

Results of Directional Survey

API number:	30-025-40529		
OGRID:		Operator:	EOG RESOURCES INC
		Property:	VACA 24 FEDERAL COM # 4H

surface	ULSTR:	N	24	T	25S	R	33E
				50	FSL	2190	FWL

BH Loc	ULSTR:	K	13	T	25S	R	33E
16900	MD	9424.7	TVD	2408	FSL	2126	FWL
				7688	FSL		

Top Perf/OH	ULSTR:	N	24	T	25S	R	33E
9575	MD	9436.7	TVD	397	FSL	2162	FWL

Bot Perf/OH	ULSTR:	K	13	T	25S	R	33E
16781	MD	9425.4	TVD	2289	FSL	2122	FWL
				7569	FSL		

	MD	N/S	E/W	VD
	9547	322.91	-25.34	9423.32
TOP PERFS/OH	9575	347.39	-27.79	9436.68
	9579	350.89	-28.14	9438.59
	16693	7431.38	-69.47	9426.27
BOT PERFS/OH	16781	7519.36	-68.02	9425.35
	16788	7526.36	-67.90	9425.28

NEXT TO LAST	16870	7608.31	-65.11	9424.78
LAST READING	16900	7638.29	-64.27	9424.67
TD	16900	7638.29	-64.27	9424.67

Surface Location	50	FS	2190	FW
Projected BHL	7688	FS	2126	FW
Location of				
Top Perfs/OH	397	FS	2162	FW
Bottom Perfs/OH	7569	FS	2122	FW

SUMMARY of Subsurface Locations

Surface Location	N-24-25S-33E	50	FS	2190	FW	Vert. Depth
Top Perfs/OH	N-24-25S-33E	397	FS	2162	FW	9436.68
Bottom Perfs/OH	K-13-25S-33E	7569	FS	2122	FW	9425.35
Projected TD	K-13-25S-33E	7688	FS	2126	FW	9424.67

JUL 02 2013



Actual Wellpath Report

No.4H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	EOG Resources, Inc.	Slot	No.4H SHL
Area	Lea County, NM	Well	No.4 H
Field	(Vaca) Sec 24, T25S, R33E	Wellbore	No.4H AWB
Facility	Vaca 24 Fed Com No.4H		

REPORT SETUP INFORMATION			
Projection System	NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Strosam
Scale	0.99998	Report Generated	17/Oct/2012 at 07:52
Convergence at slot	0.43° East	Database/Source file	WA_Midland/No.4H_AWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	749649.70	404229.80	32°06'31.598"N	103°31'37.403"W
Facility Reference Pt			749649.70	404229.80	32°06'31.598"N	103°31'37.403"W
Field Reference Pt			749649.70	404229.80	32°06'31.598"N	103°31'37.403"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Cactus 123 (KB) to Facility Vertical Datum	30.00ft
Horizontal Reference Pt	Facility Center	Cactus 123 (KB) to Mean Sea Level	3360.40ft
Vertical Reference Pt	Cactus 123 (KB)	Cactus 123 (KB) to Mud Line at Slot (No.4H SHL)	30.00ft
MD Reference Pt	Cactus 123 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.56°

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Facility	Vaca 24 Fed Com No.4H		

WELLPATH DATA (180 stations)											
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]
0.00	0.000	65.020	0.00	0.00	0.00	0.00	749649.70	404229.80	32°06'31.598"N	103°31'37.403"W	0.00
100.00	0.370	65.020	100.00	0.13	0.14	0.29	749649.99	404229.94	32°06'31.599"N	103°31'37.399"W	0.37
200.00	0.730	130.040	200.00	-0.15	-0.14	1.07	749650.77	404229.66	32°06'31.596"N	103°31'37.390"W	0.66
300.00	0.850	124.270	299.99	-0.98	-0.96	2.17	749651.87	404228.84	32°06'31.588"N	103°31'37.377"W	0.14
400.00	0.960	118.500	399.97	-1.81	-1.78	3.52	749653.22	404228.02	32°06'31.580"N	103°31'37.362"W	0.14
500.00	1.030	118.110	499.96	-2.64	-2.61	5.05	749654.75	404227.19	32°06'31.572"N	103°31'37.344"W	0.07
600.00	1.070	117.730	599.94	-3.51	-3.46	6.67	749656.37	404226.34	32°06'31.563"N	103°31'37.325"W	0.04
700.00	1.090	110.170	699.92	-4.29	-4.23	8.39	749658.09	404225.57	32°06'31.555"N	103°31'37.305"W	0.14
800.00	1.110	102.600	799.91	-4.84	-4.76	10.23	749659.93	404225.04	32°06'31.550"N	103°31'37.284"W	0.15
900.00	1.090	104.700	899.89	-5.31	-5.22	12.09	749661.79	404224.58	32°06'31.545"N	103°31'37.262"W	0.04
1000.00	1.050	106.810	999.87	-5.83	-5.72	13.89	749663.59	404224.08	32°06'31.540"N	103°31'37.242"W	0.06
1100.00	0.570	123.220	1099.86	-6.38	-6.26	15.18	749664.88	404223.54	32°06'31.535"N	103°31'37.227"W	0.53
1200.00	0.100	139.630	1199.86	-6.72	-6.60	15.66	749665.36	404223.20	32°06'31.531"N	103°31'37.221"W	0.47
1300.00	0.060	67.810	1299.86	-6.77	-6.65	15.76	749665.46	404223.15	32°06'31.531"N	103°31'37.220"W	0.10
1400.00	0.020	355.980	1399.86	-6.73	-6.61	15.81	749665.51	404223.19	32°06'31.531"N	103°31'37.219"W	0.06
1500.00	0.030	274.260	1499.86	-6.71	-6.59	15.78	749665.48	404223.21	32°06'31.532"N	103°31'37.220"W	0.03
1600.00	0.040	192.540	1599.86	-6.74	-6.62	15.75	749665.45	404223.18	32°06'31.531"N	103°31'37.220"W	0.05
1700.00	0.070	214.220	1699.86	-6.83	-6.71	15.71	749665.41	404223.09	32°06'31.530"N	103°31'37.221"W	0.04
1800.00	0.090	235.900	1799.86	-6.92	-6.80	15.61	749665.31	404223.00	32°06'31.529"N	103°31'37.222"W	0.04
1900.00	0.230	247.990	1899.86	-7.04	-6.92	15.36	749665.06	404222.88	32°06'31.528"N	103°31'37.225"W	0.14
2000.00	0.160	260.070	1999.86	-7.13	-7.02	15.03	749664.73	404222.78	32°06'31.527"N	103°31'37.228"W	0.08
2100.00	0.110	183.400	2099.86	-7.25	-7.14	14.89	749664.59	404222.66	32°06'31.526"N	103°31'37.230"W	0.17
2200.00	0.050	106.730	2199.86	-7.36	-7.25	14.92	749664.62	404222.55	32°06'31.525"N	103°31'37.230"W	0.11
2300.00	0.140	101.760	2299.86	-7.40	-7.29	15.09	749664.79	404222.51	32°06'31.525"N	103°31'37.228"W	0.09
2400.00	0.030	96.790	2399.86	-7.43	-7.31	15.23	749664.93	404222.49	32°06'31.524"N	103°31'37.226"W	0.11
2500.00	0.250	87.470	2499.86	-7.43	-7.31	15.48	749665.18	404222.49	32°06'31.524"N	103°31'37.223"W	0.22
2600.00	0.270	78.150	2599.85	-7.37	-7.25	15.92	749665.62	404222.55	32°06'31.525"N	103°31'37.218"W	0.05
2700.00	0.270	68.440	2699.85	-7.24	-7.11	16.37	749666.07	404222.69	32°06'31.526"N	103°31'37.213"W	0.05
2800.00	0.080	58.730	2799.85	-7.12	-6.99	16.65	749666.35	404222.81	32°06'31.528"N	103°31'37.210"W	0.19
2900.00	0.140	47.550	2899.85	-7.00	-6.87	16.80	749666.50	404222.93	32°06'31.529"N	103°31'37.208"W	0.06
3000.00	0.190	36.370	2999.85	-6.79	-6.66	16.99	749666.69	404223.14	32°06'31.531"N	103°31'37.206"W	0.06
3100.00	0.500	42.710	3099.85	-6.34	-6.20	17.39	749667.09	404223.60	32°06'31.535"N	103°31'37.201"W	0.31
3200.00	0.620	49.250	3199.85	-5.67	-5.53	18.09	749667.79	404224.27	32°06'31.542"N	103°31'37.193"W	0.14
3300.00	0.500	63.570	3299.84	-5.13	-4.98	18.89	749668.59	404224.82	32°06'31.547"N	103°31'37.183"W	0.18
3400.00	0.380	77.890	3399.84	-4.87	-4.72	19.61	749669.31	404225.08	32°06'31.550"N	103°31'37.175"W	0.16
3500.00	0.230	70.270	3499.84	-4.73	-4.58	20.12	749669.82	404225.22	32°06'31.551"N	103°31'37.169"W	0.16
3600.00	0.090	62.650	3599.84	-4.63	-4.48	20.38	749670.08	404225.32	32°06'31.552"N	103°31'37.166"W	0.14
3700.00	0.050	51.770	3699.84	-4.57	-4.41	20.48	749670.18	404225.39	32°06'31.553"N	103°31'37.165"W	0.04
3800.00	0.040	40.890	3799.84	-4.52	-4.36	20.54	749670.24	404225.44	32°06'31.553"N	103°31'37.164"W	0.01
3900.00	0.140	41.620	3899.84	-4.40	-4.24	20.64	749670.34	404225.56	32°06'31.554"N	103°31'37.163"W	0.10
4000.00	0.230	42.350	3999.83	-4.16	-4.00	20.86	749670.56	404225.80	32°06'31.557"N	103°31'37.160"W	0.09
4100.00	0.180	92.420	4099.83	-4.02	-3.86	21.15	749670.85	404225.94	32°06'31.558"N	103°31'37.157"W	0.18
4200.00	0.130	142.490	4199.83	-4.12	-3.96	21.38	749671.08	404225.84	32°06'31.557"N	103°31'37.154"W	0.14
4300.00	0.200	123.720	4299.83	-4.31	-4.14	21.59	749671.29	404225.66	32°06'31.555"N	103°31'37.152"W	0.09
4400.00	0.270	104.940	4399.83	-4.47	-4.30	21.97	749671.66	404225.50	32°06'31.554"N	103°31'37.148"W	0.10



Actual Wellpath Report

No.4H AWP

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Operator	EOG Resources, Inc.	Slot	No.4H SHL
Area	Lea County, NM	Well	No.4 H
Field	(Vaca) Sec 24, T25S, R33E	Wellbore	No.4H AWB
Facility	Vaca 24 Fed Com No.4H		

WELLPATH DATA (180 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]
4500.00	0.200	112.470	4499.83	-4.60	-4.43	22.35	749672.05	404225.37	32°06'31.552"N	103°31'37.143"W	0.08
4600.00	0.150	120.000	4599.83	-4.73	-4.56	22.63	749672.33	404225.24	32°06'31.551"N	103°31'37.140"W	0.05
4700.00	0.150	193.630	4699.83	-4.93	-4.75	22.71	749672.41	404225.05	32°06'31.549"N	103°31'37.139"W	0.18
4800.00	0.140	267.260	4799.83	-5.06	-4.89	22.56	749672.26	404224.91	32°06'31.548"N	103°31'37.141"W	0.17
4900.00	0.700	183.890	4899.83	-5.67	-5.50	22.40	749672.09	404224.30	32°06'31.542"N	103°31'37.143"W	0.70
4925.00	0.460	183.000	4924.83	-5.93	-5.76	22.38	749672.08	404224.04	32°06'31.539"N	103°31'37.143"W	0.96
5124.00	0.300	218.500	5123.82	-7.13	-6.96	22.01	749671.71	404222.84	32°06'31.527"N	103°31'37.147"W	0.14
5250.00	0.200	303.700	5249.82	-7.26	-7.10	21.63	749671.32	404222.70	32°06'31.526"N	103°31'37.152"W	0.27
5440.00	0.100	264.600	5439.82	-7.09	-6.93	21.18	749670.88	404222.87	32°06'31.528"N	103°31'37.157"W	0.07
5631.00	0.300	243.300	5630.82	-7.33	-7.17	20.57	749670.27	404222.63	32°06'31.525"N	103°31'37.164"W	0.11
5821.00	0.300	266.900	5820.82	-7.57	-7.42	19.63	749669.33	404222.38	32°06'31.523"N	103°31'37.175"W	0.06
6011.00	0.200	209.400	6010.82	-7.88	-7.74	18.97	749668.67	404222.06	32°06'31.520"N	103°31'37.183"W	0.13
6200.00	0.300	192.900	6199.81	-8.65	-8.50	18.70	749668.40	404221.30	32°06'31.512"N	103°31'37.186"W	0.06
6389.00	0.400	192.600	6388.81	-9.77	-9.63	18.44	749668.14	404220.17	32°06'31.501"N	103°31'37.189"W	0.05
6577.00	0.400	187.900	6576.81	-11.06	-10.92	18.21	749667.91	404218.88	32°06'31.489"N	103°31'37.192"W	0.02
6766.00	0.300	193.400	6765.80	-12.19	-12.06	18.01	749667.71	404217.74	32°06'31.477"N	103°31'37.194"W	0.06
6956.00	0.400	207.900	6955.80	-13.26	-13.13	17.58	749667.28	404216.67	32°06'31.467"N	103°31'37.199"W	0.07
7146.00	0.400	180.400	7145.79	-14.51	-14.38	17.26	749666.96	404215.42	32°06'31.454"N	103°31'37.203"W	0.10
7335.00	0.600	179.400	7334.79	-16.16	-16.02	17.27	749666.97	404213.78	32°06'31.438"N	103°31'37.203"W	0.11
7525.00	0.700	173.000	7524.78	-18.30	-18.17	17.42	749667.12	404211.63	32°06'31.417"N	103°31'37.202"W	0.06
7714.00	1.400	274.500	7713.75	-19.25	-19.14	15.26	749664.96	404210.66	32°06'31.407"N	103°31'37.227"W	0.89
7903.00	1.500	278.000	7902.69	-18.69	-18.61	10.51	749660.21	404211.19	32°06'31.413"N	103°31'37.282"W	0.07
8093.00	1.100	262.200	8092.64	-18.56	-18.51	6.24	749655.94	404211.29	32°06'31.414"N	103°31'37.332"W	0.28
8283.00	1.000	254.300	8282.61	-19.23	-19.21	2.84	749652.54	404210.59	32°06'31.408"N	103°31'37.371"W	0.09
8472.00	1.400	292.900	8471.57	-18.75	-18.76	-0.88	749648.82	404211.04	32°06'31.412"N	103°31'37.414"W	0.46
8662.00	1.100	269.900	8661.53	-17.82	-17.86	-4.84	749644.86	404211.94	32°06'31.422"N	103°31'37.460"W	0.30
8788.00	0.900	268.700	8787.51	-17.83	-17.88	-7.04	749642.66	404211.92	32°06'31.422"N	103°31'37.486"W	0.16
8862.00	0.900	316.300	8861.50	-17.41	-17.47	-8.02	749641.68	404212.33	32°06'31.426"N	103°31'37.497"W	0.98
8893.00	3.500	352.700	8892.48	-16.30	-16.36	-8.31	749641.39	404213.44	32°06'31.437"N	103°31'37.501"W	9.12
8923.00	6.300	356.400	8922.36	-13.74	-13.81	-8.53	749641.17	404215.99	32°06'31.462"N	103°31'37.503"W	9.39
8954.00	10.900	359.200	8953.01	-9.11	-9.18	-8.68	749641.02	404220.62	32°06'31.508"N	103°31'37.504"W	14.90
8984.00	15.100	359.200	8982.23	-2.36	-2.43	-8.77	749640.93	404227.37	32°06'31.575"N	103°31'37.505"W	14.00
9015.00	18.200	358.500	9011.93	6.52	6.45	-8.95	749640.75	404236.25	32°06'31.662"N	103°31'37.506"W	10.02
9046.00	21.400	357.500	9041.09	17.01	16.94	-9.33	749640.37	404246.74	32°06'31.766"N	103°31'37.509"W	10.38
9077.00	24.300	356.700	9069.66	29.04	28.96	-9.94	749639.76	404258.76	32°06'31.885"N	103°31'37.516"W	9.41
9107.00	25.900	356.400	9096.82	41.74	41.66	-10.71	749638.99	404271.46	32°06'32.011"N	103°31'37.523"W	5.35
9138.00	26.000	357.100	9124.70	55.29	55.21	-11.48	749638.22	404285.01	32°06'32.145"N	103°31'37.531"W	1.04
9169.00	26.500	358.200	9152.50	69.00	68.91	-12.04	749637.66	404298.70	32°06'32.281"N	103°31'37.536"W	2.25
9200.00	28.600	358.400	9179.98	83.33	83.24	-12.46	749637.24	404313.04	32°06'32.423"N	103°31'37.540"W	6.78
9231.00	30.100	358.400	9207.00	98.52	98.43	-12.89	749636.81	404328.22	32°06'32.573"N	103°31'37.544"W	4.84
9263.00	33.200	358.200	9234.24	115.31	115.21	-13.39	749636.31	404345.00	32°06'32.739"N	103°31'37.548"W	9.69
9295.00	36.500	358.600	9260.50	133.59	133.48	-13.89	749635.81	404363.28	32°06'32.920"N	103°31'37.552"W	10.34
9326.00	40.300	358.900	9284.79	152.84	152.73	-14.31	749635.39	404382.53	32°06'33.110"N	103°31'37.556"W	12.27
9358.00	43.400	358.700	9308.62	174.18	174.07	-14.76	749634.94	404403.87	32°06'33.322"N	103°31'37.559"W	9.70
9389.00	46.100	357.400	9330.64	195.99	195.88	-15.51	749634.19	404425.68	32°06'33.537"N	103°31'37.566"W	9.20

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No.4H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	EOG Resources, Inc.	Slot	No.4H SHL
Area	Lea County, NM	Well	No.4 H
Field	(Vaca) Sec 24, T25S, R33E	Wellbore	No.4H AWB
Facility	Vaca 24 Fed Com No.4H		

WELLPATH DATA (180 stations)											
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]
9421.00	49.800	356.500	9352.07	219.73	219.61	-16.78	749632.92	404449.40	32°06'33.772"N	103°31'37.578"W	11.75
9452.00	52.800	355.800	9371.45	243.87	243.74	-18.41	749631.30	404473.54	32°06'34.011"N	103°31'37.595"W	9.84
9484.00	55.200	355.100	9390.25	269.69	269.55	-20.46	749629.24	404499.34	32°06'34.267"N	103°31'37.617"W	7.71
9516.00	58.400	354.700	9407.77	296.38	296.21	-22.84	749626.86	404526.01	32°06'34.531"N	103°31'37.642"W	10.05
9547.00	61.400	354.600	9423.32	323.10	322.91	-25.34	749624.36	404552.70	32°06'34.795"N	103°31'37.669"W	9.68
9579.00	61.600	354.000	9438.59	351.10	350.89	-28.14	749621.56	404580.69	32°06'35.072"N	103°31'37.699"W	1.76
9610.00	64.600	353.500	9452.61	378.60	378.37	-31.15	749618.55	404608.16	32°06'35.344"N	103°31'37.732"W	9.78
9642.00	68.300	353.500	9465.40	407.76	407.51	-34.47	749615.23	404637.31	32°06'35.633"N	103°31'37.768"W	11.56
9674.00	72.000	354.500	9476.26	437.72	437.44	-37.61	749612.09	404667.23	32°06'35.929"N	103°31'37.802"W	11.93
9705.00	74.300	353.800	9485.25	467.25	466.95	-40.64	749609.07	404696.74	32°06'36.222"N	103°31'37.834"W	7.73
9737.00	78.900	353.700	9492.66	498.21	497.89	-44.02	749605.68	404727.68	32°06'36.528"N	103°31'37.871"W	14.38
9768.00	81.600	354.100	9497.91	528.61	528.27	-47.27	749602.43	404758.06	32°06'36.829"N	103°31'37.906"W	8.80
9799.00	84.900	354.300	9501.55	559.26	558.89	-50.38	749599.32	404788.68	32°06'37.132"N	103°31'37.940"W	10.66
9831.00	88.500	354.000	9503.39	591.06	590.67	-53.64	749596.07	404820.45	32°06'37.447"N	103°31'37.975"W	11.29
9863.00	90.300	355.000	9503.73	622.93	622.51	-56.70	749593.00	404852.30	32°06'37.762"N	103°31'38.008"W	6.43
9958.00	92.100	358.600	9501.74	717.78	717.33	-62.00	749587.70	404947.11	32°06'38.701"N	103°31'38.061"W	4.24
10053.00	90.500	359.600	9499.58	812.75	812.29	-63.50	749586.21	405042.07	32°06'39.640"N	103°31'38.070"W	1.99
10147.00	90.500	359.700	9498.76	906.74	906.28	-64.07	749585.63	405136.06	32°06'40.571"N	103°31'38.069"W	0.11
10241.00	91.600	358.300	9497.04	1000.72	1000.25	-65.71	749583.99	405230.02	32°06'41.501"N	103°31'38.079"W	1.89
10336.00	91.400	357.700	9494.55	1095.65	1095.16	-69.02	749580.68	405324.93	32°06'42.440"N	103°31'38.110"W	0.67
10431.00	91.600	357.400	9492.07	1190.56	1190.04	-73.08	749576.62	405419.81	32°06'43.379"N	103°31'38.149"W	0.38
10525.00	91.800	358.200	9489.28	1284.47	1283.92	-76.69	749573.01	405513.70	32°06'44.309"N	103°31'38.182"W	0.88
10621.00	89.500	358.800	9488.19	1380.44	1379.88	-79.20	749570.50	405609.65	32°06'45.258"N	103°31'38.203"W	2.48
10715.00	92.000	3.300	9486.96	1474.37	1473.82	-77.48	749572.22	405703.59	32°06'46.188"N	103°31'38.175"W	5.48
10810.00	91.100	8.900	9484.39	1568.68	1568.21	-67.39	749582.31	405797.98	32°06'47.121"N	103°31'38.050"W	5.97
10905.00	90.800	9.400	9482.81	1662.34	1661.99	-52.29	749597.41	405891.75	32°06'48.048"N	103°31'37.866"W	0.61
10999.00	91.000	8.400	9481.34	1755.08	1754.85	-37.75	749611.95	405984.61	32°06'48.966"N	103°31'37.689"W	1.08
11094.00	90.800	7.300	9479.84	1849.08	1848.94	-24.78	749624.93	406078.70	32°06'49.896"N	103°31'37.530"W	1.18
11190.00	90.900	4.400	9478.42	1944.48	1944.42	-14.99	749634.71	406174.18	32°06'50.840"N	103°31'37.408"W	3.02
11285.00	90.500	0.600	9477.26	2039.33	2039.31	-10.85	749638.85	406269.06	32°06'51.778"N	103°31'37.351"W	4.02
11379.00	90.600	0.900	9476.36	2133.30	2133.29	-9.62	749640.08	406363.05	32°06'52.708"N	103°31'37.329"W	0.34
11474.00	90.100	2.300	9475.77	2228.24	2228.25	-6.97	749642.73	406458.00	32°06'53.648"N	103°31'37.290"W	1.56
11568.00	90.300	359.200	9475.45	2322.21	2322.23	-5.74	749643.96	406551.98	32°06'54.578"N	103°31'37.267"W	3.30
11664.00	90.700	357.600	9474.61	2418.18	2418.19	-8.42	749641.28	406647.94	32°06'55.527"N	103°31'37.290"W	1.72
11758.00	90.100	357.200	9473.95	2512.11	2512.09	-12.68	749637.02	406741.83	32°06'56.457"N	103°31'37.331"W	0.77
11853.00	90.700	355.400	9473.29	2606.95	2606.88	-18.81	749630.89	406836.63	32°06'57.395"N	103°31'37.394"W	2.00
11948.00	90.300	355.400	9472.46	2701.70	2701.57	-26.43	749623.27	406931.32	32°06'58.333"N	103°31'37.475"W	0.42
12043.00	90.400	354.100	9471.88	2796.36	2796.17	-35.12	749614.58	407025.91	32°06'59.270"N	103°31'37.568"W	1.37
12138.00	90.300	354.400	9471.30	2890.95	2890.69	-44.64	749605.06	407120.43	32°07'00.206"N	103°31'37.670"W	0.33
12233.00	90.700	358.300	9470.47	2985.78	2985.48	-50.69	749599.01	407215.21	32°07'01.144"N	103°31'37.732"W	4.13
12327.00	91.900	1.400	9468.34	3079.74	3079.44	-50.93	749598.77	407309.17	32°07'02.074"N	103°31'37.727"W	3.54
12422.00	91.000	4.000	9465.93	3174.56	3174.29	-46.46	749603.24	407404.03	32°07'03.012"N	103°31'37.667"W	2.90
12516.00	91.100	5.400	9464.21	3268.16	3267.96	-38.76	749610.94	407497.69	32°07'03.938"N	103°31'37.569"W	1.49
12611.00	91.000	6.000	9462.47	3362.60	3362.47	-29.32	749620.38	407592.20	32°07'04.873"N	103°31'37.451"W	0.64
12706.00	90.500	6.500	9461.23	3456.94	3456.90	-18.98	749630.72	407686.63	32°07'05.807"N	103°31'37.323"W	0.74

Actual Wellpath Report

No.4H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	EOG Resources, Inc.	Slot	No.4H SHL
Area	Lea County, NM	Well	No.4 H
Field	(Vaca) Sec 24, T25S, R33E	Wellbore	No.4H AWB
Facility	Vaca 24 Fed Com No.4H		

WELLPATH DATA (180 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]
12802.00	89.900	4.800	9460.89	3552.40	3552.43	-9.53	749640.17	407782.15	32°07'06.751"N	103°31'37.204"W	1.88
12897.00	90.400	0.700	9460.64	3647.23	3647.30	-4.98	749644.72	407877.02	32°07'07.690"N	103°31'37.143"W	4.35
12992.00	90.500	357.800	9459.90	3742.22	3742.28	-6.22	749643.48	407972.00	32°07'08.630"N	103°31'37.149"W	3.05
13087.00	90.500	355.200	9459.07	3837.07	3837.09	-12.02	749637.68	408066.81	32°07'09.568"N	103°31'37.208"W	2.74
13181.00	90.600	352.300	9458.16	3930.57	3930.52	-22.25	749627.45	408160.23	32°07'10.493"N	103°31'37.319"W	3.09
13276.00	90.900	355.500	9456.92	4025.09	4024.96	-32.34	749617.36	408254.67	32°07'11.429"N	103°31'37.428"W	3.38
13371.00	90.600	352.200	9455.68	4119.59	4119.39	-42.52	749607.18	408349.10	32°07'12.364"N	103°31'37.539"W	3.49
13466.00	90.500	350.300	9454.76	4213.59	4213.28	-56.97	749592.73	408442.98	32°07'13.294"N	103°31'37.698"W	2.00
13560.00	90.500	351.100	9453.94	4306.46	4306.04	-72.16	749577.54	408535.74	32°07'14.213"N	103°31'37.867"W	0.85
13655.00	90.400	354.500	9453.20	4400.78	4400.27	-84.06	749565.64	408629.97	32°07'15.146"N	103°31'37.997"W	3.58
13750.00	90.400	0.000	9452.53	4495.67	4495.12	-88.62	749561.08	408724.82	32°07'16.085"N	103°31'38.042"W	5.79
13845.00	90.200	0.700	9452.04	4590.66	4590.12	-88.04	749561.66	408819.82	32°07'17.025"N	103°31'38.027"W	0.77
13940.00	90.500	357.700	9451.46	4685.64	4685.10	-89.36	749560.34	408914.79	32°07'17.965"N	103°31'38.034"W	3.17
14034.00	90.800	359.100	9450.39	4779.61	4779.05	-91.99	749557.71	409008.75	32°07'18.895"N	103°31'38.056"W	1.52
14129.00	90.700	2.100	9449.15	4874.58	4874.03	-90.99	749558.71	409103.72	32°07'19.835"N	103°31'38.037"W	3.16
14223.00	90.800	6.100	9447.91	4968.26	4967.76	-84.28	749565.43	409197.45	32°07'20.762"N	103°31'37.950"W	4.26
14318.00	90.800	7.200	9446.59	5062.52	5062.11	-73.28	749576.43	409291.80	32°07'21.695"N	103°31'37.814"W	1.16
14413.00	90.700	7.100	9445.34	5156.68	5156.36	-61.45	749588.25	409386.05	32°07'22.627"N	103°31'37.668"W	0.15
14508.00	91.100	8.100	9443.85	5250.73	5250.51	-48.89	749600.81	409480.20	32°07'23.557"N	103°31'37.514"W	1.13
14602.00	90.400	7.400	9442.62	5343.77	5343.65	-36.22	749613.49	409573.33	32°07'24.478"N	103°31'37.359"W	1.05
14697.00	90.400	6.300	9441.96	5438.00	5437.96	-24.88	749624.82	409667.65	32°07'25.410"N	103°31'37.219"W	1.16
14792.00	90.500	5.100	9441.21	5532.45	5532.49	-15.45	749634.25	409762.17	32°07'26.345"N	103°31'37.101"W	1.27
14887.00	90.400	2.100	9440.47	5627.20	5627.29	-9.49	749640.21	409856.97	32°07'27.283"N	103°31'37.023"W	3.16
14982.00	90.500	357.400	9439.72	5722.17	5722.26	-9.90	749639.80	409951.94	32°07'28.222"N	103°31'37.020"W	4.95
15077.00	90.500	357.900	9438.89	5817.11	5817.17	-13.80	749635.91	410046.85	32°07'29.162"N	103°31'37.057"W	0.53
15172.00	90.500	358.700	9438.06	5912.08	5912.13	-16.61	749633.09	410141.80	32°07'30.102"N	103°31'37.081"W	0.84
15267.00	90.600	0.100	9437.15	6007.08	6007.12	-17.61	749632.09	410236.79	32°07'31.042"N	103°31'37.085"W	1.48
15363.00	90.700	0.200	9436.06	6103.07	6103.11	-17.36	749632.34	410332.78	32°07'31.992"N	103°31'37.073"W	0.15
15458.00	90.600	357.700	9434.98	6198.05	6198.08	-19.10	749630.60	410427.75	32°07'32.932"N	103°31'37.085"W	2.63
15553.00	90.300	356.600	9434.24	6292.96	6292.96	-23.82	749625.88	410522.62	32°07'33.871"N	103°31'37.132"W	1.20
15648.00	90.200	355.100	9433.82	6387.75	6387.71	-30.70	749619.01	410617.37	32°07'34.809"N	103°31'37.204"W	1.58
15742.00	90.300	354.700	9433.41	6481.44	6481.33	-39.05	749610.65	410710.99	32°07'35.736"N	103°31'37.293"W	0.44
15837.00	90.100	354.900	9433.08	6576.11	6575.94	-47.66	749602.04	410805.60	32°07'36.673"N	103°31'37.385"W	0.30
15932.00	90.600	356.100	9432.50	6670.87	6670.64	-55.11	749594.59	410900.30	32°07'37.610"N	103°31'37.463"W	1.37
16027.00	90.100	359.000	9431.92	6765.80	6765.55	-59.18	749590.53	410995.20	32°07'38.550"N	103°31'37.502"W	3.10
16122.00	90.300	359.900	9431.59	6860.80	6860.54	-60.09	749589.61	411090.19	32°07'39.490"N	103°31'37.504"W	0.97
16217.00	90.400	359.500	9431.01	6955.80	6955.54	-60.58	749589.12	411185.19	32°07'40.430"N	103°31'37.502"W	0.43
16312.00	90.500	357.400	9430.26	7050.77	7050.49	-63.15	749586.55	411280.14	32°07'41.370"N	103°31'37.523"W	2.21
16408.00	90.400	0.600	9429.51	7146.75	7146.46	-64.83	749584.87	411376.11	32°07'42.320"N	103°31'37.535"W	3.33
16503.00	90.800	359.200	9428.51	7241.74	7241.46	-64.99	749584.71	411471.10	32°07'43.259"N	103°31'37.528"W	1.53
16598.00	90.600	357.900	9427.35	7336.72	7336.42	-67.40	749582.30	411566.06	32°07'44.199"N	103°31'37.548"W	1.38
16693.00	90.700	359.600	9426.27	7431.70	7431.38	-69.47	749580.23	411661.02	32°07'45.139"N	103°31'37.564"W	1.79
16788.00	90.500	2.300	9425.28	7526.66	7526.36	-67.90	749581.81	411755.99	32°07'46.079"N	103°31'37.537"W	2.85
16870.00	90.200	1.600	9424.78	7608.58	7608.31	-65.11	749584.60	411837.94	32°07'46.890"N	103°31'37.498"W	0.93
16900.00	90.200	1.600	9424.67	7638.56	7638.29	-64.27	749585.43	411867.93	32°07'47.186"N	103°31'37.485"W	0.00



Actual Wellpath Report

No.4H AWP

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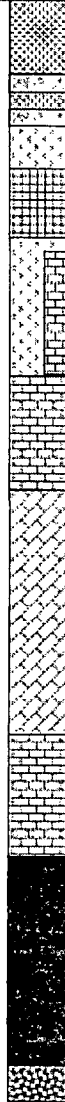


REFERENCE WELLPATH IDENTIFICATION			
Operator	EOG Resources, Inc.	Slot	No.4H SHL
Area	Lea County, NM	Well	No.4 H
Field	(Vaca) Sec 24, T25S, R33E	Wellbore	No.4H AWB
Facility	Vaca 24 Fed Com No.4H		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
No.4H PBHL		9430.00	7640.26	-58.47	749591.23	411869.90	32°07'47.205"N	103°31'37.418"W	point
330' FNL		9430.85	7540.26	-57.70	749592.00	411769.90	32°07'46.216"N	103°31'37.417"W	point

WELLPATH COMPOSITION - Ref Wellbore: No.4H AWB					Ref Wellpath: No.4H AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment	Wellbore
0.00	4925.00	Generic gyro - northseeking (Standard)			VES Gyro <100-4925>	No.4H AWB
4925.00	16900.00	NaviTrak (Standard)			BHI MWD NaviTrak <5124-XXXX>	No.4H AWB

CURRENT WELL SKETCH

DEPTH (ft)	MARKERS (KB)	LITHOLOGY	OGRID: API: 30-025-40529 AFE: 104814 SPUD: 9/29/12 @ 03:00 hrs FRR: 10/20/2012 @ 01:00 hrs RIG: Cactus #123	Vaca 24 Fed Com #4H Red Hills(Bone Spring) Field Lea County, New Mexico	SURF: 50' FSL & 2190' FWL LOC: Sec. 24 SURVEY: T-25-S, R-33-E GL: 3360.4' KB: 3330.4' ZERO: 30.0' AGL	HOLE SIZE	MW (ppg)	MUD	BHST (°F)	LOT (ppg)	EVALUATION	
2,000'	Rustler - 1090' Top Salt - 1460'		<u>20" Conductor @ 140'</u>			17-1/2"	8.6	FW		N/A		
3,000'			<u>Surface Casing @ 1,135'</u> 13-3/8" 54.5# J-55 STC Cement w/ 575 sx Class C + 4.0% Bentonite + 1.0% CaCl2 + 0.25 pps Celloflake (13.5 ppg, 1.734 yld), followed by 325 sx Class C + 1.0% CaCl2 (14.8 ppg, 1.335 yld). Bump plug w/ 1100 psi and circ 268 sx to surface				9.0		86			
5,000'	Base Salt - 4930' Lamar - 5170' Bell Canyon - 5196'		TOC @ 4,600'			12-1/4"	10.0	Brine				
6,000'	Cherry Canyon - 6190'										NA	
7,000'			<u>Intermediate Casing @ 5,030'</u> 9-5/8", 40#, J-55, LT&C (0' - 3,858") 9-5/8", 40#, HCK-55, LT&C (3,858' - 5,030') Cement w/ 1100 sx Class C + 2.0% SMS + 10.0% Salt + 0.95% R-3 + 0.25 pps Celloflake (12.7 ppg, 2.218 yld), followed by 200 sx Class C + 0.60% FL-62 + 0.45% CD-32 + 0.20% SMS + 0.20% R-3 (14.8 ppg, 1.333 yld). Bump plug w/ 1760 psi and circ 324 sx to surface				10.2			117		
8,000'	Brushy Canyon - 7775'		<u>KOP @ ~8,972'</u>			8-3/4"	8.4	WBM		N/A		
9,000'	Bone Spring Lime - 9260'											
10,000'			<u>Production Casing @ 16,878' MD, 9,425' TVD</u> 5-1/2" 17# HCP-110 LTC Cement lead w/ 350 sx Class "C" + 15.00 IB/SK BA-90 + 4.00% MPA-5 + 3.00% SMS + 5.00% A-10 + 1.00% BA-10A + 0.80% ASA-301 + 3.10% R-21 + 8.00 IB/SK LCM-1 (10.8 ppg, 3.68 yield). Middle cement w/ 400 sx Class "H" + 0.80% FL-52 + 0.30% ASA-301 + 0.50% SMS+ 2.00% Salt (2.22 LB/SK) + 0.05% R-21 + 3.00 IB/SK LCM-1 +0.25 IB/SK Cello Flake (11.5 ppg, 2.38 yield). Tail in w/ 1900 sx Class "H" + 0.65% FL-52 + 0.50% CD-32 + 0.40% SMS + 2.00% SALT + 0.15% R-3 (14.2 ppg, 1.28 yield). No cement to surface.				9.3			140		
11,000'												

Drig Eng:	S. Munsell
Date:	10/20/2012

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 Date: 10/20/2012