



EOG Resources, Inc.

Eddy County, NM

Dee State Com

1H

ST1

30-015-44558

NM OIL CONSERVATION
ARTESIA DISTRICT

MAY 22 2018

RECEIVED

Design: ST1 Surveys

Standard Survey Report

07 February, 2018



NABORS



Nabors Corporate Services
Survey Report



Company: EOG Resources, Inc.
Project: Eddy County, NM
Site: Dee State Com
Well: 1H
Wellbore: ST1
Design: ST1 Surveys

Local Co-ordinate Reference: Well 1H
TVD Reference: RT=12.7' (Precision 822) @ 3842.71ft (PDC 822)
MD Reference: RT=12.7' (Precision 822) @ 3842.71ft (PDC 822)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: RyanUSA_Compass

Project	Eddy County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Dee State Com		
Site Position:	Northling:	586,558.100 usft	Latitude: 32° 36' 44.32746 N
From: Map	Easting:	474,720.900 usft	Longitude: 104° 32' 58.86163 W
Position Uncertainty:	0.00 ft	Slot Radius: 13-3/16 "	Grid Convergence: -0.12 °

Well	1H		
Well Position	+N/-S	0.00 ft	Northling: 586,558.100 usft
	+E/-W	0.00 ft	Easting: 474,720.900 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
			Ground Level: 3,830.01 ft

Wellbore	ST1		
Magnetics	Model Name	Sample Date	Declination
	HDGM	1/26/2018	(°) 7.52
			Dip Angle (°) 60.37
			Field Strength (nT) 48,188.30000000

Design	ST1 Surveys		
Audit Notes:			
Version:	1.0	Phase: ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)
	0.00	0.00	0.00
			Direction (°) 94.84

Survey Program	Date 2/7/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name
199.00	7,273.00	Survey #1 - NDS MWD (ST1)	MWD+HRGM
			Description
			OWSG MWD + HRGM

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
199.00	0.75	159.15	198.99	-1.22	0.48	0.58	0.38	0.38	0.00
373.00	0.81	128.81	372.98	-3.02	1.85	2.10	0.25	0.03	-18.59
552.00	0.63	131.56	551.96	-4.43	3.60	3.96	0.11	-0.10	2.65
730.00	0.50	112.75	729.96	-5.38	5.05	5.49	0.13	-0.07	-10.57
909.00	0.63	118.55	908.95	-6.15	6.64	7.13	0.08	0.07	3.24
1,043.00	0.50	124.88	1,042.94	-8.84	7.76	8.31	0.11	-0.10	4.72
1,213.00	0.38	135.95	1,212.94	-7.67	8.76	9.38	0.09	-0.07	6.51
1,404.00	0.38	150.36	1,403.93	-8.67	9.52	10.21	0.05	0.00	7.54
1,582.00	0.50	157.40	1,581.93	-9.90	10.11	10.91	0.07	0.07	3.96



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Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,715.00	0.75	119.43	1,714.92	-10.87	11.09	11.97	0.35	0.19	-28.55
1,760.00	4.69	130.50	1,759.86	-12.21	12.74	13.73	8.79	8.76	24.60
1,805.00	8.89	127.34	1,804.54	-15.46	16.85	18.09	8.92	8.89	-7.02
1,849.00	11.31	140.70	1,847.88	-20.82	22.23	23.90	7.92	5.95	30.36
1,894.00	15.00	139.29	1,891.69	-28.65	28.82	31.14	8.23	8.20	-3.13
1,939.00	19.19	133.67	1,934.69	-38.18	37.97	41.06	10.00	9.31	-12.49
1,984.00	22.50	130.33	1,976.75	-48.86	49.89	53.83	7.81	7.36	-7.42
2,028.00	25.44	127.86	2,016.95	-60.11	63.77	68.62	7.06	6.68	-5.61
2,073.00	27.00	128.39	2,057.32	-72.39	79.41	85.24	3.51	3.47	1.18
2,117.00	29.06	125.75	2,096.15	-84.84	95.91	102.73	5.46	4.68	-6.00
2,162.00	31.25	127.86	2,135.06	-98.39	114.00	121.90	5.41	4.87	4.69
2,207.00	33.81	126.63	2,173.00	-113.02	133.27	142.33	5.88	5.69	-2.73
2,251.00	37.81	125.23	2,208.68	-128.11	154.12	164.38	9.28	9.09	-3.18
2,269.13	39.60	125.90	2,222.83	-134.70	163.33	174.11	9.58	9.30	3.70
Hardline Crossing PT @ 2269.13' MD									
2,296.00	42.00	126.81	2,243.19	-145.10	177.45	189.06	9.58	9.32	3.39
2,341.00	44.94	127.69	2,275.84	-163.84	202.09	215.19	6.67	6.53	1.96
2,386.00	48.63	128.57	2,306.65	-184.09	227.87	242.59	8.32	8.20	1.96
2,432.00	51.69	128.92	2,336.12	-206.20	255.42	271.90	6.68	6.65	0.76
2,475.00	54.38	127.16	2,361.97	-227.36	282.48	300.65	7.06	6.26	-4.09
2,520.00	56.75	124.52	2,387.42	-249.08	312.56	332.47	7.15	5.27	-5.87
2,564.00	59.56	121.36	2,410.64	-269.38	343.93	365.43	8.83	6.39	-7.18
2,609.00	59.50	121.71	2,433.46	-289.67	376.99	400.09	0.68	-0.13	0.78
2,654.00	59.56	121.71	2,456.28	-310.05	409.99	434.68	0.13	0.13	0.00
2,699.00	62.50	116.26	2,478.08	-329.09	444.41	470.60	12.45	6.53	-12.11
2,743.00	66.50	112.57	2,497.03	-345.48	480.57	508.00	11.83	9.09	-8.39
2,788.00	70.13	107.30	2,513.66	-359.71	519.86	548.36	13.54	8.07	-11.71
2,833.00	73.75	102.55	2,527.82	-370.70	561.19	590.46	12.86	8.04	-10.56
2,877.00	76.81	98.68	2,538.80	-378.53	603.00	632.79	10.99	6.95	-8.80
Dee State Com 1H_EOC									
2,922.00	79.44	94.89	2,548.06	-383.76	646.71	676.79	9.93	5.84	-8.20
2,967.00	79.44	94.82	2,556.31	-387.55	690.79	721.03	0.37	0.00	-0.38
3,012.00	79.38	94.64	2,564.58	-391.19	734.87	765.26	0.42	-0.13	-0.40
3,034.71	79.31	94.64	2,568.78	-393.00	757.12	787.58	0.30	-0.30	0.00
Dee State Com 1H - UMP									
3,056.00	79.25	94.64	2,572.74	-394.69	777.97	808.50	0.30	-0.30	0.00
3,101.00	79.19	94.47	2,581.15	-398.20	822.03	852.70	0.39	-0.13	-0.38
3,146.00	79.19	94.29	2,589.59	-401.58	866.11	896.90	0.39	0.00	-0.40
3,191.00	82.44	89.19	2,596.78	-402.82	910.49	941.24	13.32	7.22	-11.33
3,280.00	87.50	89.02	2,604.58	-401.53	999.11	1,029.42	5.69	5.69	-0.19
3,369.00	87.63	89.02	2,608.36	-400.01	1,088.01	1,117.88	0.15	0.15	0.00
3,459.00	87.56	88.49	2,612.14	-398.06	1,177.91	1,207.30	0.59	-0.08	-0.59
3,548.00	88.38	88.84	2,615.29	-395.98	1,266.83	1,295.72	1.00	0.92	0.39
3,638.00	88.94	89.19	2,617.40	-394.44	1,356.79	1,385.23	0.73	0.62	0.39



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Survey

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3,727.00	89.69	90.07	2,618.46	-393.86	1,445.78	1,473.86	1.30	0.84	0.89
3,816.00	89.69	89.72	2,618.94	-393.70	1,534.78	1,562.53	0.39	0.00	-0.39
3,906.00	90.00	89.19	2,619.19	-392.84	1,624.78	1,652.13	0.68	0.34	-0.59
3,995.00	89.31	90.95	2,619.72	-392.95	1,713.77	1,740.81	2.12	-0.78	1.98
4,085.00	88.75	91.83	2,621.25	-395.14	1,803.73	1,830.64	1.16	-0.62	0.98
4,174.00	87.63	90.77	2,624.06	-397.15	1,892.66	1,919.42	1.73	-1.26	-1.19
4,263.00	89.00	90.25	2,626.67	-397.95	1,981.62	2,008.13	1.65	1.54	-0.58
4,353.00	87.69	90.07	2,629.27	-398.20	2,071.58	2,097.79	1.47	-1.46	-0.20
4,442.00	86.56	89.90	2,633.74	-398.17	2,160.46	2,186.35	1.28	-1.27	-0.19
4,532.00	87.38	89.72	2,638.49	-397.88	2,250.34	2,275.88	0.93	0.91	-0.20
4,621.00	87.13	89.37	2,642.76	-397.17	2,339.23	2,364.40	0.48	-0.28	-0.39
4,710.00	87.69	89.02	2,646.78	-395.92	2,428.13	2,452.88	0.74	0.63	-0.39
4,800.00	86.63	89.90	2,651.24	-395.07	2,518.01	2,542.37	1.53	-1.18	0.98
4,889.00	85.06	89.80	2,657.69	-394.92	2,606.78	2,630.80	1.76	-1.76	0.00
4,970.00	85.81	89.72	2,664.13	-394.65	2,687.52	2,711.23	0.95	0.93	-0.22
5,015.00	88.00	89.72	2,667.35	-394.43	2,732.40	2,755.94	0.42	0.42	0.00
5,058.65	87.75	89.98	2,669.73	-394.32	2,775.98	2,799.35	4.04	4.00	0.60
Dee State Com 1H_T1 @ 2800 VS (PN3)									
5,104.00	89.56	90.25	2,670.79	-394.41	2,821.32	2,844.54	4.04	4.00	0.59
5,194.00	91.00	90.07	2,670.35	-394.66	2,911.32	2,934.24	1.61	1.60	-0.20
5,283.00	90.44	90.07	2,669.23	-394.77	3,000.31	3,022.92	0.63	-0.63	0.00
5,372.00	89.50	89.90	2,669.28	-394.74	3,089.31	3,111.60	1.07	-1.06	-0.19
5,462.00	89.56	90.95	2,670.02	-395.41	3,179.30	3,201.33	1.17	0.07	1.17
5,553.00	89.00	90.42	2,671.16	-398.50	3,270.29	3,292.08	0.85	-0.62	-0.58
5,645.00	88.38	89.90	2,673.27	-396.76	3,362.26	3,383.75	0.88	-0.67	-0.57
5,736.00	89.00	90.60	2,675.35	-397.15	3,453.24	3,474.43	1.03	0.68	0.77
5,826.00	89.88	90.77	2,676.23	-398.23	3,543.23	3,564.19	1.00	0.88	0.19
5,915.00	89.56	92.18	2,676.66	-400.52	3,632.19	3,653.03	1.62	-0.36	1.58
6,005.00	89.63	91.48	2,677.30	-403.39	3,722.14	3,742.91	0.78	0.08	-0.78
6,095.00	88.75	90.60	2,678.57	-405.03	3,812.12	3,832.70	1.38	-0.98	-0.98
6,184.00	87.31	90.77	2,681.63	-406.09	3,901.06	3,921.41	1.63	-1.62	0.19
6,273.00	87.56	91.13	2,685.61	-407.57	3,989.98	4,010.12	0.49	0.28	0.40
6,363.00	88.75	91.13	2,688.51	-409.34	4,079.89	4,099.88	1.32	1.32	0.00
6,452.00	89.88	90.60	2,689.57	-410.68	4,168.87	4,188.66	1.40	1.27	-0.60
6,541.00	88.00	89.72	2,691.22	-410.93	4,257.85	4,277.34	2.33	-2.11	-0.99
6,631.00	89.00	90.07	2,693.58	-410.77	4,347.82	4,366.97	1.18	1.11	0.39
6,720.00	88.00	89.37	2,695.91	-410.33	4,436.79	4,455.59	1.37	-1.12	-0.79
6,810.00	88.69	89.19	2,698.50	-409.20	4,526.74	4,545.12	0.79	0.77	-0.20
6,899.00	87.06	89.54	2,701.80	-408.22	4,615.67	4,633.65	1.87	-1.83	0.39
6,989.00	87.94	89.72	2,705.73	-407.64	4,705.58	4,723.20	1.00	0.98	0.20
7,078.00	89.06	89.54	2,708.06	-407.06	4,794.55	4,811.80	1.27	1.26	-0.20
7,113.51	88.54	90.03	2,708.80	-406.93	4,830.05	4,847.16	2.02	-1.47	1.38
Hardline Crossing PT @ 7113.51' MD									
7,115.99	88.50	90.06	2,708.87	-406.93	4,832.53	4,849.64	2.02	-1.47	1.38



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Minimum Curvature
RyanUSA_Compass

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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Dee State Com 1H - LMP									
7,167.00	87.75	90.77	2,710.54	-407.30	4,883.51	4,900.46	2.02	-1.47	1.38
7,212.00	88.25	90.95	2,712.11	-407.98	4,928.48	4,945.33	1.18	1.11	0.40
Dee State Com 1HST_BHL (PN3) - Dee State Com 1H_BHL (PN3) - Dee State Com 1H ST_BHL (Pn3)									
7,273.00	88.25	90.95	2,713.97	-408.99	4,989.44	5,006.16	0.00	0.00	0.00
PTB									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,269.13	2,222.83	-134.70	163.33	Hardline Crossing PT @ 2269.13' MD
7,113.51	2,708.80	-408.93	4,830.05	Hardline Crossing PT @ 7113.51' MD
7,273.00	2,713.97	-408.99	4,989.44	PTB

Checked By: _____ Approved By: _____ Date: _____