

Results of Directional Survey

30-025-35179

TRILOGY OPERATING INC
EMERALD # 2 Sidetrack 01

	MD	N/S	E/W	VD
		0.00	0.00	0
TOP PERFS/OH		#DIV/0!	#DIV/0!	#DIV/0!
		0.00	0.00	0.00
		0.00	0.00	0
BOT PERFS/OH		#DIV/0!	#DIV/0!	#DIV/0!
		0.00	0.00	0.00

NEXT TO LAST	7476	510.86	-1.80	7071.29
LAST READING	7507	541.84	-2.16	7072.38
TD	7507	541.84	-2.16	7072.38

Surface Location	400	FS	2310	FE
Projected BHL	942	FS	2312	FE
Location of				
Top Perfs/OH	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Bottom Perfs/OH	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

SUMMARY of Subsurface Locations

Surface Location	O-24-19S-38E	400	FS	2310	FE	Vert. Depth
Top Perfs/OH	O-24-19S-38E	#DIV/0!	#DIV/0!	#DIV/0!	#####	#DIV/0!
Bottom Perfs/OH	O-24-19S-38E	#DIV/0!	#DIV/0!	#DIV/0!	#####	#DIV/0!
Projected TD	O-24-19S-38E	942	FS	2312	FE	7072.38



Scientific Drilling Survey

Company: Stevens & Tull Date: 3/9/2005 Time: 16:19:06 Page: 1
Field: Nadine Co-ordinate(NE) Reference: Well: Emerald #2, Grid North
Site: Lea County, NM Vertical (TVD) Reference: SITE 0.0
Well: Emerald #2 Section (VS) Reference: Well (0.00N,0.00E,0.00Azi)
Wellpath: North Lateral Survey Calculation Method: Minimum Curvature Db: Sybase

Field: Nadine

Map System: US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Eastern Zone
Coordinate System: Well Centre
Geomagnetic Model: Wmm_2000

Site: Lea County, NM

Site Position: Northing: 601825.13 ft Latitude: 32 38 54.431 N
From: Map Easting: 919348.74 ft Longitude: 103 6 18.787 W
Position Uncertainty: 0.00 ft North Reference: Grid
Ground Level: 0.00 ft Grid Convergence: 0.66 deg

Well: Emerald #2 Slot Name:
Well Position: +N/-S -3209.40 ft Northing: 598615.73 ft Latitude: 32 38 22.525 N
+E/-W 1353.42 ft Easting: 920702.16 ft Longitude: 103 6 3.396 W
Position Uncertainty: 0.00 ft

Wellpath: North Lateral Drilled From: NorthEast Lateral
Current Datum: SITE Height 0.00 ft Tie-on Depth: 6860.00 ft
Magnetic Data: 12/30/2004 Above System Datum: Mean Sea Level
Field Strength: 49744 nT Declination: 8.29 deg
Vertical Section: Depth From (TVD) +N/-S Mag Dip Angle: 60.90 deg
ft ft ft deg
0.00 0.00 0.00 0.00

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsA deg	ClsD ft	Tool
0.00	0.00	359.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	TIE LINE
100.00	0.24	82.15	100.00	0.03	0.21	0.03	0.24	0.24	0.00	82.15	0.21	Keeper
200.00	0.03	85.83	200.00	0.06	0.44	0.06	0.21	-0.21	3.68	82.37	0.45	Keeper
300.00	0.02	136.11	300.00	0.05	0.48	0.05	0.02	-0.01	50.28	84.23	0.48	Keeper
400.00	0.23	268.81	400.00	0.03	0.29	0.03	0.24	0.21	132.70	83.78	0.29	Keeper
500.00	0.15	334.79	500.00	0.15	0.03	0.15	0.22	-0.08	65.98	13.22	0.15	Keeper
600.00	0.10	3.60	600.00	0.35	-0.02	0.35	0.08	-0.05	28.81	357.39	0.35	Keeper
700.00	0.17	14.09	700.00	0.58	0.03	0.58	0.07	0.07	10.49	2.52	0.58	Keeper
800.00	0.36	32.86	800.00	0.99	0.23	0.99	0.21	0.19	18.77	13.20	1.02	Keeper
900.00	0.26	91.44	900.00	1.25	0.63	1.25	0.32	-0.10	58.58	26.76	1.40	Keeper
1000.00	0.48	84.85	999.99	1.28	1.27	1.28	0.22	0.22	-6.59	44.85	1.81	Keeper
1100.00	0.36	70.00	1099.99	1.43	1.99	1.43	0.16	-0.12	-14.85	54.33	2.44	Keeper
1200.00	0.27	95.14	1199.99	1.51	2.52	1.51	0.16	-0.09	25.14	59.00	2.94	Keeper
1300.00	0.34	164.02	1299.99	1.21	2.83	1.21	0.35	0.07	68.88	66.94	3.08	Keeper
1400.00	0.56	195.38	1399.99	0.45	2.78	0.45	0.32	0.22	31.36	80.84	2.82	Keeper
1500.00	0.63	193.54	1499.98	-0.56	2.53	-0.56	0.07	0.07	-1.84	102.43	2.59	Keeper
1600.00	0.62	182.28	1599.97	-1.63	2.38	-1.63	0.12	-0.01	-11.26	124.49	2.88	Keeper
1700.00	0.60	175.67	1699.97	-2.69	2.39	-2.69	0.07	-0.02	-6.61	138.38	3.60	Keeper
1800.00	0.71	176.41	1799.96	-3.83	2.47	-3.83	0.11	0.11	0.74	147.20	4.56	Keeper
1900.00	0.81	179.24	1899.95	-5.16	2.52	-5.16	0.11	0.10	2.83	153.97	5.74	Keeper
2000.00	0.72	156.07	1999.94	-6.44	2.78	-6.44	0.32	-0.09	-23.17	156.62	7.02	Keeper
2100.00	0.60	137.65	2099.94	-7.40	3.39	-7.40	0.24	-0.12	-18.42	155.38	8.14	Keeper
2200.00	0.56	134.35	2199.93	-8.13	4.09	-8.13	0.05	-0.04	-3.30	153.27	9.10	Keeper
2300.00	0.48	151.27	2299.93	-8.84	4.64	-8.84	0.17	-0.08	16.92	152.28	9.99	Keeper
2400.00	0.56	151.35	2399.92	-9.64	5.08	-9.64	0.08	0.08	0.08	152.20	10.89	Keeper
2500.00	0.67	143.24	2499.92	-10.53	5.66	-10.53	0.14	0.11	-8.11	151.73	11.96	Keeper
2600.00	1.11	114.55	2599.91	-11.40	6.90	-11.40	0.61	0.44	-28.69	148.84	13.33	Keeper
2700.00	1.22	102.39	2699.89	-12.04	8.82	-12.04	0.27	0.11	-12.16	143.77	14.92	Keeper

SUR: 0-24-19s-38e, 400/S & 2310/E
BHL: 0-24-19s-38e, 942/S & 2312/E
API # 30-025-35179



Scientific Drilling Survey

Company: Stevens & Tull
Field: Nadine
Site: Lea County, NM
Well: Emerald #2
Wellpath: North Lateral

Date: 3/9/2005 Time: 16:19:06 Page: 2
Co-ordinate(NE) Reference: Well: Emerald #2, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,0.00Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsA deg	ClsD ft	Tool
2800.00	1.17	87.05	2799.86	-12.21	10.88	-12.21	0.32	-0.05	-15.34	138.31	16.35	Keeper
2900.00	1.07	70.16	2899.85	-11.84	12.77	-11.84	0.34	-0.10	-16.89	132.83	17.42	Keeper
3000.00	0.97	67.05	2999.83	-11.19	14.43	-11.19	0.11	-0.10	-3.11	127.80	18.26	Keeper
3100.00	0.72	64.35	3099.82	-10.59	15.78	-10.59	0.25	-0.25	-2.70	123.88	19.00	Keeper
3200.00	0.67	69.43	3199.81	-10.12	16.89	-10.12	0.08	-0.05	5.08	120.92	19.69	Keeper
3300.00	0.37	52.80	3299.81	-9.71	17.70	-9.71	0.33	-0.30	-16.63	118.77	20.19	Keeper
3400.00	0.58	356.03	3399.80	-9.01	17.92	-9.01	0.49	0.21	-56.77	116.71	20.06	Keeper
3500.00	0.67	1.82	3499.80	-7.93	17.90	-7.93	0.11	0.09	5.79	113.88	19.58	Keeper
3600.00	0.61	354.07	3599.79	-6.81	17.86	-6.81	0.11	-0.06	-7.75	110.87	19.12	Keeper
3700.00	0.59	318.57	3699.79	-5.90	17.47	-5.90	0.37	-0.02	-35.50	108.65	18.44	Keeper
3800.00	0.79	302.10	3799.78	-5.14	16.54	-5.14	0.28	0.20	-16.47	107.27	17.33	Keeper
3900.00	0.88	298.03	3899.77	-4.42	15.28	-4.42	0.11	0.09	-4.07	106.12	15.91	Keeper
4000.00	0.85	292.18	3999.76	-3.78	13.92	-3.78	0.09	-0.03	-5.85	105.18	14.42	Keeper
4100.00	1.08	282.79	4099.74	-3.29	12.31	-3.29	0.28	0.23	-9.39	104.95	12.74	Keeper
4200.00	1.05	288.61	4199.73	-2.79	10.52	-2.79	0.11	-0.03	5.82	104.82	10.89	Keeper
4300.00	0.91	281.45	4299.71	-2.34	8.88	-2.34	0.19	-0.14	-7.16	104.74	9.18	Keeper
4400.00	0.90	271.52	4399.70	-2.16	7.31	-2.16	0.16	-0.01	-9.93	106.43	7.63	Keeper
4500.00	0.93	267.39	4499.69	-2.17	5.72	-2.17	0.07	0.03	-4.13	110.81	6.12	Keeper
4600.00	0.98	263.35	4599.67	-2.31	4.06	-2.31	0.08	0.05	-4.04	119.64	4.67	Keeper
4700.00	1.00	258.53	4699.66	-2.58	2.35	-2.58	0.09	0.02	-4.82	137.64	3.49	Keeper
4800.00	0.68	271.21	4799.65	-2.74	0.91	-2.74	0.37	-0.32	12.68	161.72	2.89	Keeper
4900.00	0.70	274.57	4899.64	-2.68	-0.30	-2.68	0.05	0.02	3.36	186.31	2.70	Keeper
5000.00	0.64	286.11	4999.63	-2.48	-1.44	-2.48	0.15	-0.06	11.54	210.19	2.87	Keeper
5100.00	0.70	289.87	5099.63	-2.12	-2.55	-2.12	0.07	0.06	3.76	230.36	3.32	Keeper
5200.00	1.02	286.39	5199.62	-1.66	-3.98	-1.66	0.32	0.32	-3.48	247.41	4.31	Keeper
5300.00	1.01	284.06	5299.60	-1.19	-5.69	-1.19	0.04	-0.01	-2.33	258.18	5.81	Keeper
5400.00	0.93	293.35	5399.59	-0.66	-7.29	-0.66	0.18	-0.08	9.29	264.86	7.32	Keeper
5500.00	0.91	318.06	5499.57	0.26	-8.57	0.26	0.39	-0.02	24.71	271.72	8.57	Keeper
5600.00	1.05	307.06	5599.56	1.40	-9.83	1.40	0.23	0.14	-11.00	278.11	9.93	Keeper
5700.00	0.83	298.52	5699.54	2.30	-11.20	2.30	0.26	-0.22	-8.54	281.60	11.43	Keeper
5800.00	0.54	272.26	5799.54	2.66	-12.30	2.66	0.42	-0.29	-26.26	282.21	12.59	Keeper
5900.00	0.54	274.38	5899.53	2.72	-13.24	2.72	0.02	0.00	2.12	281.59	13.52	Keeper
6000.00	0.41	275.50	5999.53	2.79	-14.07	2.79	0.13	-0.13	1.12	281.20	14.34	Keeper
6100.00	0.25	334.00	6099.53	3.02	-14.52	3.02	0.35	-0.16	58.50	281.74	14.83	Keeper
6200.00	0.43	1.42	6199.53	3.59	-14.61	3.59	0.24	0.18	27.42	283.80	15.04	Keeper
6300.00	0.50	24.09	6299.52	4.36	-14.42	4.36	0.20	0.07	22.67	286.83	15.07	Keeper
6400.00	0.60	29.73	6399.52	5.22	-13.98	5.22	0.11	0.10	5.64	290.45	14.92	Keeper
6500.00	0.65	39.01	6499.51	6.11	-13.37	6.11	0.11	0.05	9.28	294.57	14.70	Keeper
6600.00	0.66	20.16	6599.51	7.09	-12.81	7.09	0.21	0.01	-18.85	298.97	14.64	Keeper
6700.00	0.77	30.31	6699.50	8.21	-12.27	8.21	0.17	0.11	10.15	303.79	14.77	Keeper
6800.00	0.62	35.70	6799.49	9.23	-11.62	9.23	0.16	-0.15	5.39	308.47	14.84	Keeper
6860.00	0.92	21.45	6859.49	9.94	-11.25	9.94	0.59	0.50	-23.75	311.47	15.02	Keeper
6911.00	11.96	2.00	6910.09	15.62	-10.92	15.62	21.76	21.65	-38.14	325.06	19.06	MWD
6921.00	15.21	359.63	6919.81	17.97	-10.89	17.97	32.97	32.50	-23.70	328.79	21.01	MWD
6931.00	18.38	358.14	6929.38	20.86	-10.95	20.86	31.99	31.70	-14.90	332.31	23.56	MWD
6941.00	21.63	357.60	6938.77	24.28	-11.08	24.28	32.55	32.50	-5.40	335.47	26.69	MWD
6951.00	24.80	357.70	6947.96	28.22	-11.24	28.22	31.70	31.70	1.00	338.28	30.37	MWD
6961.00	28.05	357.70	6956.92	32.66	-11.42	32.66	32.50	32.50	0.00	340.73	34.60	MWD
6971.00	31.39	357.50	6965.60	37.61	-11.63	37.61	33.41	33.40	-2.00	342.83	39.37	MWD
6981.00	34.82	358.60	6973.98	43.07	-11.81	43.07	34.82	34.30	11.00	344.67	44.66	MWD
6991.00	38.34	358.40	6982.00	49.03	-11.97	49.03	35.22	35.20	-2.00	346.29	50.47	MWD
7001.00	41.68	358.70	6989.66	55.46	-12.13	55.46	33.46	33.40	3.00	347.66	56.77	MWD

Scientific Drilling Survey

Company: Stevens & Tull
Field: Nadine
Site: Lea County, NM
Well: Emerald #2
Wellpath: North Lateral

Date:	3/9/2005	Time:	16:19:06	Page:	3
Co-ordinate(NE) Reference:	Well: Emerald #2, Grid North				
Vertical (TVD) Reference:	SITE 0.0				
Section (VS) Reference:	Well (0.00N,0.00E,0.00Azi)				
Survey Calculation Method:	Minimum Curvature				Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	ClsA deg	ClsD ft	Tool
7011.00	45.20	0.42	6996.92	62.33	-12.18	62.33	37.13	35.20	17.20	348.95	63.51	MWD
7021.00	48.80	1.30	7003.74	69.64	-12.07	69.64	36.57	36.00	8.80	350.17	70.68	MWD
7035.00	53.29	1.65	7012.54	80.52	-11.78	80.52	32.13	32.07	2.50	351.67	81.38	MWD
7067.00	62.96	2.97	7029.42	107.64	-10.67	107.64	30.42	30.22	4.12	354.34	108.17	MWD
7099.00	68.85	3.06	7042.48	136.80	-9.14	136.80	18.41	18.41	0.28	356.18	137.10	MWD
7130.00	74.39	3.06	7052.25	166.16	-7.57	166.16	17.87	17.87	0.00	357.39	166.34	MWD
7161.00	81.07	2.97	7058.83	196.40	-5.98	196.40	21.55	21.55	-0.29	358.26	196.49	MWD
7193.00	87.14	2.36	7062.12	228.18	-4.50	228.18	19.06	18.97	-1.91	358.87	228.22	MWD
7224.00	88.72	3.24	7063.24	259.12	-2.98	259.12	5.83	5.10	2.84	359.34	259.14	MWD
7254.00	89.16	3.41	7063.79	289.06	-1.24	289.06	1.57	1.47	0.57	359.75	289.07	MWD
7286.00	89.16	0.60	7064.26	321.04	-0.12	321.04	8.78	0.00	-8.78	359.98	321.04	MWD
7318.00	88.02	359.46	7065.05	353.03	-0.11	353.03	5.04	-3.56	-3.56	359.98	353.03	MWD
7350.00	86.00	359.37	7066.72	384.98	-0.43	384.98	6.32	-6.31	-0.28	359.94	384.98	MWD
7381.00	86.35	359.19	7068.79	415.91	-0.82	415.91	1.27	1.13	-0.58	359.89	415.91	MWD
7412.00	89.69	359.37	7069.86	446.88	-1.21	446.88	10.79	10.77	0.58	359.84	446.88	MWD
7444.00	88.72	359.63	7070.30	478.88	-1.49	478.88	3.14	-3.03	0.81	359.82	478.88	MWD
7476.00	87.76	359.28	7071.29	510.86	-1.80	510.86	3.19	-3.00	-1.09	359.80	510.86	MWD
7507.00	88.20	359.37	7072.38	541.84	-2.16	541.84	1.45	1.42	0.29	359.77	541.84	MWD

