

Results of Directional Survey

API number:	30-025-41595			
OGRID:		Operator:	DEVON ENERGY PRODUCTION COMPANY, LP	
		Property:	IRONHOUSE 24 STATE COM	# 2H

surface	ULSTR:	O	24	T 18S	R 34E
				200 FSL	1980 FEL

BH Loc	ULSTR:	B	24	T 18S	R 34E
14189 MD		9590.8	TVD	319 FNL	2033 FEL
				4961 FSL	

Top Perf/OH	ULSTR:	O	24	T 18S	R 34E
9956 MD		9811.3	TVD	745 FSL	2058 FEL

Bot Perf/OH	ULSTR:	B	24	T 18S	R 34E
14116 MD		9595.7	TVD	392 FNL	2032 FEL
				4888 FSL	

	MD	N/S	E/W	VD
	9934	524.83	-78.23	9802.21
TOP PERFS/OH	9956	544.85	-78.00	9811.33
	9966	553.95	-77.89	9815.47
	14090	4662.17	-52.03	9597.47
BOT PERFS/OH	14116	4688.11	-52.33	9595.66
	14135	4707.06	-52.55	9594.33

NEXT TO LAST	14135	4707.06	-52.55	9594.33
LAST READING	14189	4760.94	-53.04	9590.81
TD	14189	4760.94	-53.04	9590.81

Surface Location	200	FS	1980	FE
Projected BHL	4961	FS	2033	FE
Location of				
Top Perfs/OH	745	FS	2058	FE
Bottom Perfs/OH	4888	FS	2032	FE

SUMMARY of Subsurface Locations

Surface Location	O-24-18S-34E	200	FS	1980	FE	Vert. Depth
Top Perfs/OH	O-24-18S-34E	745	FS	2058	FE	9811.33
Bottom Perfs/OH	B-24-18S-34E	4888	FS	2032	FE	9595.66
Projected TD	B-24-18S-34E	4961	FS	2033	FE	9590.81

AUG 19 2014



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Directional Survey

District DELAWARE BASIN	County LEA	Field Name MESCALERO ESCARPE	Project Group DELAWARE BASIN REG	State/Province NM			
Surface Legal Location SEC24 T18S R34E	API/UWI 3002541595	Latitude (°) 32° 43' 35.724" N	Longitude (°) 103° 30' 42.128" W	Ground Elev... 3,968.40	KB - GL (ft) 26.50	Orig KB Elev (ft) 3,994.90	Tubing Head Elevation (ft)

Wellbores

Wellbore Name OH	Parent Wellbore	SAP Well ID 34691	Kick Off Depth (ftKB)	Vertical Section Direction (°) 359.49
Actual Deviation Survey GYRO-MWD, Proposed? No	Definitive? Yes	Proposed? No	Proposed Deviation Survey	

Deviation Survey

Date 3/25/2014		Description GYRO-MWD			
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NSTie In (ft)	EW Tie In (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (*/100ft)	Survey Tool	Survey Company
3/25/2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	100.00	0.25	75.23	100.00	0.05	0.06	0.21	0.25	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	200.00	0.49	150.45	200.00	-0.27	-0.26	0.63	0.49	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	300.00	0.27	161.84	300.00	-0.86	-0.86	0.92	0.23	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	400.00	0.05	173.22	400.00	-1.13	-1.12	1.00	0.22	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	500.00	0.26	209.40	499.99	-1.37	-1.36	0.89	0.22	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	600.00	0.46	245.58	599.99	-1.73	-1.73	0.41	0.29	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	700.00	0.49	244.98	699.99	-2.07	-2.08	-0.34	0.03	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	800.00	0.52	246.39	799.99	-2.43	-2.44	-1.14	0.03	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	900.00	0.69	250.81	899.98	-2.80	-2.82	-2.13	0.18	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,000.00	0.85	257.23	999.97	-3.15	-3.18	-3.42	0.18	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,100.00	0.79	271.52	1,099.96	-3.28	-3.33	-4.83	0.21	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,200.00	0.73	285.80	1,199.95	-3.08	-3.13	-6.13	0.20	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,300.00	0.68	290.99	1,299.94	-2.68	-2.75	-7.30	0.08	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,400.00	0.64	296.19	1,399.94	-2.21	-2.29	-8.36	0.07	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,500.00	0.70	297.75	1,499.93	-1.67	-1.76	-9.40	0.06	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,600.00	0.76	299.31	1,599.92	-1.05	-1.15	-10.52	0.06	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,700.00	0.93	302.84	1,699.91	-0.28	-0.38	-11.78	0.18	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,800.00	1.11	306.36	1,799.90	0.75	0.63	-13.24	0.19	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,900.00	0.84	312.25	1,899.88	1.83	1.70	-14.56	0.29	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,000.00	0.57	318.13	1,999.87	2.70	2.56	-15.44	0.28	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,100.00	0.47	330.25	2,099.87	3.43	3.29	-15.97	0.15	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,200.00	0.37	342.36	2,199.87	4.10	3.95	-16.27	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,300.00	0.35	318	2,299.87	4.71	4.56	-16.35	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,400.00	0.33	24.00	2,399.86	5.28	5.13	-16.22	0.12	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,500.00	0.28	49.30	2,499.86	5.70	5.55	-15.92	0.14	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,600.00	0.24	74.61	2,599.86	5.91	5.77	-15.53	0.12	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,700.00	0.36	68.75	2,699.86	6.07	5.94	-15.04	0.12	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,800.00	0.48	62.90	2,799.86	6.37	6.24	-14.37	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,900.00	1.01	55.87	2,899.85	7.05	6.93	-13.27	0.54	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,000.00	1.54	48.84	2,999.82	8.41	8.31	-11.53	0.55	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,100.00	1.52	47.33	3,099.79	10.18	10.09	-9.54	0.05	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,200.00	1.51	45.82	3,199.75	11.98	11.91	-7.62	0.04	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,300.00	1.39	43.65	3,299.72	13.76	13.70	-5.84	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,400.00	1.27	41.47	3,399.69	15.45	15.41	-4.27	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,500.00	1.14	39.79	3,499.67	17.03	17.01	-2.90	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,600.00	1.01	38.12	3,599.65	18.48	18.46	-1.72	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,700.00	1.12	26.14	3,699.64	20.04	20.04	-0.74	0.25	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,800.00	1.24	14.15	3,799.62	21.96	21.96	-0.05	0.27	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,900.00	1.26	359.23	3,899.59	24.11	24.11	0.20	0.33	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,000.00	1.27	344.31	3,999.57	26.28	26.28	-0.11	0.33	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,100.00	1.21	343.47	4,099.54	28.36	28.36	-0.71	0.06	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,200.00	1.15	342.63	4,199.52	30.34	30.33	-1.31	0.06	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,300.00	1.21	334.97	4,299.50	32.26	32.24	-2.06	0.17	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,400.00	1.27	327.31	4,399.48	34.16	34.13	-3.10	0.18	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,500.00	1.31	326.22	4,499.45	36.05	36.01	-4.34	0.05	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,600.00	1.35	325.13	4,599.43	37.98	37.93	-5.65	0.05	GYRO	VAUHG N ENERGY SERVICES



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			KB - GL (ft) 26.50	Orig KB Elev (ft) 3,994.90
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
3/25/2014	4,700.00	1.38	314.26	4,699.40	39.80	39.74	-7.18	0.26	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,800.00	1.41	303.38	4,799.37	41.33	41.25	-9.07	0.27	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,900.00	1.36	306.17	4,899.34	42.73	42.63	-11.06	0.08	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,000.00	1.30	308.95	4,999.31	44.16	44.04	-12.90	0.09	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,100.00	1.31	314.34	5,099.29	45.68	45.56	-14.60	0.12	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,200.00	1.32	319.73	5,199.26	47.38	47.23	-16.16	0.12	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,300.00	1.24	313.81	5,299.24	49.02	48.86	-17.68	0.15	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,400.00	1.17	307.89	5,399.21	50.41	50.24	-19.27	0.14	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,500.00	1.11	311.70	5,499.19	51.69	51.51	-20.80	0.10	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,600.00	1.05	315.50	5,599.18	53.00	52.81	-22.16	0.09	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,700.00	1.01	316.33	5,699.16	54.30	54.10	-23.42	0.04	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,800.00	0.97	317.17	5,799.15	55.57	55.36	-24.60	0.04	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,900.00	0.96	316.27	5,899.13	56.81	56.58	-25.75	0.02	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,000.00	0.94	315.37	5,999.12	58.01	57.77	-26.91	0.02	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,100.00	0.97	320.88	6,099.10	59.26	59.01	-28.02	0.10	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,200.00	0.99	326.39	6,199.09	60.64	60.39	-29.03	0.10	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,300.00	0.96	327.64	6,299.07	62.08	61.82	-29.96	0.04	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,400.00	0.92	328.90	6,399.06	63.48	63.21	-30.82	0.05	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,500.00	0.95	340.47	6,499.05	64.96	64.68	-31.51	0.19	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,600.00	0.99	352.04	6,599.03	66.60	66.32	-31.91	0.20	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,700.00	1.06	353.96	6,699.02	68.37	68.09	-32.13	0.08	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,800.00	1.13	355.88	6,799.00	70.28	69.99	-32.30	0.08	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,900.00	1.25	1.14	6,898.98	72.35	72.07	-32.34	0.16	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,000.00	1.37	3.40	6,998.95	74.64	74.35	-32.25	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,100.00	1.45	6.79	7,098.92	77.08	76.80	-32.03	0.12	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,200.00	1.53	7.19	7,198.89	79.66	79.38	-31.71	0.08	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,300.00	1.48	356.63	7,298.85	82.27	82.00	-31.62	0.28	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,400.00	1.43	346.08	7,398.82	84.78	84.50	-32.00	0.27	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,500.00	1.58	343.14	7,498.79	87.32	87.03	-32.70	0.17	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,600.00	1.73	340.20	7,598.74	90.06	89.77	-33.61	0.17	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,700.00	1.82	338.27	7,698.70	92.97	92.66	-34.71	0.11	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,800.00	1.89	333.31	7,798.64	95.93	95.61	-36.04	0.18	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,900.00	1.95	339.16	7,898.59	99.00	98.67	-37.38	0.20	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,000.00	1.94	350.84	7,998.53	102.27	101.94	-38.26	0.40	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,100.00	1.95	354.13	8,098.47	105.64	105.30	-38.70	0.11	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,200.00	2.06	344.96	8,198.41	109.07	108.73	-39.34	0.34	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,300.00	2.40	342.80	8,298.34	112.82	112.46	-40.43	0.35	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,400.00	4.04	338.74	8,398.18	118.12	117.75	-42.33	1.65	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,500.00	6.02	344.12	8,497.79	126.47	126.07	-45.04	2.03	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,600.00	6.06	337.17	8,597.23	136.41	135.98	-48.52	0.73	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,700.00	5.28	342.05	8,696.74	145.68	145.23	-51.99	0.92	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,800.00	5.22	345.22	8,796.32	154.48	154.00	-54.57	0.30	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,900.00	5.73	342.42	8,895.87	163.66	163.16	-57.23	0.58	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	9,000.00	6.03	347.52	8,995.34	173.57	173.05	-59.88	0.60	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	9,100.00	6.28	348.58	9,094.76	184.08	183.54	-62.09	0.27	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	9,155.00	6.75	346.31	9,149.41	190.18	189.62	-63.45	0.97	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	9,242.00	6.77	332.21	9,235.81	199.72	199.13	-67.06	1.90	MWD	PATHFINDER ENERGY SE...
3/25/2014	9,336.00	6.42	328.96	9,329.19	209.17	208.53	-72.35	0.54	MWD	PATHFINDER ENERGY SE...
3/25/2014	9,399.00	9.58	330.80	9,391.57	216.80	216.13	-76.72	5.03	MWD	PATHFINDER ENERGY SE...
3/25/2014	9,431.00	13.01	337.04	9,422.94	222.47	221.77	-79.43	11.36	MWD	PATHFINDER ENERGY SE...
3/25/2014	9,463.00	16.09	343.26	9,453.92	230.06	229.34	-82.11	10.78	MWD	PATHFINDER ENERGY SE...
3/26/2014	9,493.00	19.43	348.70	9,482.48	238.96	238.21	-84.29	12.42	MWD	PATHFINDER ENERGY SE...
3/26/2014	9,525.00	22.51	354.78	9,512.37	250.29	249.54	-85.89	11.77	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,557.00	25.59	359.67	9,541.59	263.31	262.55	-86.49	11.46	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,588.00	28.84	1.95	9,569.15	277.48	276.72	-86.27	11.01	MWD	PATHFINDER ENERGY SE...



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Survey Data

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3/28/2014	9,620.00	32.10	2.64	9,596.73	293.69	292.94	-85.62	10.25	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,651.00	35.53	2.60	9,622.48	310.91	310.17	-84.83	11.06	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,683.00	38.69	1.72	9,648.00	330.19	329.46	-84.11	10.01	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,714.00	42.12	1.30	9,671.60	350.27	349.54	-83.58	11.10	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,746.00	45.55	1.28	9,694.68	372.42	371.70	-83.08	10.72	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,777.00	48.72	1.76	9,715.77	395.12	394.41	-82.47	10.29	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,808.00	51.79	2.48	9,735.58	418.93	418.22	-81.59	10.06	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,840.00	55.05	2.60	9,754.65	444.59	443.89	-80.45	10.19	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,871.00	58.12	1.90	9,771.72	470.43	469.74	-79.44	10.08	MWD	PATHFINDER ENERGY SE...
3/29/2014	9,903.00	61.03	1.17	9,787.92	498.00	497.32	-78.70	9.30	MWD	PATHFINDER ENERGY SE...
3/29/2014	9,934.00	64.10	0.79	9,802.21	525.51	524.83	-78.23	9.96	MWD	PATHFINDER ENERGY SE...
3/29/2014	9,966.00	66.92	0.54	9,815.47	554.62	553.95	-77.89	8.84	MWD	PATHFINDER ENERGY SE...
3/29/2014	9,997.00	69.56	0.08	9,826.96	583.40	582.73	-77.74	8.63	MWD	PATHFINDER ENERGY SE...
3/29/2014	10,029.00	73.25	0.32	9,837.16	613.72	613.06	-77.63	11.55	MWD	PATHFINDER ENERGY SE...
3/29/2014	10,060.00	77.03	0.95	9,845.11	643.68	643.01	-77.30	12.35	MWD	PATHFINDER ENERGY SE...
3/29/2014	10,092.00	80.11	1.09	9,851.45	675.03	674.37	-76.74	9.63	MWD	PATHFINDER ENERGY SE...
3/29/2014	10,123.00	83.27	1.39	9,855.93	705.68	705.03	-76.08	10.24	MWD	PATHFINDER ENERGY SE...
3/30/2014	10,155.00	86.09	1.65	9,858.90	737.52	736.88	-75.23	8.85	MWD	PATHFINDER ENERGY SE...
3/30/2014	10,187.00	89.16	1.74	9,860.23	769.47	768.84	-74.29	9.60	MWD	PATHFINDER ENERGY SE...
3/31/2014	10,218.00	91.98	1.07	9,859.92	800.44	799.82	-73.53	9.35	MWD	PATHFINDER ENERGY SE...
3/31/2014	10,281.00	94.09	0.63	9,856.58	863.33	862.72	-72.59	3.42	MWD	PATHFINDER ENERGY SE...
3/31/2014	10,375.00	94.88	0.86	9,849.23	957.02	956.43	-71.37	0.88	MWD	PATHFINDER ENERGY SE...
4/1/2014	10,565.00	94.44	1.01	9,833.79	1,146.33	1,145.77	-68.28	0.24	MWD	PATHFINDER ENERGY SE...
4/1/2014	10,659.00	94.26	1.02	9,826.67	1,240.03	1,239.49	-66.62	0.19	MWD	PATHFINDER ENERGY SE...
4/2/2014	10,673.00	94.18	1.27	9,825.63	1,253.99	1,253.45	-66.35	1.87	MWD	PATHFINDER ENERGY SE...
4/1/2014	10,753.00	95.06	1.62	9,819.19	1,333.68	1,333.16	-64.33	1.18	MWD	PATHFINDER ENERGY SE...
4/2/2014	10,848.00	94.00	1.33	9,811.69	1,428.32	1,427.83	-61.90	1.16	MWD	PATHFINDER ENERGY SE...
4/2/2014	11,038.00	94.53	1.24	9,797.56	1,617.70	1,617.26	-57.65	0.28	MWD	PATHFINDER ENERGY SE...
4/5/2014	11,152.00	94.35	359.87	9,788.73	1,731.34	1,730.91	-56.55	1.21	MWD	PATHFINDER ENERGY SE...
4/5/2014	11,247.00	93.83	359.87	9,781.96	1,826.10	1,825.66	-56.76	0.55	MWD	PATHFINDER ENERGY SE...
4/5/2014	11,342.00	93.21	359.87	9,776.12	1,920.91	1,920.48	-56.98	0.65	MWD	PATHFINDER ENERGY SE...
4/5/2014	11,436.00	93.74	359.87	9,770.43	2,014.74	2,014.31	-57.19	0.56	MWD	PATHFINDER ENERGY SE...
4/6/2014	11,531.00	94.26	359.60	9,763.80	2,109.51	2,109.08	-57.63	0.62	MWD	PATHFINDER ENERGY SE...
4/6/2014	11,626.00	93.47	359.34	9,757.40	2,204.29	2,203.86	-58.51	0.88	MWD	PATHFINDER ENERGY SE...
4/6/2014	11,722.00	93.03	358.99	9,751.95	2,300.13	2,299.69	-59.90	0.59	MWD	PATHFINDER ENERGY SE...
4/6/2014	11,816.00	93.30	359.08	9,746.76	2,393.99	2,393.53	-61.48	0.30	MWD	PATHFINDER ENERGY SE...
4/6/2014	11,911.00	93.91	359.16	9,740.79	2,488.80	2,488.33	-62.94	0.65	MWD	PATHFINDER ENERGY SE...
4/6/2014	12,006.00	94.53	359.08	9,733.80	2,583.54	2,583.07	-64.39	0.66	MWD	PATHFINDER ENERGY SE...
4/6/2014	12,101.00	94.35	359.16	9,726.44	2,678.25	2,677.77	-65.85	0.21	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,196.00	94.00	359.16	9,719.53	2,773.00	2,772.51	-67.24	0.37	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,290.00	93.21	359.78	9,713.62	2,866.81	2,866.32	-68.11	1.07	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,385.00	93.03	359.96	9,708.45	2,961.67	2,961.17	-68.32	0.27	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,480.00	93.56	359.69	9,702.99	3,056.51	3,056.02	-68.61	0.63	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,575.00	94.18	359.69	9,696.58	3,151.29	3,150.80	-69.12	0.65	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,669.00	94.35	359.43	9,689.58	3,245.03	3,244.53	-69.84	0.33	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,764.00	94.18	359.52	9,682.52	3,339.76	3,339.27	-70.71	0.20	MWD	PATHFINDER ENERGY SE...
4/8/2014	12,858.00	94.26	0.31	9,675.60	3,433.51	3,433.01	-70.85	0.84	MWD	PATHFINDER ENERGY SE...
4/8/2014	12,953.00	94.00	0.75	9,668.76	3,528.24	3,527.76	-69.97	0.54	MWD	PATHFINDER ENERGY SE...
4/8/2014	13,048.00	93.74	1.36	9,662.35	3,622.99	3,622.53	-68.23	0.70	MWD	PATHFINDER ENERGY SE...
4/9/2014	13,145.00	93.47	1.63	9,656.25	3,719.74	3,719.30	-65.70	0.39	MWD	PATHFINDER ENERGY SE...
4/9/2014	13,239.00	93.12	2.09	9,650.85	3,813.50	3,813.10	-62.66	0.61	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,334.00	93.30	2.00	9,645.53	3,908.26	3,907.89	-59.27	0.21	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,429.00	93.21	1.45	9,640.13	4,003.03	4,002.69	-56.42	0.59	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,523.00	92.42	1.52	9,635.52	4,096.86	4,096.55	-53.98	0.84	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,617.00	92.51	1.09	9,631.47	4,190.73	4,190.43	-51.84	0.47	MWD	PATHFINDER ENERGY SE...



Directional Survey

District DELAWARE BASIN	County LEA	Field Name MESCALERO ESCARPE	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location SEC24 T18S R34E	API/UWI 3002541595	Latitude (°) 32° 43' 35.724" N	Longitude (°) 103° 30' 42.128" W	Ground Elev... 3,968.40
			KB - GL (ft) 26.50	Orig KB Elev (ft) 3,994.90
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
4/10/2014	13,712.00	94.18	0.44	9,625.93	4,285.54	4,285.26	-50.58	1.89	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,806.00	94.70	0.30	9,618.65	4,379.25	4,378.98	-49.97	0.57	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,901.00	94.35	359.69	9,611.16	4,473.95	4,473.68	-49.98	0.74	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,995.00	94.00	359.31	9,604.32	4,567.70	4,567.43	-50.80	0.55	MWD	PATHFINDER ENERGY SE...
4/11/2014	14,090.00	94.26	359.20	9,597.47	4,662.45	4,662.17	-52.03	0.30	MWD	PATHFINDER ENERGY SE...
4/11/2014	14,135.00	93.74	359.48	9,594.33	4,707.34	4,707.06	-52.55	1.31	MWD	PATHFINDER ENERGY SE...
4/11/2014	14,189.00	93.74	359.48	9,590.81	4,761.22	4,760.94	-53.04	0.00	BIT	PATHFINDER ENERGY SE...



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Directional Survey

District DELAWARE BASIN	County LEA	Field Name MESCALERO ESCARPE	Project Group DELAWARE BASIN REG	State/Province NM			
Surface Legal Location SEC24 T18S R34E	API/UWI 3002541595	Latitude (°) 32° 43' 35.724" N	Longitude (°) 103° 30' 42.128" W	Ground Elev... 3,968.40	KB - GL (ft) 26.50	Orig KB Elev (ft) 3,994.90	Tubing Head Elevation (ft)

Wellbores

Wellbore Name OH	Parent Wellbore	SAP Well ID 34691	Kick Off Depth (ftKB)	Vertical Section Direction (°) 359.49
Actual Deviation Survey GYRO-MWD, Proposed? No	Definitive? Yes	Proposed? No	Proposed Deviation Survey	

Deviation Survey

Date 3/25/2014		Description GYRO-MWD			
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NSTie In (ft)	EW Tie In (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
3/25/2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	100.00	0.25	75.23	100.00	0.05	0.06	0.21	0.25	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	200.00	0.49	150.45	200.00	-0.27	-0.26	0.63	0.49	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	300.00	0.27	161.84	300.00	-0.86	-0.86	0.92	0.23	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	400.00	0.05	173.22	400.00	-1.13	-1.12	1.00	0.22	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	500.00	0.26	209.40	499.99	-1.37	-1.36	0.89	0.22	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	600.00	0.46	245.58	599.99	-1.73	-1.73	0.41	0.29	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	700.00	0.49	244.98	699.99	-2.07	-2.08	-0.34	0.03	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	800.00	0.52	246.39	799.99	-2.43	-2.44	-1.14	0.03	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	900.00	0.69	250.81	899.98	-2.80	-2.82	-2.13	0.18	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,000.00	0.85	257.23	999.97	-3.15	-3.18	-3.42	0.18	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,100.00	0.79	271.52	1,099.96	-3.28	-3.33	-4.83	0.21	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,200.00	0.73	285.80	1,199.95	-3.08	-3.13	-6.13	0.20	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,300.00	0.68	290.99	1,299.94	-2.68	-2.75	-7.30	0.08	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,400.00	0.64	296.19	1,399.94	-2.21	-2.29	-8.36	0.07	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,500.00	0.70	297.75	1,499.93	-1.67	-1.76	-9.40	0.06	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,600.00	0.76	299.31	1,599.92	-1.05	-1.15	-10.52	0.06	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,700.00	0.93	302.84	1,699.91	-0.28	-0.38	-11.78	0.18	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,800.00	1.11	306.36	1,799.90	0.75	0.63	-13.24	0.19	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	1,900.00	0.84	312.25	1,899.88	1.83	1.70	-14.56	0.29	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,000.00	0.57	318.13	1,999.87	2.70	2.56	-15.44	0.28	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,100.00	0.47	330.25	2,099.87	3.43	3.29	-15.97	0.15	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,200.00	0.37	342.36	2,199.87	4.10	3.95	-16.27	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,300.00	0.35	318	2,299.87	4.71	4.56	-16.35	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,400.00	0.33	24.00	2,399.86	5.28	5.13	-16.22	0.12	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,500.00	0.28	49.30	2,499.86	5.70	5.55	-15.92	0.14	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,600.00	0.24	74.61	2,599.86	5.91	5.77	-15.53	0.12	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,700.00	0.36	68.75	2,699.86	6.07	5.94	-15.04	0.12	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,800.00	0.48	62.90	2,799.86	6.37	6.24	-14.37	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	2,900.00	1.01	55.87	2,899.85	7.05	6.93	-13.27	0.54	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,000.00	1.54	48.84	2,999.82	8.41	8.31	-11.53	0.55	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,100.00	1.52	47.33	3,099.79	10.18	10.09	-9.54	0.05	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,200.00	1.51	45.82	3,199.75	11.98	11.91	-7.62	0.04	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,300.00	1.39	43.65	3,299.72	13.76	13.70	-5.84	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,400.00	1.27	41.47	3,399.69	15.45	15.41	-4.27	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,500.00	1.14	39.79	3,499.67	17.03	17.01	-2.90	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,600.00	1.01	38.12	3,599.65	18.48	18.46	-1.72	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,700.00	1.12	26.14	3,699.64	20.04	20.04	-0.74	0.25	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,800.00	1.24	14.15	3,799.62	21.96	21.96	-0.05	0.27	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	3,900.00	1.26	359.23	3,899.59	24.11	24.11	0.20	0.33	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,000.00	1.27	344.31	3,999.57	26.28	26.28	-0.11	0.33	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,100.00	1.21	343.47	4,099.54	28.36	28.36	-0.71	0.06	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,200.00	1.15	342.63	4,199.52	30.34	30.33	-1.31	0.06	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,300.00	1.21	334.97	4,299.50	32.26	32.24	-2.06	0.17	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,400.00	1.27	327.31	4,399.48	34.16	34.13	-3.10	0.18	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,500.00	1.31	326.22	4,499.45	36.05	36.01	-4.34	0.05	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,600.00	1.35	325.13	4,599.43	37.98	37.93	-5.65	0.05	GYRO	VAUHG N ENERGY SERVICES



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Directional Survey

District DELAWARE BASIN	County LEA	Field Name MESCALERO ESCARPE	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location SEC24 T18S R34E	API/UWI 3002541595	Latitude (") 32° 43' 35.724" N	Longitude (") 103° 30' 42.128" W	Ground Elev... 3,968.40
			KB - GL (ft) 26.50	Orig KB Elev (ft) 3,994.90
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
3/25/2014	4,700.00	1.38	314.26	4,699.40	39.80	39.74	-7.18	0.26	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,800.00	1.41	303.38	4,799.37	41.33	41.25	-9.07	0.27	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	4,900.00	1.36	306.17	4,899.34	42.73	42.63	-11.06	0.08	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,000.00	1.30	308.95	4,999.31	44.16	44.04	-12.90	0.09	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,100.00	1.31	314.34	5,099.29	45.68	45.56	-14.60	0.12	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,200.00	1.32	319.73	5,199.26	47.38	47.23	-16.16	0.12	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,300.00	1.24	313.81	5,299.24	49.02	48.86	-17.68	0.15	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,400.00	1.17	307.89	5,399.21	50.41	50.24	-19.27	0.14	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,500.00	1.11	311.70	5,499.19	51.69	51.51	-20.80	0.10	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,600.00	1.05	315.50	5,599.18	53.00	52.81	-22.16	0.09	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,700.00	1.01	316.33	5,699.16	54.30	54.10	-23.42	0.04	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,800.00	0.97	317.17	5,799.15	55.57	55.36	-24.60	0.04	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	5,900.00	0.96	316.27	5,899.13	56.81	56.58	-25.75	0.02	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,000.00	0.94	315.37	5,999.12	58.01	57.77	-26.91	0.02	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,100.00	0.97	320.88	6,099.10	59.26	59.01	-28.02	0.10	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,200.00	0.99	326.39	6,199.09	60.64	60.39	-29.03	0.10	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,300.00	0.96	327.64	6,299.07	62.08	61.82	-29.96	0.04	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,400.00	0.92	328.90	6,399.06	63.48	63.21	-30.82	0.05	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,500.00	0.95	340.47	6,499.05	64.96	64.68	-31.51	0.19	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,600.00	0.99	352.04	6,599.03	66.60	66.32	-31.91	0.20	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,700.00	1.06	353.96	6,699.02	68.37	68.09	-32.13	0.08	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,800.00	1.13	355.88	6,799.00	70.28	69.99	-32.30	0.08	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	6,900.00	1.25	1.14	6,898.98	72.35	72.07	-32.34	0.16	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,000.00	1.37	3.40	6,998.95	74.64	74.35	-32.25	0.13	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,100.00	1.45	6.79	7,098.92	77.08	76.80	-32.03	0.12	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,200.00	1.53	7.19	7,198.89	79.66	79.38	-31.71	0.08	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,300.00	1.48	356.63	7,298.85	82.27	82.00	-31.62	0.28	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,400.00	1.43	346.08	7,398.82	84.78	84.50	-32.00	0.27	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,500.00	1.58	343.14	7,498.79	87.32	87.03	-32.70	0.17	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,600.00	1.73	340.20	7,598.74	90.06	89.77	-33.61	0.17	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,700.00	1.82	338.27	7,698.70	92.97	92.66	-34.71	0.11	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,800.00	1.89	333.31	7,798.64	95.93	95.61	-36.04	0.18	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	7,900.00	1.95	339.16	7,898.59	99.00	98.67	-37.38	0.20	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,000.00	1.94	350.84	7,998.53	102.27	101.94	-38.26	0.40	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,100.00	1.95	354.13	8,098.47	105.64	105.30	-38.70	0.11	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,200.00	2.06	344.96	8,198.41	109.07	108.73	-39.34	0.34	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,300.00	2.40	342.80	8,298.34	112.82	112.46	-40.43	0.35	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,400.00	4.04	338.74	8,398.18	118.12	117.75	-42.33	1.65	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,500.00	6.02	344.12	8,497.79	126.47	126.07	-45.04	2.03	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,600.00	6.06	337.17	8,597.23	136.41	135.98	-48.52	0.73	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,700.00	5.28	342.05	8,696.74	145.68	145.23	-51.99	0.92	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,800.00	5.22	345.22	8,796.32	154.48	154.00	-54.57	0.30	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	8,900.00	5.73	342.42	8,895.87	163.66	163.16	-57.23	0.58	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	9,000.00	6.03	347.52	8,995.34	173.57	173.05	-59.88	0.60	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	9,100.00	6.28	348.58	9,094.76	184.08	183.54	-62.09	0.27	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	9,155.00	6.75	346.31	9,149.41	190.18	189.62	-63.45	0.97	GYRO	VAUHG N ENERGY SERVICES
3/25/2014	9,242.00	6.77	332.21	9,235.81	199.72	199.13	-67.06	1.90	MWD	PATHFINDER ENERGY SE...
3/25/2014	9,336.00	6.42	328.96	9,329.19	209.17	208.53	-72.35	0.54	MWD	PATHFINDER ENERGY SE...
3/25/2014	9,399.00	9.58	330.80	9,391.57	216.80	216.13	-76.72	5.03	MWD	PATHFINDER ENERGY SE...
3/25/2014	9,431.00	13.01	337.04	9,422.94	222.47	221.77	-79.43	11.36	MWD	PATHFINDER ENERGY SE...
3/25/2014	9,463.00	16.09	343.26	9,453.92	230.06	229.34	-82.11	10.78	MWD	PATHFINDER ENERGY SE...
3/26/2014	9,493.00	19.43	348.70	9,482.48	238.96	238.21	-84.29	12.42	MWD	PATHFINDER ENERGY SE...
3/26/2014	9,525.00	22.51	354.78	9,512.37	250.29	249.54	-85.89	11.77	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,557.00	25.59	359.67	9,541.59	263.31	262.55	-86.49	11.46	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,588.00	28.84	1.95	9,569.15	277.48	276.72	-86.27	11.01	MWD	PATHFINDER ENERGY SE...



IRONHOUSE 24 STATE COM 2H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County LEA	Field Name MESCALERO ESCARPE	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location SEC24 T18S R34E	API/UWI 3002541595	Latitude (°) 32° 43' 35.724" N	Longitude (°) 103° 30' 42.128" W	Ground Elev... 3,968.40
			KB - GL (ft) 26.50	Orig KB Elev (ft) 3,994.90
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
3/28/2014	9,620.00	32.10	2.64	9,596.73	293.69	292.94	-85.62	10.25	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,651.00	35.53	2.60	9,622.48	310.91	310.17	-84.83	11.06	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,683.00	38.69	1.72	9,648.00	330.19	329.46	-84.11	10.01	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,714.00	42.12	1.30	9,671.60	350.27	349.54	-83.58	11.10	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,746.00	45.55	1.28	9,694.68	372.42	371.70	-83.08	10.72	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,777.00	48.72	1.76	9,715.77	395.12	394.41	-82.47	10.29	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,808.00	51.79	2.48	9,735.58	418.93	418.22	-81.59	10.06	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,840.00	55.05	2.60	9,754.65	444.59	443.89	-80.45	10.19	MWD	PATHFINDER ENERGY SE...
3/28/2014	9,871.00	58.12	1.90	9,771.72	470.43	469.74	-79.44	10.08	MWD	PATHFINDER ENERGY SE...
3/29/2014	9,903.00	61.03	1.17	9,787.92	498.00	497.32	-78.70	9.30	MWD	PATHFINDER ENERGY SE...
3/29/2014	9,934.00	64.10	0.79	9,802.21	525.51	524.83	-78.23	9.96	MWD	PATHFINDER ENERGY SE...
3/29/2014	9,966.00	66.92	0.54	9,815.47	554.62	553.95	-77.89	8.84	MWD	PATHFINDER ENERGY SE...
3/29/2014	9,997.00	69.56	0.08	9,826.96	583.40	582.73	-77.74	8.63	MWD	PATHFINDER ENERGY SE...
3/29/2014	10,029.00	73.25	0.32	9,837.16	613.72	613.06	-77.63	11.55	MWD	PATHFINDER ENERGY SE...
3/29/2014	10,060.00	77.03	0.95	9,845.11	643.68	643.01	-77.30	12.35	MWD	PATHFINDER ENERGY SE...
3/29/2014	10,092.00	80.11	1.09	9,851.45	675.03	674.37	-76.74	9.63	MWD	PATHFINDER ENERGY SE...
3/29/2014	10,123.00	83.27	1.39	9,855.93	705.68	705.03	-76.08	10.24	MWD	PATHFINDER ENERGY SE...
3/30/2014	10,155.00	86.09	1.65	9,858.90	737.52	736.88	-75.23	8.85	MWD	PATHFINDER ENERGY SE...
3/30/2014	10,187.00	89.16	1.74	9,860.23	769.47	768.84	-74.29	9.60	MWD	PATHFINDER ENERGY SE...
3/31/2014	10,218.00	91.98	1.07	9,859.92	800.44	799.82	-73.53	9.35	MWD	PATHFINDER ENERGY SE...
3/31/2014	10,281.00	94.09	0.63	9,856.58	863.33	862.72	-72.59	3.42	MWD	PATHFINDER ENERGY SE...
3/31/2014	10,375.00	94.88	0.86	9,849.23	957.02	956.43	-71.37	0.88	MWD	PATHFINDER ENERGY SE...
4/1/2014	10,565.00	94.44	1.01	9,833.79	1,146.33	1,145.77	-68.28	0.24	MWD	PATHFINDER ENERGY SE...
4/1/2014	10,659.00	94.26	1.02	9,826.67	1,240.03	1,239.49	-66.62	0.19	MWD	PATHFINDER ENERGY SE...
4/2/2014	10,673.00	94.18	1.27	9,825.63	1,253.99	1,253.45	-66.35	1.87	MWD	PATHFINDER ENERGY SE...
4/1/2014	10,753.00	95.06	1.62	9,819.19	1,333.68	1,333.16	-64.33	1.18	MWD	PATHFINDER ENERGY SE...
4/2/2014	10,848.00	94.00	1.33	9,811.69	1,428.32	1,427.83	-61.90	1.16	MWD	PATHFINDER ENERGY SE...
4/2/2014	11,038.00	94.53	1.24	9,797.56	1,617.70	1,617.26	-57.65	0.28	MWD	PATHFINDER ENERGY SE...
4/5/2014	11,152.00	94.35	359.87	9,788.73	1,731.34	1,730.91	-56.55	1.21	MWD	PATHFINDER ENERGY SE...
4/5/2014	11,247.00	93.83	359.87	9,781.96	1,826.10	1,825.66	-56.76	0.55	MWD	PATHFINDER ENERGY SE...
4/5/2014	11,342.00	93.21	359.87	9,776.12	1,920.91	1,920.48	-56.98	0.65	MWD	PATHFINDER ENERGY SE...
4/5/2014	11,436.00	93.74	359.87	9,770.43	2,014.74	2,014.31	-57.19	0.56	MWD	PATHFINDER ENERGY SE...
4/6/2014	11,531.00	94.26	359.60	9,763.80	2,109.51	2,109.08	-57.63	0.62	MWD	PATHFINDER ENERGY SE...
4/6/2014	11,626.00	93.47	359.34	9,757.40	2,204.29	2,203.86	-58.51	0.88	MWD	PATHFINDER ENERGY SE...
4/6/2014	11,722.00	93.03	358.99	9,751.95	2,300.13	2,299.69	-59.90	0.59	MWD	PATHFINDER ENERGY SE...
4/6/2014	11,816.00	93.30	359.08	9,746.76	2,393.99	2,393.53	-61.48	0.30	MWD	PATHFINDER ENERGY SE...
4/6/2014	11,911.00	93.91	359.16	9,740.79	2,488.80	2,488.33	-62.94	0.65	MWD	PATHFINDER ENERGY SE...
4/6/2014	12,006.00	94.53	359.08	9,733.80	2,583.54	2,583.07	-64.39	0.66	MWD	PATHFINDER ENERGY SE...
4/6/2014	12,101.00	94.35	359.16	9,726.44	2,678.25	2,677.77	-65.85	0.21	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,196.00	94.00	359.16	9,719.53	2,773.00	2,772.51	-67.24	0.37	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,290.00	93.21	359.78	9,713.62	2,866.81	2,866.32	-68.11	1.07	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,385.00	93.03	359.96	9,708.45	2,961.67	2,961.17	-68.32	0.27	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,480.00	93.56	359.69	9,702.99	3,056.51	3,056.02	-68.61	0.63	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,575.00	94.18	359.69	9,696.58	3,151.29	3,150.80	-69.12	0.65	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,669.00	94.35	359.43	9,689.58	3,245.03	3,244.53	-69.84	0.33	MWD	PATHFINDER ENERGY SE...
4/7/2014	12,764.00	94.18	359.52	9,682.52	3,339.76	3,339.27	-70.71	0.20	MWD	PATHFINDER ENERGY SE...
4/8/2014	12,858.00	94.26	0.31	9,675.60	3,433.51	3,433.01	-70.85	0.84	MWD	PATHFINDER ENERGY SE...
4/8/2014	12,953.00	94.00	0.75	9,668.76	3,528.24	3,527.76	-69.97	0.54	MWD	PATHFINDER ENERGY SE...
4/8/2014	13,048.00	93.74	1.36	9,662.35	3,622.99	3,622.53	-68.23	0.70	MWD	PATHFINDER ENERGY SE...
4/9/2014	13,145.00	93.47	1.63	9,656.25	3,719.74	3,719.30	-65.70	0.39	MWD	PATHFINDER ENERGY SE...
4/9/2014	13,239.00	93.12	2.09	9,650.85	3,813.50	3,813.10	-62.66	0.61	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,334.00	93.30	2.00	9,645.53	3,908.26	3,907.89	-59.27	0.21	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,429.00	93.21	1.45	9,640.13	4,003.03	4,002.69	-56.42	0.59	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,523.00	92.42	1.52	9,635.52	4,096.86	4,096.55	-53.98	0.84	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,617.00	92.51	1.09	9,631.47	4,190.73	4,190.43	-51.84	0.47	MWD	PATHFINDER ENERGY SE...



Directional Survey

District DELAWARE BASIN	County LEA	Field Name MESCALERO ESCARPE	Project Group DELAWARE BASIN REG	State/Province NM			
Surface Legal Location SEC24 T18S R34E	API/UWI 3002541595	Latitude (°) 32° 43' 35.724" N	Longitude (°) 103° 30' 42.128" W	Ground Elev... 3,968.40	KB - GL (ft) 26.50	Orig KB Elev (ft) 3,994.90	Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
4/10/2014	13,712.00	94.18	0.44	9,625.93	4,285.54	4,285.26	-50.58	1.89	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,806.00	94.70	0.30	9,618.65	4,379.25	4,378.98	-49.97	0.57	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,901.00	94.35	359.69	9,611.16	4,473.95	4,473.68	-49.98	0.74	MWD	PATHFINDER ENERGY SE...
4/10/2014	13,995.00	94.00	359.31	9,604.32	4,567.70	4,567.43	-50.80	0.55	MWD	PATHFINDER ENERGY SE...
4/11/2014	14,090.00	94.26	359.20	9,597.47	4,662.45	4,662.17	-52.03	0.30	MWD	PATHFINDER ENERGY SE...
4/11/2014	14,135.00	93.74	359.48	9,594.33	4,707.34	4,707.06	-52.55	1.31	MWD	PATHFINDER ENERGY SE...
4/11/2014	14,189.00	93.74	359.48	9,590.81	4,761.22	4,760.94	-53.04	0.00	BIT	PATHFINDER ENERGY SE...