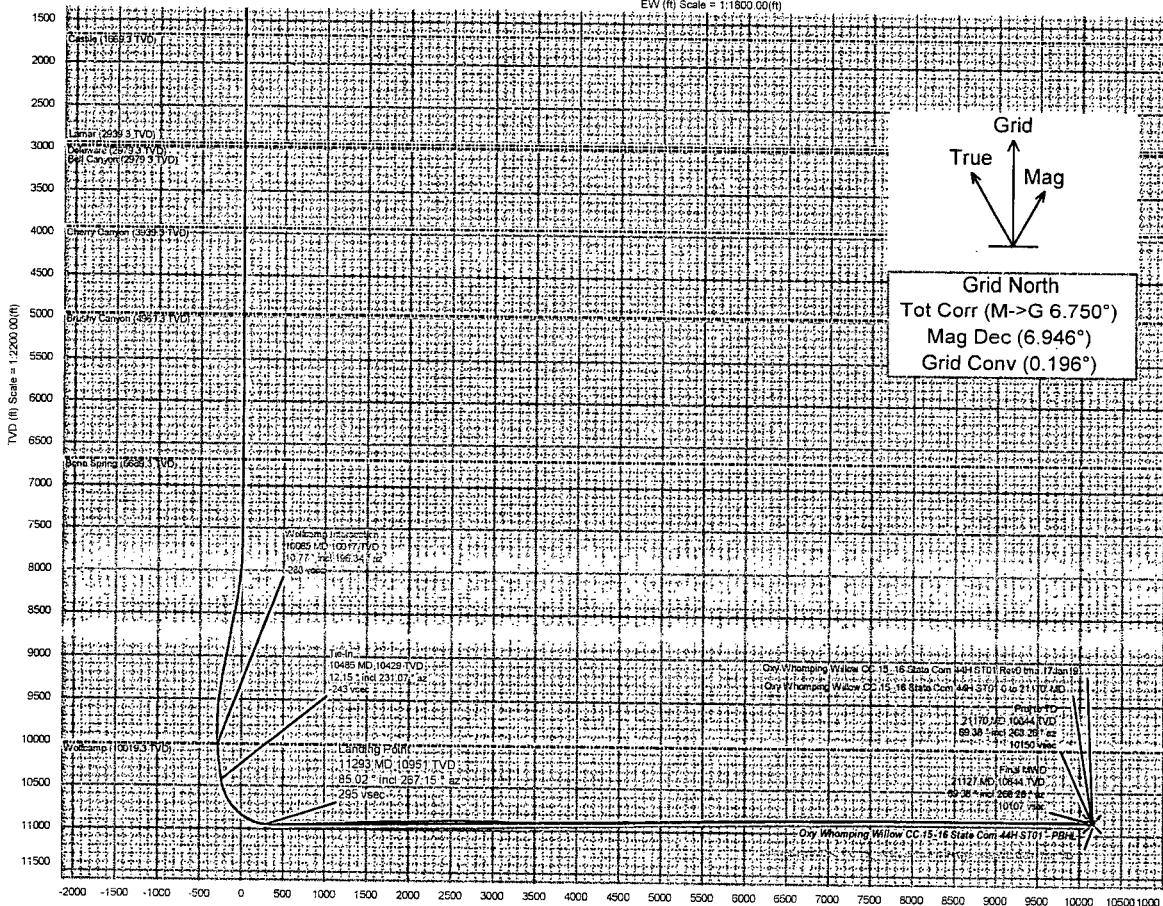
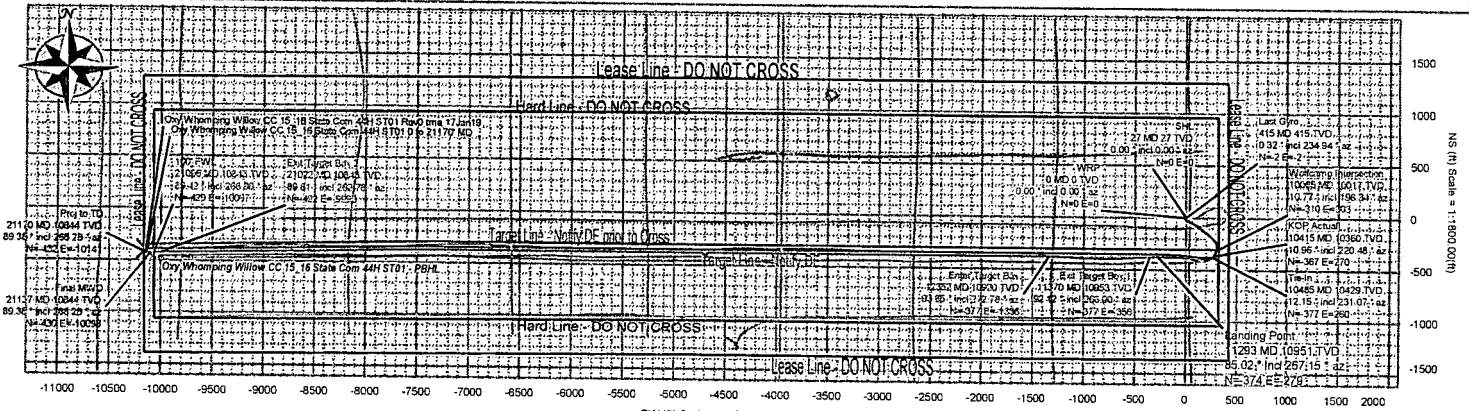


Borehole:	Well:	Field:	Structure:
ST01	Oxy Whomping Willow CC 15_16 State Com 44H	NM Eddy County (NAD 83)	Oxy Whomping Willow CC 15_16 State Com 44H

Gravity & Magnetic Parameters	Surface Location	Miscellaneous
Model: IFR1 Dip: 58.964° Date: 12-Feb-2019	NAD83 New Mexico State Plane, Eastern Zone, US Feet	WFM WFM WFM
MagDec: 6.946° FS: 47938.2nT Gravity FS: 988.47mgm (9.80665 Based)	Lat: N 32 12 50.36 Northing: 441778.01mUS Grd Conv: 0.1963°	Slot: Willow CC 15_16 State Com 44H
	Lon: W 103 57 54.39 Easting: 656217.11mUS Scale Fact: 0.99992394	TVD Ref: RKB=26.5(2969.3ft above MSL)
		Plan: Oxy Whomping Willow CC 15_16 State Com 44H ST01 0 to 21170 MD

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)S(-)	E(+)W(-)	DLS
Tie-In	10485.00	12.15	231.07	10428.54	-244.60	-377.04	259.67	
Landing Point	11293.00	85.02	267.15	10950.98	293.22	-374.02	-278.69	9.29
Exit Target Box 1	11370.00	92.12	268.00	10952.91	370.15	-377.26	-355.55	9.29
Enter Target Box	12352.00	93.85	272.78	10919.95	1349.96	-377.27	-1336.13	1.19
Exit Target Box 2	21022.00	89.81	262.78	10842.73	10002.15	-422.39	-9993.27	5.91
100' FWL	21096.00	89.42	266.86	10843.28	10076.04	-428.95	-10066.96	4.57
Final MWD	21127.00	89.38	268.28	10843.60	10107.04	-430.26	-10097.93	4.57
Proj to TD	21170.00	89.38	268.28	10844.07	10150.03	-431.55	-10140.90	0.00



Vertical Section (ft) Azim = 267.45° Scale = 1:2200.00(ft) Origin = ON-S, 0E-V

Oxy Whomping Willow CC 15_16 State Com 44H ST01 0 to 21170' MD

Survey Geodetic Report

(Def Survey)



Report Date: March 08, 2019 - 10:15 AM Client: OXY Field: NM Eddy County (NAD 83) Structure / Slot: Oxy Whomping Willow CC 15_16 State Com 44H / Oxy Whomping Willow CC 15_16 State Com 44H Well: Oxy Whomping Willow CC 15_16 State Com 44H Borehole: ST01 UWI / API#: Unknown / 30-015-45218	Survey / DLS Computation: Minimum Curvature / Lubinski Vertical Section Azimuth: 267.741 ° (Grid North) Vertical Section Origin: 0.000 ft, 0.000 ft TVD Reference Datum: RKB=26.5' TVD Reference Elevation: 2969.300 ft above MSL Seabed / Ground Elevation: 2942.800 ft above MSL Magnetic Declination: 6.946 ° Total Gravity Field Strength: 998.4701mgn (9.80665 Based)	Survey Name: Oxy Whomping Willow CC 15_16 State Com 44H ST01 0 to 21170' MD Survey Date: January 16, 2019 Tort / AHD / DDI / ERD Ratio: 361.775 ° / 10984.199 ft / 6.885 / 1.003 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet Location Lat / Long: N 32° 12' 50.35784", W 103° 57' 54.39218" Location Grid N/E Y/X: N 441778.010 RUS, E 655217.110 RUS CRS Grid Convergence Angle: 0.1963 ° Grid Scale Factor: 0.99992394 Version / Patch: 2.10.753.0
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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 ° ' ")
WRP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	441778.01	655217.11	N 32 12 50.36	W 103 57 54.39
SHL	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	441778.01	655217.11	N 32 12 50.36	W 103 57 54.39
	113.50	0.33	236.94	113.50	0.22	-0.14	-0.21	0.38	441777.87	655216.90	N 32 12 50.36	W 103 57 54.39
	171.50	0.50	232.63	171.50	0.57	-0.38	-0.55	0.30	441777.63	655216.56	N 32 12 50.35	W 103 57 54.40
	226.50	0.51	237.45	226.50	0.97	-0.66	-0.95	0.08	441777.35	655216.16	N 32 12 50.35	W 103 57 54.40
	289.50	0.47	230.74	289.49	1.42	-0.97	-1.38	0.11	441777.04	655215.73	N 32 12 50.35	W 103 57 54.41
	352.50	0.33	211.24	352.49	1.73	-1.29	-1.68	0.31	441776.72	655215.43	N 32 12 50.34	W 103 57 54.41
	415.00	0.32	234.94	414.99	1.97	-1.55	-1.91	0.21	441776.46	655215.20	N 32 12 50.34	W 103 57 54.41
	562.00	0.32	227.51	561.99	2.63	-2.06	-2.55	0.03	441775.95	655214.56	N 32 12 50.34	W 103 57 54.42
	650.00	0.27	220.26	649.99	2.96	-2.38	-2.87	0.07	441775.63	655214.24	N 32 12 50.33	W 103 57 54.43
	835.00	0.29	212.92	834.99	3.52	-3.11	-3.40	0.02	441774.90	655213.71	N 32 12 50.33	W 103 57 54.43
	927.00	0.27	234.46	926.98	3.84	-3.43	-3.71	0.12	441774.58	655213.40	N 32 12 50.32	W 103 57 54.44
	1019.00	0.28	234.33	1018.98	4.21	-3.69	-4.07	0.01	441774.32	655213.04	N 32 12 50.32	W 103 57 54.44
	1110.00	0.22	272.07	1109.98	4.57	-3.81	-4.42	0.19	441774.20	655212.69	N 32 12 50.32	W 103 57 54.44
	1201.00	0.24	286.09	1200.98	4.92	-3.75	-4.78	0.07	441774.26	655212.33	N 32 12 50.32	W 103 57 54.45
	1293.00	0.49	267.12	1292.98	5.50	-3.72	-5.36	0.30	441774.29	655211.75	N 32 12 50.32	W 103 57 54.45
	1385.00	0.75	244.79	1384.97	6.45	-3.99	-6.30	0.38	441774.02	655210.81	N 32 12 50.32	W 103 57 54.47
	1568.00	0.17	249.29	1567.97	7.81	-4.60	-7.63	0.32	441773.41	655209.48	N 32 12 50.31	W 103 57 54.48
	1659.00	0.04	99.72	1658.97	7.91	-4.65	-7.73	0.23	441773.36	655209.38	N 32 12 50.31	W 103 57 54.48
	1754.00	0.04	148.33	1753.97	7.86	-4.69	-7.68	0.03	441773.32	655209.43	N 32 12 50.31	W 103 57 54.48
	1848.00	0.08	72.32	1847.97	7.78	-4.70	-7.60	0.09	441773.32	655209.51	N 32 12 50.31	W 103 57 54.48
	1943.00	0.06	133.47	1942.97	7.68	-4.71	-7.50	0.08	441773.30	655209.61	N 32 12 50.31	W 103 57 54.48
	2037.00	0.13	228.03	2036.97	7.73	-4.81	-7.54	0.16	441773.20	655209.57	N 32 12 50.31	W 103 57 54.48
	2132.00	0.20	210.53	2131.97	7.90	-5.03	-7.71	0.09	441772.98	655209.40	N 32 12 50.31	W 103 57 54.48
	2226.00	0.03	110.61	2225.97	7.97	-5.18	-7.77	0.22	441772.83	655209.34	N 32 12 50.31	W 103 57 54.48
	2321.00	0.08	114.55	2320.97	7.88	-5.22	-7.68	0.05	441772.79	655209.43	N 32 12 50.31	W 103 57 54.48
	2416.00	0.08	106.44	2415.97	7.76	-5.26	-7.56	0.01	441772.75	655209.55	N 32 12 50.31	W 103 57 54.48
	2511.00	0.06	343.76	2510.97	7.71	-5.23	-7.51	0.13	441772.78	655209.60	N 32 12 50.31	W 103 57 54.48
	2700.00	0.10	183.75	2699.97	7.75	-5.30	-7.55	0.08	441772.71	655209.56	N 32 12 50.31	W 103 57 54.48
	2795.00	0.22	167.62	2794.97	7.73	-5.56	-7.51	0.13	441772.45	655209.60	N 32 12 50.30	W 103 57 54.48
	2889.00	0.15	134.67	2888.97	7.61	-5.83	-7.39	0.13	441772.18	655209.72	N 32 12 50.30	W 103 57 54.48
	2984.00	0.07	305.35	2983.97	7.57	-5.88	-7.35	0.23	441772.13	655209.76	N 32 12 50.30	W 103 57 54.48
	3172.00	0.04	118.37	3171.97	7.61	-5.84	-7.38	0.06	441772.17	655209.73	N 32 12 50.30	W 103 57 54.48
	3267.00	0.04	298.89	3266.97	7.61	-5.84	-7.38	0.08	441772.17	655209.73	N 32 12 50.30	W 103 57 54.48
	3361.00	0.06	355.15	3360.97	7.64	-5.78	-7.42	0.05	441772.23	655209.69	N 32 12 50.30	W 103 57 54.48
	3455.00	0.04	96.65	3454.97	7.61	-5.73	-7.39	0.08	441772.28	655209.72	N 32 12 50.30	W 103 57 54.48
	3549.00	0.06	3.84	3548.97	7.57	-5.69	-7.35	0.08	441772.32	655209.76	N 32 12 50.30	W 103 57 54.48
	3739.00	0.04	122.36	3738.97	7.51	-5.63	-7.29	0.05	441772.39	655209.82	N 32 12 50.30	W 103 57 54.48
	3927.00	0.10	328.87	3926.97	7.53	-5.52	-7.32	0.07	441772.49	655209.79	N 32 12 50.30	W 103 57 54.48
	4022.00	0.10	235.06	4021.97	7.64	-5.50	-7.43	0.15	441772.51	655209.68	N 32 12 50.30	W 103 57 54.48
	4116.00	0.10	192.79	4115.97	7.73	-5.62	-7.51	0.08	441772.39	655209.60	N 32 12 50.30	W 103 57 54.48
	4211.00	0.10	356.25	4210.97	7.75	-5.62	-7.54	0.21	441772.39	655209.57	N 32 12 50.30	W 103 57 54.48
	4306.00	0.08	68.45	4305.97	7.69	-5.51	-7.48	0.11	441772.50	655209.63	N 32 12 50.30	W 103 57 54.48
	4400.00	0.28	317.64	4399.96	7.78	-5.32	-7.58	0.34	441772.69	655209.53	N 32 12 50.31	W 103 57 54.48
	4495.00	0.07	53.76	4494.96	7.88	-5.11	-7.69	0.31	441772.90	655209.43	N 32 12 50.31	W 103 57 54.48
	4590.00	0.07	280.47	4589.96	7.89	-5.07	-7.70	0.14	441772.94	655209.41	N 32 12 50.31	W 103 57 54.48
	4684.00	0.15	146.06	4683.96	7.88	-5.29	-7.68	0.22	441772.85	655209.43	N 32 12 50.31	W 103 57 54.48
	4779.00	0.05	231.49	4778.96	7.85	-5.16	-7.65	0.16	441772.72	655209.46	N 32 12 50.31	W 103 57 54.48
	4873.00	0.01	337.55	4872.96	7.89	-5.31	-7.68	0.06	441772.70	655209.43	N 32 12 50.31	W 103 57 54.48
	5035.00	0.05	236.47	5034.96	7.95	-5.33	-7.75	0.03	441772.68	655209.36	N 32 12 50.31	W 103 57 54.48
	5130.00	0.27	210.32	5129.96	8.11	-5.55	-7.89	0.24	441772.46	655208.96	N 32 12 50.30	W 103 57 54.48
	5224.00	0.34	212.50	5223.96	8.38	-5.98	-8.16	0.08	441772.03	655208.49	N 32 12 50.30	W 103 57 54.48
	5319.00	0.49	230.57	5318.96	8.87	-6.47	-8.62	0.21	441771.54	655208.49	N 32 12 50.29	W 103 57 54.49
	5414.00	0.56	244.19	5413.96	9.62	-6.93	-9.35	0.15	441771.08	655207.76	N 32 12 50.29	W 103 57 54.50
	5508.00	0.61	246.40	5507.95	10.51	-7.33	-10.22	0.06	441770.68	655206.88	N 32 12 50.29	W 103 57 54.51
	5603.00	0.10	238.44	5602.95	11.05	-7.58	-10.76	0.54	441770.43	655206.35	N 32 12 50.28	W 103 57 54.52
	5697.00	0.07	139.70	5696.95	11.08	-7.67	-10.79	0.14	441770.34	655206.32	N 32 12 50.28	W 103 57 54.52
	5791.00	0.15	244.96	5790.95	11.16	-7.76	-10.87	0.19	441770.25	655206.25	N 32 12 50.28	W 103 57 54.52
	5886.00	0.14	105.78	5885.95	11.17	-7.85	-10.87	0.29	441770.16	655206.24	N 32 12 50.28	W 103 57 54.52
	5980.00	0.10	80.27	5979.95	10.98	-7.86	-10.68	0.07	441770.15	655206.44	N 32 12 50.28	W 103 57 54.52
	6075.00	0.21	110.08	6074.95	10.73	-7.91	-10.43	0.14	441770.10	655206.68	N 32 12 50.28	W 103 57 54.51
	6169.00	0.17	100.27	6168.95	10.44	-7.99	-10.13	0.05	441770.02	655206.98	N 32 12 50.28	W 103 57 54.51
	6264.00	0.21	115.46	6263.95	10.15	-8.09	-9.83	0.07	441769.92	655207.28	N 32 12 50.28	W 103 57 54.51
	6358.00	0.16	69.62	6357.95	9.87	-8.12	-9.56	0.16	441769.89	655207.55	N 32 12 50.28	W 103 57 54.50
	6453.00	0.05	265.53	6452.95	9.78	-8.08	-9.47	0.22	441769.93	655207.64	N 32 12 50.28	W 103 57 54.50
	6547.00	0.17	183.96	6546.95	9.84	-8.22	-9.52	0.18	441769.79	655207.59	N 32 12 50.28	W 103 57 54.50
	6736.00	0.16	349.89	6735.95	9.91	-8.24	-9.59	0.17	441769.77	655207.52	N 32 12 50.28	W 103 57 54.50
	6831.00	0.21	63.73	6830.95	9.77	-8.03	-9.46	0.24	441769.98	655207.65	N 32 12 50.28	W 103 57 54.50
	6925.00	0.19	307.63	6924.95	9.73	-7.86	-9.43	0.36	441770.15	655207.68	N 32 12 50.28	W 103 57 54.50
	7020.00	0.06	187.56	7019.95	9.86	-7.81	-9.56	0.24	441770.20	655207.55	N 32 12 50.28	W 103 57 54.50
	7114.00	0.12	16.00	7113.95	9.84	-7.77	-9.54	0.19	441770.24	655207.57	N 32 12 50.28	W 103 57 54.50
	7209.00	0.14	121.62	7208.94	9.71	-7.73	-9.41	0.22	441770.28	655207.70	N 32 12 50.28	W 103 57 54.50
	7303.00	0.15	102.98	7302.94	9.49	-7.82	-9.19	0.05	441770.19	655207.92	N 32 12 50.28	W 103 57 54.50
	7493.00	0.77	151.43	7492.94	8.69	-9.00	-8.34	0.36	441769.01	655208.77	N 32 12 50.27	W 103 57 54.49
	7682.00	2.34	137.37	7681.86	5.63	-12.95	-5.12					

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 ° ' '')
	7968.00	5.89	116.96	7965.33	-6.56	-23.07	7.48	2.42	441754.94	655224.59	N 32 12 50.13 W 103 57 54.31	
	8060.00	6.99	112.21	8058.74	-15.98	-27.42	17.07	1.30	441750.59	655234.18	N 32 12 50.09 W 103 57 54.19	
	8155.00	8.57	115.49	8152.86	-27.50	-32.65	28.81	1.73	441745.36	655245.92	N 32 12 50.03 W 103 57 54.06	
	8250.00	11.13	116.60	8246.45	-41.80	-39.81	43.40	2.70	441738.21	655260.51	N 32 12 49.96 W 103 57 53.89	
	8344.00	11.84	116.83	8338.57	-58.17	-48.22	60.12	0.76	441729.79	655277.23	N 32 12 49.88 W 103 57 53.69	
	8439.00	11.65	118.25	8431.58	-74.96	-57.16	77.27	0.36	441720.85	655294.37	N 32 12 49.79 W 103 57 53.50	
	8533.00	13.67	120.60	8523.29	-92.46	-67.31	95.19	2.22	441710.71	655312.29	N 32 12 49.69 W 103 57 53.29	
	8627.00	14.48	126.51	8614.47	-110.96	-79.96	114.20	1.75	441698.06	655331.30	N 32 12 49.56 W 103 57 53.07	
	8722.00	13.73	130.00	8706.61	-128.56	-94.27	132.38	1.19	441683.75	655349.48	N 32 12 49.42 W 103 57 52.86	
	8816.00	14.63	129.60	8797.74	-145.66	-109.01	150.08	0.96	441669.01	655367.17	N 32 12 49.27 W 103 57 52.65	
	8910.00	14.33	126.15	8888.76	-163.62	-123.44	168.62	0.97	441654.58	655385.71	N 32 12 49.13 W 103 57 52.43	
	9005.00	13.90	123.20	8980.75	-182.59	-136.93	188.13	0.83	441641.09	655405.23	N 32 12 49.00 W 103 57 52.21	
	9099.00	13.90	125.74	9071.85	-201.14	-150.02	207.22	1.01	441628.00	655424.31	N 32 12 48.87 W 103 57 51.99	
	9288.00	14.93	134.41	9254.92	-235.75	-180.32	243.04	1.26	441597.70	655460.13	N 32 12 48.57 W 103 57 51.57	
	9383.00	13.95	131.89	9346.92	-252.36	-196.53	260.31	1.23	441581.49	655477.40	N 32 12 48.40 W 103 57 51.37	
	9477.00	12.27	132.68	9438.47	-267.56	-210.87	276.09	1.80	441567.16	655493.18	N 32 12 48.26 W 103 57 51.19	
	9572.00	10.62	139.92	9531.58	-280.08	-224.41	289.15	2.30	441553.62	655506.24	N 32 12 48.13 W 103 57 51.04	
	9666.00	9.24	156.48	9624.19	-288.13	-237.96	297.74	3.36	441540.07	655514.83	N 32 12 47.99 W 103 57 50.94	
	9760.00	10.13	166.01	9716.85	-292.55	-252.91	302.75	1.95	441525.12	655519.84	N 32 12 47.84 W 103 57 50.88	
	9855.00	11.10	173.67	9810.25	-294.89	-270.10	305.78	1.80	441507.93	655522.86	N 32 12 47.69 W 103 57 50.84	
	9950.00	11.14	183.22	9903.46	-294.67	-288.36	306.27	1.94	441489.68	655523.36	N 32 12 47.47 W 103 57 50.84	
	10044.00	10.78	194.49	9995.75	-291.27	-305.94	303.56	2.31	441472.10	655520.65	N 32 12 47.32 W 103 57 50.87	
Wolfcamp Intersection	10065.12	10.77	198.34	10016.50	-290.07	-309.74	302.51	1.63	441468.29	655519.60	N 32 12 47.28 W 103 57 50.88	
	10139.00	10.80	202.79	10089.08	-284.94	-322.74	297.89	1.63	441455.29	655514.98	N 32 12 47.15 W 103 57 50.94	
	10233.00	11.44	209.77	10181.32	-276.26	-338.96	289.85	1.58	441439.08	655506.94	N 32 12 46.99 W 103 57 51.03	
KOP Actual	10328.00	10.89	215.91	10274.52	-265.72	-354.40	279.91	1.38	441423.63	655497.00	N 32 12 46.84 W 103 57 51.15	
Tie-In	10415.00	10.96	220.48	10359.95	-255.03	-367.35	269.72	1.00	441410.69	655486.81	N 32 12 46.71 W 103 57 51.27	
	10485.00	12.15	231.07	10428.54	-244.60	-377.04	259.67	3.47	441401.00	655476.76	N 32 12 46.62 W 103 57 51.38	
	10522.00	12.71	236.62	10464.67	-237.99	-381.73	253.24	3.56	441396.31	655470.33	N 32 12 46.57 W 103 57 51.46	
	10617.00	24.18	244.49	10554.65	-211.08	-395.91	225.86	12.33	441382.13	655443.95	N 32 12 46.43 W 103 57 51.77	
	10712.00	31.27	263.89	10638.86	-168.46	-406.95	184.65	12.00	441371.10	655401.74	N 32 12 46.32 W 103 57 52.26	
	10807.00	39.15	277.39	10716.54	-114.13	-405.71	130.22	11.62	441372.33	655347.32	N 32 12 46.34 W 103 57 52.89	
	10901.00	46.78	280.75	10785.28	-51.40	-395.49	67.04	8.47	441362.55	655284.15	N 32 12 46.44 W 103 57 53.63	
	10996.00	54.99	278.90	10845.17	20.62	-382.99	5.53	8.77	441395.05	655211.58	N 32 12 46.57 W 103 57 54.47	
	11091.00	62.95	273.96	10894.12	101.01	-374.03	-86.33	9.49	441404.01	655130.78	N 32 12 46.66 W 103 57 55.41	
	11186.00	72.29	270.10	10930.26	188.50	-371.02	-174.01	10.52	441407.02	655043.11	N 32 12 46.69 W 103 57 56.43	
	11281.00	83.91	267.02	10949.83	281.28	-373.41	-266.77	12.63	441404.63	654950.37	N 32 12 46.67 W 103 57 57.51	
Exit Target Box 1	11370.00	92.12	268.00	10952.91	370.15	-377.26	-355.55	9.29	441400.78	654861.99	N 32 12 46.64 W 103 57 58.55	
	11375.00	92.58	268.06	10952.70	375.14	-377.44	-360.54	9.29	441400.80	654856.59	N 32 12 46.64 W 103 57 58.60	
	11509.00	90.88	266.42	10948.66	509.07	-383.89	-494.32	1.76	441394.15	654722.83	N 32 12 46.58 W 103 58 0.16	
	11699.00	92.39	268.07	10943.23	698.97	-393.01	-684.01	1.18	441385.03	654533.15	N 32 12 46.49 W 103 58 2.37	
	11793.00	92.87	270.05	10938.92	792.84	-394.56	-777.89	2.17	441383.49	654439.28	N 32 12 46.48 W 103 58 3.46	
	11888.00	90.16	270.09	10936.41	887.72	-394.44	-872.85	2.85	441383.60	654344.33	N 32 12 46.48 W 103 58 4.57	
	12077.00	92.01	273.67	10932.83	1076.15	-388.24	-1061.68	2.13	441389.90	654155.52	N 32 12 46.55 W 103 58 6.76	
	12172.00	92.15	271.49	10929.38	1170.75	-383.97	-1156.51	2.30	441394.07	654060.69	N 32 12 46.60 W 103 58 7.87	
Enter Target Box	12352.00	93.85	272.78	10919.95	1349.96	-377.27	-1336.13	1.19	441400.77	653981.09	N 32 12 46.67 W 103 58 9.96	
	12360.00	93.93	272.84	10919.41	1357.91	-376.88	-1344.10	1.19	441401.16	653873.81	N 32 12 46.67 W 103 58 10.05	
	12550.00	90.04	272.00	10912.83	1547.13	-368.87	-1533.78	2.09	441409.17	653683.45	N 32 12 46.76 W 103 58 12.26	
	12644.00	93.59	271.79	10909.85	1640.82	-365.76	-1627.67	3.78	441412.28	653589.57	N 32 12 46.79 W 103 58 13.35	
	12834.00	89.94	270.72	10904.00	1830.34	-361.60	-1817.50	2.00	441416.44	653399.76	N 32 12 46.84 W 103 58 15.56	
	12928.00	89.70	270.59	10904.30	1924.21	-360.53	-1911.49	0.29	441417.51	653305.77	N 32 12 46.85 W 103 58 16.65	
	13118.00	92.48	271.86	10900.68	2113.81	-356.47	-2101.39	1.61	441421.57	653115.89	N 32 12 46.90 W 103 58 18.86	
	13306.00	90.80	270.76	10895.30	2301.36	-352.17	-2289.25	1.07	441425.87	652928.04	N 32 12 46.95 W 103 58 21.05	
	13401.00	93.21	271.28	10891.98	2396.13	-350.48	-2384.17	2.60	441427.55	652833.12	N 32 12 46.97 W 103 58 22.16	
	13495.00	89.56	269.00	10889.71	2490.00	-350.25	-2478.12	4.58	441427.78	652739.18	N 32 12 46.97 W 103 58 23.25	
	13590.00	91.31	270.39	10888.99	2584.94	-350.76	-2573.11	2.35	441427.28	652644.20	N 32 12 46.97 W 103 58 24.36	
	13779.00	86.12	269.65	10893.22	2773.68	-350.69	-2762.00	2.77	441427.34	652455.33	N 32 12 46.98 W 103 58 26.55	
	13874.00	90.66	270.96	10895.89	2868.52	-350.19	-2856.93	4.97	441427.85	652360.40	N 32 12 46.99 W 103 58 27.66	
	13968.00	90.90	271.22	10894.61	2962.35	-348.40	-2950.91	0.38	441429.64	652266.43	N 32 12 47.01 W 103 58 28.75	
	14063.00	88.74	269.92	10894.91	3057.22	-347.45	-3045.89	2.65	441430.58	652171.45	N 32 12 47.02 W 103 58 29.86	
	14157.00	89.04	270.04	10896.73	3151.13	-347.49	-3139.88	0.34	441430.55	652077.48	N 32 12 47.02 W 103 58 30.95	
	14346.00	90.66	274.18	10897.23	3339.54	-340.53	-3328.70	2.35	441437.51	651888.67	N 32 12 47.10 W 103 58 33.15	
	14440.00	86.05	272.43	10899.92	3433.03	-335.11	-3422.48	5.25	441442.92	651794.90	N 32 12 47.16 W 103 58 34.24	
	14629.00	90.32	270.26	10905.91	3621.50	-330.68	-3611.27	2.53	441447.35	651606.12	N 32 12 47.21 W 103 58 36.44	
	14819.00	89.80	268.43	10905.71	3811.42	-332.86	-3801.25	1.00	441445.18	651416.15	N 32 12 47.19 W 103 58 38.65	
	15008.00	91.83	266.99	10903.02	4000.39	-340.41	-3990.07	1.32	441437.63	651227.35	N 32 12 47.12 W 103 58 40.85	
	15197.00	88.94	275.27	10901.75	4188.87	-336.68	-4178.84	4.64	441441.36	651038.59	N 32 12 47.17 W 103 58 43.04	
	15292.00	90.25	268.52	10902.42	4283.56	-333.54	-4273.73	7.24	441444.50	650943.71	N 32 12 47.20 W 103 58 44.15	
	15386.00	90.92	269.19	10901.46	4377.63	-335.42	-4367.81	1.01	441442.62	650849.64	N 32 12 47.18 W 103 58 45.24	
	15480.00	91.47	263.83	10899.50	4471.46	-341.13	-4461.48	5.74	441436.90	650755.98	N 32 12 47.13 W 103 58 46.33	
	15575.00	93.16	265.41	10895.67	4566.23	-350.03	-4555.98	2.43	441428.00	650661.49	N 32 12 47.05 W 103 58 47.43	
	15764.00	91.30	268.10	10888.31	4755.04	-360.72	-4744.50	1.73	441417.32	650472.98	N 32 12 46.95 W 103 58 49.63	
	15954.00	91.96	271.87	10882.90	4944.78	-360.77	-4934.39	2.01	441417.27	650283.10	N 32 12 46.95 W 103 58 51.84	
	16048.00	91.54	272.72	10880.03	5038.44	-357.01	-5028.27	1.01	441421.03	650189.23	N 32 12 46.99 W 103 58 52.93	
	16238.00	91.47	270.03	10875.04	5227.97	-352.45	-5218.13	1.42	441425.59	649999.38	N 32 12 47.04 W 103 58 55.14	
	16333.00	90.99	268.47	10873.00	5322.91	-353.69	-5313.10	1.72	441424.34	649904.42	N	

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 ° ' ")
	20699.00	90.86	267.40	10846.30	9680.02	-390.44	-9672.14	0.95	441387.60	645545.72	N 32 12 46.81	W 103 59 46.98
	20793.00	91.13	266.66	10844.67	9773.99	-395.31	-9766.00	0.84	441382.73	645451.87	N 32 12 46.76	W 103 59 48.08
	20982.00	90.07	260.43	10842.69	9962.38	-416.55	-9953.70	3.34	441361.49	645264.19	N 32 12 46.56	W 103 59 50.26
Exit Target Box 2	21022.00	89.81	262.78	10842.73	10002.15	-422.39	-9993.27	5.91	441355.65	645224.62	N 32 12 46.50	W 103 59 50.72
	21076.00	89.45	265.95	10843.08	10056.05	-427.69	-10047.00	5.91	441350.35	645170.90	N 32 12 46.45	W 103 59 51.35
100' FWL	21096.00	89.42	266.66	10843.28	10076.04	-428.95	-10066.96	4.57	441349.10	645150.94	N 32 12 46.44	W 103 59 51.58
Final MWD	21127.00	89.38	268.28	10843.60	10107.04	-430.26	-10097.93	4.57	441347.78	645119.97	N 32 12 46.43	W 103 59 51.94
Proj to TD	21170.00	89.38	268.28	10844.07	10150.03	-431.55	-10140.90	0.00	441346.49	645077.00	N 32 12 46.42	W 103 59 52.44

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	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Whomping Willow CC 15_16 State Com 44H Gyro + MWD 0-21174ft MD
	1	26.500	26.500	Act Stns	30.000	30.000	NAL_NSG+MSHOT-Depth Only	Original Borehole / Whomping Willow CC 15_16 State Com 44H Gyro + MWD 0-21174ft MD
	1	26.500	415.000	Act Stns	30.000	30.000	NAL_NSG+MSHOT	Original Borehole / Whomping Willow CC 15_16 State Com 44H Gyro + MWD 0-21174ft MD
	1	415.000	10485.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	Original Borehole / Whomping Willow CC 15_16 State Com 44H ST01 / Oxy Whomping Willow CC 15_16 State Com 44H ST01 0 to
	1	10485.000	21170.000	Act Stns	30.000	30.000	NAL_MWD_IFR1+MS	

...ST01\Oxy Whomping Willow CC 15_16 State Com 44H ST01 0 to 21170' MD

Submit 1 Copy To Appropriate District
Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM
87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised July 18, 2013

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-015-45218
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☒ FEE ☐
2. Name of Operator OXY USA INC.		6. State Oil & Gas Lease No.
3. Address of Operator P.O. BOX 50250 MIDLAND, TX 79710		7. Lease Name or Unit Agreement Name Whomping Willow CC 15-16 State Com
4. Well Location Unit Letter I : 1365 feet from the SOUTH line and 420 feet from the EAST line Section 15 Township 24S Range 29E NMPM County EDDY		8. Well Number 44H
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 2943' GR		9. OGRID Number 16696
		10. Pool name or Wildcat Purple Sage; Wolfcamp

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☒	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☒	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Spud 14-3/4" hole 10/12/18, drill to 465' 10/12/18. RIH & set 10-3/4" 45.5# J-55 csg @ 455', pump 20BFW spacer then cmt w/ 600sx (138bbl) Class C w/ additives 14.8ppg 1.35 yield, full returns throughout job, circ 16sx (4bbl) cmt to surface, WOC. 10/13/18 RD & release rig.

NM OIL CONSERVATION
ARTESIA DISTRICT

OCT 29 2018

ENTERED
[Signature]

RECEIVED

Spud Date:

10/12/18

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE *[Signature]* TITLE Regulatory Specialist DATE 10/24/2018

Type or print name Jana Mendiola E-mail address: janalyn_mendiola@oxy.com PHONE: 432-685-5936

For State Use Only

APPROVED BY: *[Signature]* TITLE Business Ops Mgr A DATE 10-29-2018

Conditions of Approval (if any):

Submit 1 Copy To Appropriate District Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised July 18, 2013

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-015-45218
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☒ FEE ☐
2. Name of Operator OXY USA INC.		6. State Oil & Gas Lease No.
3. Address of Operator P.O. BOX 50250 MIDLAND, TX 79710		7. Lease Name or Unit Agreement Name Whomping Willow CC 15-16 State Com
4. Well Location Unit Letter <u>I</u> : 1365 feet from the <u>SOUTH</u> line and <u>420</u> feet from the <u>EAST</u> line Section <u>15</u> Township <u>24S</u> Range <u>29E</u> NMPM County <u>EDDY</u>		8. Well Number 44H
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 2943' GR		9. OGRID Number 16696
		10. Pool name or Wildcat Purple Sage; Wolfcamp

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐
CLOSED-LOOP SYSTEM ☐
OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☒
OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

12/14/18 RU BOP, test @ 250# low 5000# high, test 10-3/4" casing to 1500# for 30 min, good test. RIH & tag cmt @ 428', drill new formation to 496', perform FIT test to EMW=20ppg, 265psi, good test. 12/15/18 drill 9-7/8" hole to 10460', 12/20/18. RIH & set 7-5/8" 26.4# L-80 csg @ 10445', pump 50bbl tuned spacer then cmt w/ 905sx (536bbl) Class H w/ additives 9.5ppg 3.33 yield followed by 230sx (94bbl) Class H w/ additives 11.5ppg 2.3 yield, full returns throughout job, circ 51sx (30bbl) cmt to surface, WOC. Install packoff, test to 5000#, good test.

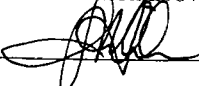
12/23/18 RU BOP, test @ 250# low 5000# high. Test 7-5/8" csg to 2400# for 30min, good test. RIH & tag cmt @ 10345', drill new formation to 10470', perform FIT test to EMW=15.5ppg, 1890psi, good test. 12/25/18 Drill 6-3/4" hole to 21174' M 10901' V 1/9/19. RIH & set 5-1/2" 23# P110 @ 21152', circ bottoms up. 1/13/19 POOH & start laying down csg, total of 11502' laid down, noticed Airlock sub came out short one foot with 9650' of casing left in hole, fish stuck @ ~11500'. 1/14/19 - 1/23/19 RIH w/ fishing tools & attempt to fish parted csg, unsuccessful, decision made to plugback & sidetrack. 1/23/19 RIH w/ 2-7/8" tbg, pump cmt plug w/ 1120sx (279bbl) Class H cmt 13.5ppg 1.4 yield from 21174-11500', followed by 155sx (30bbl) Class H cmt 16.4ppg 1.08 yield from 11500-10900', followed by 200sx (34bbl) Class H cmt 17.5ppg 0.95 yield from 10900-10200', POOH, WOC. 1/24/19 ND BOP, Install wellhead cap & release rig.

2/15/19 Skid rig from Refried Beans CC 15-16 State Com 14H to Whomping Willow CC 15-16 State Com 44H. RU BOP, test @ 250# low 4100# high. 2/17/19 RIH & tag cmt @ 10016', drill cement from 10016-10516', kick off sidetrack @ 10517', continue to drill 6-3/4" hole to 21170' M 10844' V 3/6/19. RIH & set 5-1/2" 23# P110 csg @ 21068'. 3/12/19 Pump 168bbl spacer then cmt w/ 850sx (166bbl) Class H w/ additives @ 13.5ppg 1.44 yield, cement unit reached 9800# after only 80bbl into displacement leaving all the cmt inside 5-1/2" csg, plan forward is to drill out cmt & then perform remedial cmt job on 5-1/2" csg. 3/13/19 - 3/19/19 Drill out cmt from 3849-21005', unable to clean out past 21005', circ hole. While laying down & POOH w/ drill pipe, got stuck @ 4765'. 3/21/19 - 3/24/19 Fish stuck pipe & successfully POOH w/ fish, circ bottoms up to clean. 3/28/19 Pump 30bbl tune spacer then cmt 5-1/2" csg w/ 650sx (166bbl) Class H w/ additives @ 13.2ppg 1.44 yield. Planned displacement was 445bbl of 10# brine however, cement unit pumped 401.5bbl of displacement before reaching max pressure (9800psi), leaving 2004 ft of cmt inside 5-1/2" csg (est. TOC @ 19001'). Floats held & no csg pressure was observed in 7-5/8" x 5-1/2" annulus after cmt was in place. 3/29/19 - 3/31/19 RIH & drill out cmt in 5-1/2" csg from 18610-20952', unable to clean out further due to reaching max torque & buckling limit of the 2-7/8" drillstring, POOH. TOC of 5-1/2" csg @ 8150' CBL. 4/2/19 RUWL RIH & set RBP @ 3020', test to 1000# for 30 min, good test. ND BOP, Install wellhead cap, RD Rel Rig 4/3/19.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE  TITLE Regulatory Specialist DATE 5/31/2019

Type or print name Jana Mendiola E-mail address: janalyn_mendiola@oxy.com PHONE: 432-685-5936

For State Use Only

APPROVED BY: TITLE DATE

Conditions of Approval (if any):

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Cabinet Secretary

Heather Riley, Division Director
Oil Conservation Division



November 6, 2018

Ms. Sarah Chapman
Sarah_Chapman@oxy.com

NON-STANDARD LOCATION

Administrative Order NSL-7770

Oxy USA Inc. [OGRID 16696]
Whomping Willow CC 15 16 State Com Well No. 044H
API No. 30-015-45218

Proposed Location

	<u>Footages</u>	<u>Unit/Lot</u>	<u>Sec.</u>	<u>Twsp</u>	<u>Range</u>	<u>County</u>
Surface	1365 FSL & 420 FEL	I	15	24S	29E	Eddy
First Take Point	940 FSL & 100 FEL	P	15	24S	29E	Eddy
Last Take Point	940 FSL & 100 FWL	M	16	24S	29E	Eddy
Terminus	940 FSL & 20 FWL	M	16	24S	29E	Eddy

Proposed Gas Units

<u>Description</u>	<u>Acres</u>	<u>Pool</u>	<u>Pool Code</u>
S2 of Section 15	640	Purple Sage; Wolfcamp (GAS)	98220
S2 of Section 16			

Reference is made to your application received on October 9, 2018.

You have requested to recomplete this horizontal well as a gas well described above in the referenced pool or formation. This well is governed by special rules for the Purple Sage; Wolfcamp (Gas) Pool of and provides for 320-acre units, with wells located at least 330 feet from a unit outer boundary.

This well's completed interval is as close as 100 feet to the eastern and western edge of the horizontal spacing unit. Encroachment will impact the following tracts.

Section 14, T24S R29E encroachment to the SW4
Section 17, T24S R29E encroachment to the SE4

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The Division understands you have given notice of this application to all operators or owners who are "affected persons," as defined in Paragraph (8) Subsection A of 19.15.2.7 NMAC, in all adjoining units towards which the proposed location encroaches

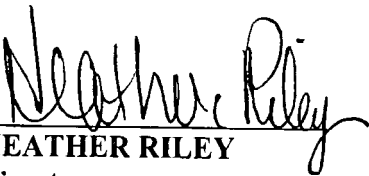
Division understands you seek this unorthodox location as an efficient spacing of horizontal wells and thereby preventing waste within the Wolfcamp formation underlying the S2 of Section 15 and S2 of Section 16.

Your application has been filed under Subsection 6 of Paragraph of Section (C) of 19.15.16.15 NMAC, 19.15.15.13 NMAC and Paragraph (2) of Subsection A of 19.15.4.12 NMAC.

Per Subsection B of 19.15.15.13 NMAC, Division approves this unorthodox location.

The above approvals are subject to your following all other applicable Division rules.

Jurisdiction of this case is retained for the entry of further orders as Division deems necessary.


HEATHER RILEY
Director

HR/lrl

cc: Oil Conservation Division – Artesia District Office
State Land Office – Oil, Gas, and Minerals Division
Bureau of Land Management – Carlsbad Field Office