

OXY

Eddy County, New Mexico

Harroun 9 Fee 3H

Harroun 9 Fee 3H

Original Wellbore

Design: Original Wellbore

Standard Survey Report

15 November, 2013

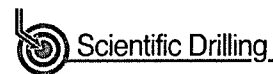


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Survey Report



Company:	OXY	Local Co-ordinate Reference:	Well: Harroun 9 Fee 3H
Project:	Eddy County, New Mexico	TVD Reference:	KB @ 2957.2usft (H&P 474)
Site:	Harroun 9 Fee 3H	MD Reference:	KB @ 2957.2usft (H&P 474)
Well:	Harroun 9 Fee 3H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	CompassC

Project:	Eddy County, New Mexico, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Harroun 9 Fee 3H		
Site Position:		Northing:	445,864.00 usft
From:	Map	Easting:	608,577.10 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 13' 31.114 N
		Longitude:	103° 58' 55.986 W
		Grid Convergence:	0.19 °

Well	Harroun 9 Fee 3H					
Well Position	+N/-S	0.0 usft	Northing:	445,864.00 usft	Latitude:	32° 13' 31.114 N
	+E/-W	0.0 usft	Easting:	608,577.10 usft	Longitude:	103° 58' 55.986 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	2,933.2 usft

Wellbore	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/28/2013	7.48	60.06	48,339

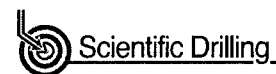
Design:	Original Wellbore				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.0	0.0	0.0	272.28	

Survey Program		Date 11/15/2013		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
94.0	552.0	MS Survey (Original Wellbore)	Generic Gyro	Generic Gyro
552.0	13,196.0	SDI MWD (Original Wellbore)	SDI MWD	SDI MWD - Standard ver 1.0.1

Survey	Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
	Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
	(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	94.0	0.16	268.12	94.0	0.0	-0.1	0.1	0.17	0.17	0.00
	179.0	0.55	21.96	179.0	0.4	-0.1	0.1	0.74	0.46	133.93
	263.0	0.64	11.59	263.0	1.2	0.1	-0.1	0.17	0.11	-12.35
	348.0	0.55	12.04	348.0	2.1	0.3	-0.2	0.11	-0.11	0.53
	552.0	0.84	33.28	552.0	4.3	1.4	-1.2	0.19	0.14	10.41
	596.0	0.88	49.24	596.0	4.8	1.8	-1.6	0.55	0.09	36.27
	688.0	0.88	46.17	688.0	5.7	2.8	-2.6	0.05	0.00	-3.34
	779.0	0.97	49.77	778.9	6.7	3.9	-3.7	0.12	0.10	3.96
	870.0	0.97	43.26	869.9	7.8	5.0	-4.7	0.12	0.00	-7.15



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Well:	Harroun 9 Fee 3H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	CompassC

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
963.0	0.88	42.83	962.9	8.9	6.1	-5.7	0.10	-0.10	-0.46
1,057.0	0.70	36.06	1,056.9	9.8	6.9	-6.5	0.22	-0.19	-7.20
1,152.0	0.62	30.08	1,151.9	10.8	7.5	-7.1	0.11	-0.08	-6.29
1,246.0	0.44	24.46	1,245.9	11.5	7.9	-7.4	0.20	-0.19	-5.98
1,340.0	0.53	24.37	1,339.9	12.3	8.2	-7.7	0.10	0.10	-0.10
1,435.0	0.44	17.25	1,434.9	13.0	8.5	-8.0	0.11	-0.09	-7.49
1,529.0	0.09	63.13	1,528.9	13.4	8.7	-8.1	0.41	-0.37	48.81
1,624.0	0.26	156.20	1,623.9	13.2	8.8	-8.3	0.29	0.18	97.97
1,718.0	0.44	123.86	1,717.9	12.8	9.2	-8.7	0.28	0.19	-34.40
1,812.0	0.62	104.96	1,811.9	12.5	10.0	-9.5	0.26	0.19	-20.11
1,906.0	0.62	114.10	1,905.9	12.1	11.0	-10.5	0.11	0.00	9.72
2,000.0	0.62	95.30	1,999.9	11.9	11.9	-11.5	0.22	0.00	-20.00
2,094.0	0.62	68.75	2,093.9	12.0	12.9	-12.4	0.30	0.00	-28.24
2,189.0	0.97	73.76	2,188.9	12.4	14.2	-13.7	0.38	0.37	5.27
2,283.0	1.85	92.31	2,282.8	12.6	16.5	-15.9	1.04	0.94	19.73
2,377.0	2.37	98.90	2,376.8	12.2	19.9	-19.4	0.61	0.55	7.01
2,471.0	1.49	93.98	2,470.7	11.9	23.0	-22.5	0.95	-0.94	-5.23
2,566.0	0.97	80.35	2,565.7	11.9	25.1	-24.6	0.62	-0.55	-14.35
2,660.0	1.46	115.63	2,659.7	11.5	26.9	-26.4	0.93	0.52	37.53
2,755.0	1.58	122.81	2,754.6	10.3	29.1	-28.7	0.24	0.13	7.56
2,849.0	1.32	122.89	2,848.6	9.0	31.1	-30.7	0.28	-0.28	0.09
2,943.0	1.32	125.71	2,942.6	7.8	32.9	-32.6	0.07	0.00	3.00
3,033.0	1.93	95.74	3,032.6	7.0	35.2	-34.9	1.14	0.68	-33.30
3,127.0	5.45	66.82	3,126.3	8.6	40.9	-40.6	4.12	3.74	-30.77
3,222.0	7.83	65.85	3,220.7	13.0	51.0	-50.4	2.51	2.51	-1.02
3,316.0	7.74	65.76	3,313.8	18.3	62.6	-61.8	0.10	-0.10	-0.10
3,411.0	7.39	65.68	3,408.0	23.4	74.0	-73.0	0.37	-0.37	-0.08
3,505.0	7.12	65.59	3,501.3	28.3	84.8	-83.6	0.29	-0.29	-0.10
3,599.0	6.95	64.09	3,594.5	33.2	95.2	-93.8	0.27	-0.18	-1.60
3,693.0	7.12	65.41	3,687.8	38.1	105.6	-104.0	0.25	0.18	1.40
3,787.0	6.77	64.97	3,781.2	42.9	116.0	-114.2	0.38	-0.37	-0.47
3,882.0	6.60	64.18	3,875.5	47.6	125.9	-124.0	0.20	-0.18	-0.83
3,976.0	6.51	63.92	3,968.9	52.3	135.6	-133.4	0.10	-0.10	-0.28
4,070.0	6.42	63.57	4,062.3	57.0	145.1	-142.7	0.10	-0.10	-0.37
4,165.0	6.24	61.90	4,156.7	61.8	154.4	-151.8	0.27	-0.19	-1.76
4,259.0	6.16	60.67	4,250.2	66.7	163.3	-160.5	0.16	-0.09	-1.31
4,353.0	5.36	72.62	4,343.7	70.5	171.9	-169.0	1.53	-0.85	12.71
4,448.0	5.10	72.88	4,438.3	73.0	180.2	-177.1	0.27	-0.27	0.27
4,542.0	4.92	72.18	4,531.9	75.5	188.0	-184.8	0.20	-0.19	-0.74
4,636.0	4.84	72.18	4,625.6	77.9	195.6	-192.3	0.09	-0.09	0.00
4,731.0	4.75	69.98	4,720.3	80.5	203.1	-199.8	0.22	-0.09	-2.32
4,825.0	4.57	68.49	4,814.0	83.2	210.3	-206.8	0.23	-0.19	-1.59
4,919.0	4.66	71.04	4,907.6	85.8	217.4	-213.8	0.24	0.10	2.71



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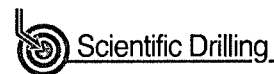


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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,013.0	4.48	71.04	5,001.4	88.3	224.4	-220.7	0.19	-0.19	0.00
5,108.0	4.40	72.09	5,096.1	90.6	231.4	-227.6	0.12	-0.08	1.11
5,202.0	4.22	74.55	5,189.8	92.6	238.2	-234.3	0.27	-0.19	2.62
5,297.0	3.96	72.00	5,284.6	94.6	244.7	-240.7	0.33	-0.27	-2.68
5,391.0	3.61	72.88	5,378.4	96.4	250.6	-246.5	0.38	-0.37	0.94
5,485.0	3.25	74.55	5,472.2	98.0	256.0	-251.9	0.40	-0.38	1.78
5,580.0	3.96	72.27	5,567.0	99.7	261.7	-257.5	0.76	0.75	-2.40
5,674.0	4.40	67.08	5,660.7	102.1	268.1	-263.8	0.62	0.47	-5.52
5,769.0	5.19	64.89	5,755.4	105.4	275.4	-270.9	0.85	0.83	-2.31
5,863.0	5.54	66.12	5,849.0	109.0	283.4	-278.8	0.39	0.37	1.31
5,957.0	6.95	69.28	5,942.4	112.9	292.8	-288.1	1.54	1.50	3.36
6,051.0	7.12	69.46	6,035.7	116.9	303.6	-298.7	0.18	0.18	0.19
6,146.0	6.77	69.81	6,130.0	120.9	314.4	-309.3	0.37	-0.37	0.37
6,240.0	6.42	69.72	6,223.4	124.6	324.5	-319.3	0.37	-0.37	-0.10
6,334.0	6.42	69.46	6,316.8	128.3	334.3	-329.0	0.03	0.00	-0.28
6,428.0	5.80	71.30	6,410.3	131.7	343.8	-338.3	0.69	-0.66	1.96
6,522.0	6.77	65.24	6,503.7	135.5	353.3	-347.6	1.25	1.03	-6.45
6,617.0	6.60	66.12	6,598.1	140.1	363.4	-357.5	0.21	-0.18	0.93
6,711.0	6.68	74.82	6,691.5	143.7	373.6	-367.6	1.07	0.09	9.26
6,805.0	5.98	68.93	6,784.9	146.9	383.4	-377.3	1.01	-0.74	-6.27
6,900.0	5.63	69.90	6,879.4	150.3	392.4	-386.1	0.38	-0.37	1.02
6,994.0	4.40	61.72	6,973.0	153.6	399.9	-393.5	1.51	-1.31	-8.70
7,088.0	4.84	54.43	7,066.7	157.6	406.3	-399.7	0.78	0.47	-7.76
7,182.0	4.04	46.87	7,160.4	162.1	412.0	-405.2	1.05	-0.85	-8.04
7,277.0	3.87	38.78	7,255.2	166.9	416.4	-409.5	0.61	-0.18	-8.52
7,371.0	3.69	60.75	7,349.0	170.9	421.1	-413.9	1.54	-0.19	23.37
7,466.0	2.99	75.17	7,443.9	173.0	426.1	-418.9	1.15	-0.74	15.18
7,560.0	2.90	81.94	7,537.7	174.0	430.8	-423.6	0.38	-0.10	7.20
7,655.0	2.90	65.06	7,632.6	175.3	435.4	-428.1	0.90	0.00	-17.77
7,749.0	2.99	76.14	7,726.5	176.9	439.9	-432.6	0.61	0.10	11.79
7,851.0	1.49	105.67	7,828.4	177.2	443.8	-436.4	1.81	-1.47	28.95
7,882.0	1.23	108.22	7,859.4	177.0	444.5	-437.1	0.86	-0.84	8.23
7,914.0	0.88	255.78	7,891.4	176.8	444.6	-437.2	6.34	-1.09	461.13
7,945.0	2.90	268.53	7,922.4	176.7	443.6	-436.2	6.62	6.52	41.13
7,977.0	5.08	278.86	7,954.3	176.9	441.4	-434.0	7.15	6.81	32.28
8,008.0	8.35	285.49	7,985.1	177.7	437.8	-430.4	10.82	10.55	21.39
8,040.0	9.76	292.70	8,016.7	179.4	433.1	-425.6	5.65	4.41	22.53
8,071.0	12.57	296.92	8,047.1	182.0	427.7	-420.1	9.43	9.06	13.61
8,102.0	15.84	295.16	8,077.1	185.3	420.8	-413.1	10.64	10.55	-5.68
8,134.0	18.29	290.24	8,107.7	188.9	412.2	-404.3	8.88	7.66	-15.38
8,165.0	20.49	282.85	8,137.0	191.8	402.3	-394.4	10.62	7.10	-23.84
8,196.0	22.69	279.95	8,165.8	194.0	391.1	-383.1	7.89	7.10	-9.35
8,228.0	23.83	279.25	8,195.2	196.1	378.7	-370.6	3.67	3.56	-2.19



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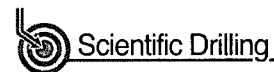
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8,259.0	25.23	280.07	8,223.4	198.3	366.0	-357.8	4.65	4.52	2.65
8,291.0	28.17	276.67	8,252.0	200.3	351.8	-343.5	10.35	9.19	-10.63
8,322.0	30.34	273.80	8,279.0	201.7	336.7	-328.4	8.33	7.00	-9.26
8,354.0	31.74	272.92	8,306.5	202.7	320.2	-311.9	4.60	4.38	-2.75
8,385.0	33.68	272.92	8,332.5	203.5	303.5	-295.1	6.26	6.26	0.00
8,417.0	35.96	273.63	8,358.8	204.6	285.2	-276.9	7.24	7.13	2.22
8,448.0	38.87	274.07	8,383.4	205.8	266.4	-258.0	9.43	9.39	1.42
8,480.0	40.89	274.15	8,408.0	207.3	246.0	-237.5	6.31	6.31	0.25
8,511.0	42.74	273.80	8,431.1	208.7	225.4	-216.9	6.02	5.97	-1.13
8,519.3	43.54	273.49	8,437.1	209.1	219.7	-211.2	9.91	9.58	-3.71
330 HL Entry 8519.3 MD									
8,543.0	45.81	272.66	8,454.0	210.0	203.1	-194.5	9.91	9.60	-3.51
8,574.0	49.06	271.17	8,475.0	210.8	180.2	-171.7	11.06	10.48	-4.81
8,606.0	49.68	271.34	8,495.8	211.3	156.0	-147.4	1.98	1.94	0.53
8,637.0	50.91	270.64	8,515.6	211.7	132.1	-123.6	4.33	3.97	-2.26
8,668.0	54.61	270.99	8,534.4	212.0	107.4	-98.9	11.97	11.94	1.13
8,700.0	56.54	270.20	8,552.5	212.3	81.1	-72.5	6.37	6.03	-2.47
8,731.0	58.12	268.09	8,569.2	211.9	55.0	-46.5	7.67	5.10	-6.81
8,763.0	61.03	269.58	8,585.4	211.4	27.4	-18.9	9.94	9.09	4.66
8,794.0	64.02	269.50	8,599.7	211.1	-0.1	8.5	9.65	9.65	-0.26
8,826.0	66.74	270.64	8,613.0	211.2	-29.2	37.6	9.10	8.50	3.56
8,857.0	69.56	270.37	8,624.6	211.4	-58.0	66.3	9.13	9.10	-0.87
8,889.0	73.60	269.93	8,634.7	211.5	-88.3	96.7	12.69	12.63	-1.38
8,920.0	77.03	270.02	8,642.5	211.5	-118.3	126.6	11.07	11.06	0.29
8,951.0	80.20	269.93	8,648.6	211.5	-148.7	157.0	10.23	10.23	-0.29
9,005.0	84.86	267.12	8,655.7	210.1	-202.2	210.4	10.05	8.63	-5.20
9,036.0	86.35	267.03	8,658.0	208.5	-233.1	241.2	4.82	4.81	-0.29
9,068.0	85.82	267.39	8,660.2	207.0	-265.0	273.0	2.00	-1.66	1.13
9,100.0	84.94	267.56	8,662.8	205.6	-296.8	304.8	2.80	-2.75	0.53
9,131.0	84.82	268.05	8,665.6	204.4	-327.7	335.5	1.62	-0.39	1.58
9,162.0	85.38	268.35	8,668.2	203.4	-358.5	366.4	2.05	1.81	0.97
9,194.0	85.47	268.62	8,670.8	202.6	-390.4	398.2	0.89	0.28	0.84
9,225.0	85.82	268.44	8,673.1	201.8	-421.3	429.0	1.27	1.13	-0.58
9,257.0	85.74	268.44	8,675.5	200.9	-453.2	460.9	0.25	-0.25	0.00
9,288.0	86.97	268.44	8,677.4	200.1	-484.2	491.7	3.97	3.97	0.00
9,320.0	87.67	268.53	8,678.9	199.2	-516.1	523.6	2.21	2.19	0.28
9,351.0	88.20	268.62	8,680.1	198.5	-547.1	554.5	1.73	1.71	0.29
9,383.0	88.20	268.53	8,681.1	197.7	-579.1	586.5	0.28	0.00	-0.28
9,414.0	88.37	268.70	8,682.0	196.9	-610.0	617.4	0.78	0.55	0.55
9,446.0	88.55	268.97	8,682.9	196.3	-642.0	649.3	1.01	0.56	0.84
9,477.0	88.29	269.41	8,683.7	195.8	-673.0	680.3	1.65	-0.84	1.42
9,508.0	88.37	269.06	8,684.6	195.4	-704.0	711.2	1.16	0.26	-1.13
9,540.0	89.16	268.70	8,685.3	194.8	-736.0	743.1	2.71	2.47	-1.13
9,571.0	90.92	269.32	8,685.3	194.2	-767.0	774.1	6.02	5.68	2.00



Scientific Drilling

Survey Report



Company:	OXY	Local Co-ordinate Reference:	Well: Harroun 9 Fee 3H
Project:	Eddy County, New Mexico	TVD Reference:	KB @ 2957.2usft (H&P/474)
Site:	Harroun 9 Fee 3H	MD Reference:	KB @ 2957.2usft (H&P/474)
Well:	Harroun 9 Fee 3H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	CompassC

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,603.0	91.54	269.23	8,684.6	193.8	-799.0	806.0	1.96	1.94	-0.28
9,634.0	91.80	269.06	8,683.7	193.4	-829.9	837.0	1.00	0.84	-0.55
9,728.0	91.98	270.73	8,680.6	193.2	-923.9	930.8	1.79	0.19	1.78
9,823.0	90.66	270.73	8,678.4	194.4	-1,018.8	1,025.8	1.39	-1.39	0.00
9,917.0	90.22	269.76	8,677.7	194.8	-1,112.8	1,119.7	1.13	-0.47	-1.03
10,011.0	89.69	266.59	8,677.8	191.8	-1,206.8	1,213.5	3.42	-0.56	-3.37
10,105.0	90.66	268.18	8,677.5	187.5	-1,300.7	1,307.1	1.98	1.03	1.69
10,199.0	91.19	268.70	8,675.9	185.0	-1,394.6	1,400.9	0.79	0.56	0.55
10,294.0	91.54	268.53	8,673.7	182.7	-1,489.6	1,495.7	0.41	0.37	-0.18
10,388.0	91.98	268.09	8,670.8	179.9	-1,583.5	1,589.4	0.66	0.47	-0.47
10,482.0	88.99	267.83	8,670.0	176.6	-1,677.4	1,683.1	3.19	-3.18	-0.28
10,577.0	89.78	269.06	8,671.0	174.0	-1,772.4	1,777.9	1.54	0.83	1.29
10,671.0	90.13	269.67	8,671.1	172.9	-1,866.4	1,871.8	0.75	0.37	0.65
10,765.0	90.13	268.97	8,670.9	171.8	-1,960.4	1,965.6	0.74	0.00	-0.74
10,859.0	90.31	271.25	8,670.5	172.0	-2,054.4	2,059.6	2.43	0.19	2.43
10,953.0	90.22	271.60	8,670.1	174.4	-2,148.3	2,153.6	0.38	-0.10	0.37
11,048.0	90.92	272.57	8,669.1	177.8	-2,243.3	2,248.6	1.26	0.74	1.02
11,142.0	91.36	272.66	8,667.3	182.1	-2,337.1	2,342.5	0.48	0.47	0.10
11,237.0	91.54	272.57	8,664.9	186.4	-2,432.0	2,437.5	0.21	0.19	-0.09
11,331.0	91.45	272.13	8,662.4	190.3	-2,525.9	2,531.5	0.48	-0.10	-0.47
11,425.0	91.45	271.34	8,660.0	193.1	-2,619.8	2,625.4	0.84	0.00	-0.84
11,519.0	91.36	270.99	8,657.7	195.0	-2,713.8	2,719.4	0.38	-0.10	-0.37
11,614.0	88.72	270.11	8,657.7	195.9	-2,808.8	2,814.3	2.93	-2.78	-0.93
11,708.0	89.43	269.06	8,659.2	195.3	-2,902.7	2,908.2	1.35	0.76	-1.12
11,803.0	89.52	268.70	8,660.1	193.4	-2,997.7	3,003.0	0.39	0.09	-0.38
11,897.0	89.87	268.88	8,660.6	191.4	-3,091.7	3,096.9	0.42	0.37	0.19
11,991.0	90.22	268.79	8,660.5	189.5	-3,185.7	3,190.7	0.38	0.37	-0.10
12,086.0	90.22	268.26	8,660.1	187.1	-3,280.6	3,285.5	0.56	0.00	-0.56
12,180.0	90.57	268.62	8,659.5	184.5	-3,374.6	3,379.3	0.53	0.37	0.38
12,274.0	90.66	268.35	8,658.5	182.0	-3,468.6	3,473.1	0.30	0.10	-0.29
12,368.0	91.19	268.70	8,656.9	179.6	-3,562.5	3,566.9	0.68	0.56	0.37
12,463.0	91.19	268.09	8,655.0	176.9	-3,657.5	3,661.6	0.64	0.00	-0.64
12,557.0	90.92	266.95	8,653.2	172.9	-3,751.4	3,755.3	1.25	-0.29	-1.21
12,652.0	90.66	267.21	8,651.9	168.0	-3,846.2	3,849.9	0.39	-0.27	0.27
12,746.0	90.57	266.68	8,650.9	163.0	-3,940.1	3,943.5	0.57	-0.10	-0.56
12,840.0	90.66	267.91	8,649.9	158.6	-4,034.0	4,037.1	1.31	0.10	1.31
12,934.0	90.57	267.39	8,648.9	154.7	-4,127.9	4,130.8	0.56	-0.10	-0.55
13,029.0	90.48	266.77	8,648.0	149.9	-4,222.8	4,225.4	0.66	-0.09	-0.65
13,123.0	91.01	267.21	8,646.8	145.0	-4,316.6	4,319.0	0.73	0.56	0.47
13,146.0	91.28	267.74	8,646.3	144.0	-4,339.6	4,341.9	2.59	1.17	2.30
SDJ/MWD									
13,196.0	91.28	267.74	8,645.2	142.0	-4,389.6	4,391.7	0.00	0.00	0.00
Bit Projection - H9F 3H BHL - 3H Revised BHL									



Company:	OXY	Local Co-ordinate Reference:	Well: Harroun 9 Fee: 3H
Project:	Eddy County, New Mexico	TVD Reference:	KB @ 2957.2usft (H&P 474)
Site:	Harroun 9 Fee: 3H	MD Reference:	KB @ 2957.2usft (H&P 474)
Well:	Harroun 9 Fee: 3H	North Reference:	Grid
Wellbore:	Original Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	Original Wellbore	Database:	CompassC

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,519.3	8,437.1	209.1	219.7	330 HL Entry 8519.3' MD
13,146.0	8,646.3	144.0	-4,339.6	SDI MWD
13,196.0	8,645.2	142.0	-4,389.6	Bit Projection

Checked By: _____ Approved By: _____ Date: _____

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6178
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-41488	Pool Code 96473	Pool Name Pierce Crossing Bone Spring East
Property Code 304841	Property Name HARROUN "9"	Well Number 3H
OGRID No. 16696	Operator Name OXY USA INC.	Elevation 2933.2'

Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	9	24 SOUTH	29 EAST, N.M.P.M.		200'	SOUTH	550'	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	9	24 SOUTH	29 EAST, N.M.P.M.		350' 342	SOUTH	350' 341	WEST	EDDY
Dedicated Acres 160	Joint or Infill N	Consolidation Code	Order No. Top Prod. Interval - 401 FSL 1003 FEL (P)						

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

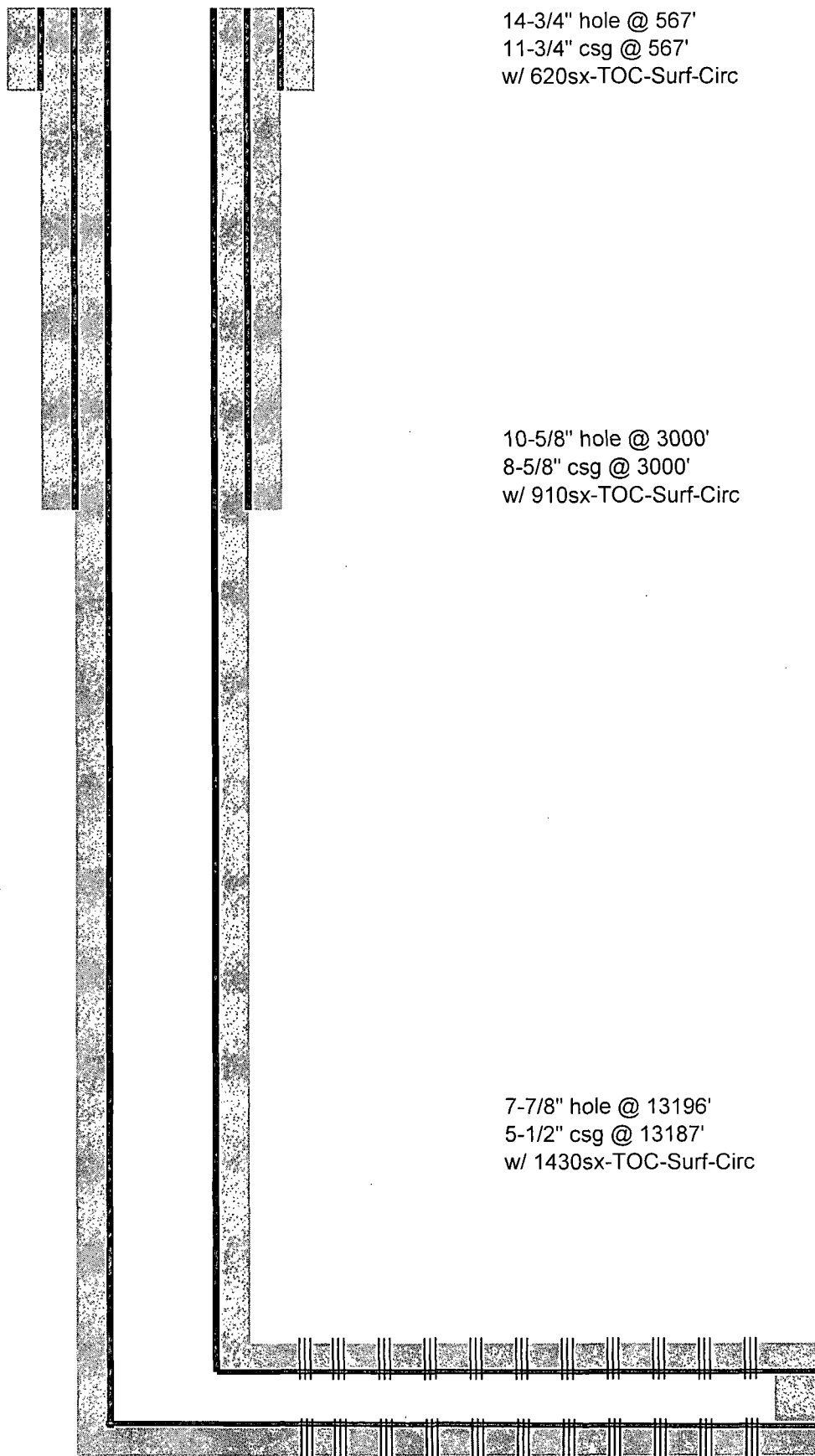
OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature <u>David Stewart</u> Date <u>1/28/14</u> Printed Name <u>David Stewart SR. Reg. Adv.</u> E-mail Address <u>david_stewart@oxy.com</u>	
SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey <u>May 21, 2013</u> Signature and Seal of Professional Surveyor <u>Terry J. Asel</u> <u>6/25/2013</u> Certificate Number <u>15079</u>	

BOTTOM HOLE LOCATION
NEW MEXICO EAST
NAD 1927
Y=445988.9
X=604185.3
LAT.: N 32.2256914'
LONG.: W 103.9964189'

PENETRATION POINT
NEW MEXICO EAST
NAD 1927
Y=446062.1
X=608532.6
LAT.: N 32.2258546'
LONG.: W 103.9823601'

SURFACE LOCATION
NEW MEXICO EAST
NAD 1927
Y=445864.0
X=608577.1
LAT.: N 32.2253095'
LONG.: W 103.9822182'

OXY USA Inc.
Harroun 9 #3H
API No. 30-015-41488



14-3/4" hole @ 567'
11-3/4" csg @ 567'
w/ 620sx-TOC-Surf-Circ

10-5/8" hole @ 3000'
8-5/8" csg @ 3000'
w/ 910sx-TOC-Surf-Circ

7-7/8" hole @ 13196'
5-1/2" csg @ 13187'
w/ 1430sx-TOC-Surf-Circ

Perfs @ 9262-13013'

TD - 13196'M 8645'V
PBSD - 13112'M 8647'V