

Pathfinder

Survey Report

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Job No: J-WT-0510-0191-WT-WT

Date: 12/28/2005

Time: 5:17 pm

Wellpath ID: J-WT-0150-0191-WT-WT

Date Created: 10/30/2005

Last Revision: 11/3/2005

Calculated using the Minimum Curvature Method

Computed using PDS VER2.2.6

Vertical Section Plane: 0.00 deg.

Survey Reference: WELLHEAD
Vertical Section Reference: WELLHEAD
Closure Reference: WELLHEAD
TVD Reference: WELLHEAD

MARBOB ENERGY
LPC 31 FEDERAL #1
LEA CO., NM
RIG: L&M #1

G-31-18s-32e
1980 / N 4 2280/E
30-D 25-3744D

DECL: 8.19 EAST TO TRUE NORTH
KBH = 17'

PATHFINDER OFFICE SUPERVISOR
CODY MEBANE
PATHFINDER FIELD ENGINEER
GREG PUTNEY

Measured Depth (ft)	Incl (deg.)	Drift Dir. (deg.)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	T O T A L Rectangular Offsets (ft) (ft)		Closure Dist. Dir. (ft) (deg.)	DLS (dg/100ft)
THE FOLLOWING ARE TOTCO SURVEYS									
1050.00	0.75	307.40	1050.00	0.00	0.00	0.00 N	0.00 E	0.00@ 0.00	0.00
1393.00	0.25	307.40	1392.99	343.00	1.82	1.82 N	2.38W	2.99@307.40	0.15
1849.00	1.00	307.40	1848.96	456.00	4.84	4.84 N	6.33W	7.97@307.40	0.16
2326.00	2.25	307.40	2325.75	477.00	13.05	13.05 N	17.07W	21.49@307.40	0.26
2421.00	2.00	307.40	2420.69	95.00	15.19	15.19 N	19.87W	25.02@307.40	0.26
2512.00	1.00	307.40	2511.66	91.00	16.64	16.64 N	21.77W	27.40@307.40	1.10
2699.00	2.25	307.40	2698.58	187.00	19.86	19.86 N	25.98W	32.70@307.40	0.67
2887.00	1.25	307.40	2886.49	188.00	23.35	23.35 N	30.54W	38.44@307.40	0.53
3388.00	1.00	307.40	3387.39	501.00	29.32	29.32 N	38.35W	48.28@307.40	0.05
3877.00	0.25	307.40	3876.36	489.00	32.56	32.56 N	42.59W	53.61@307.40	0.15
4386.00	1.25	307.40	4385.31	509.00	36.61	36.61 N	47.88W	60.28@307.40	0.20
4876.00	1.25	307.40	4875.19	490.00	43.10	43.10 N	56.38W	70.96@307.40	0.00
5222.00	2.00	307.40	5221.05	346.00	49.06	49.06 N	64.17W	80.78@307.40	0.22
5418.00	1.75	307.40	5416.94	196.00	52.96	52.96 N	69.26W	87.19@307.40	0.13
5695.00	1.75	307.40	5693.81	277.00	58.09	58.09 N	75.98W	95.65@307.40	0.00
6689.00	1.75	307.40	6687.35	994.00	76.53	76.53 N	100.10W	126.00@307.40	0.00
7184.00	1.50	307.40	7182.15	495.00	85.06	85.06 N	111.25W	140.04@307.40	0.05
7680.00	2.00	307.40	7677.92	496.00	94.26	94.26 N	123.28W	155.15@307.40	0.10
7773.00	1.75	307.40	7770.87	93.00	96.11	96.11 N	125.70W	158.23@307.40	0.27
7896.00	3.00	307.40	7893.76	123.00	99.20	99.20 N	129.75W	163.33@307.40	1.02
7958.00	3.00	307.40	7955.67	62.00	101.17	101.17 N	132.33W	166.57@307.40	0.00
8022.00	3.00	307.40	8019.59	64.00	103.21	103.21 N	134.99W	169.92@307.40	0.00
8087.00	2.75	307.40	8084.50	65.00	105.19	105.19 N	137.58W	173.18@307.40	0.38
THE FOLLOWING ARE PATHFINDER MWD SURVEYS									
8147.00	3.70	307.40	8144.41	60.00	107.24	107.24 N	140.26W	176.56@307.40	1.58
8194.00	3.70	306.00	8191.31	47.00	109.05	109.05 N	142.69W	179.59@307.39	0.19
8225.00	4.10	304.60	8222.24	31.00	110.27	110.27 N	144.41W	181.70@307.36	1.33
8256.00	2.60	305.30	8253.19	31.00	111.30	111.30 N	145.90W	183.51@307.34	4.84
8288.00	2.10	317.90	8285.16	32.00	112.16	112.16 N	146.88W	184.81@307.36	2.24

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Measured Depth (ft)	Incl (deg.)	Drift Dir. (deg.)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	T O T A L Rectangular Offsets (ft)		Closure Dist. Dir. (ft) (deg.)	DLS (dg/100ft)
8351.00	1.20	291.60	8348.13	63.00	113.26	113.26 N	148.27W	186.58@307.37	1.83
8414.00	1.10	282.80	8411.12	63.00	113.63	113.63 N	149.47W	187.76@307.24	0.32
8477.00	1.80	289.10	8474.10	63.00	114.09	114.09 N	151.00W	189.26@307.07	1.14
8539.00	2.50	285.60	8536.06	62.00	114.77	114.77 N	153.22W	191.44@306.84	1.15
8601.00	1.60	274.30	8598.02	62.00	115.20	115.20 N	155.39W	193.43@306.55	1.58
8663.00	0.90	199.40	8660.00	62.00	114.81	114.81 N	156.41W	194.02@306.28	2.61
8725.00	1.20	229.70	8721.99	62.00	113.93	113.93 N	157.07W	194.04@305.95	1.00
8819.00	1.60	197.30	8815.97	94.00	112.04	112.04 N	158.21W	193.86@305.30	0.93
8851.00	1.80	200.90	8847.95	32.00	111.14	111.14 N	158.52W	193.60@305.03	0.71
8913.00	1.60	162.20	8909.93	62.00	109.41	109.41 N	158.61W	192.68@304.60	1.84
8975.00	0.90	162.20	8971.91	62.00	108.12	108.12 N	158.19W	191.61@304.35	1.13
9038.00	1.10	154.40	9034.90	63.00	107.10	107.10 N	157.78W	190.70@304.17	0.38
9101.00	1.10	66.10	9097.90	63.00	106.80	106.80 N	156.97W	189.86@304.23	2.43
9164.00	1.80	162.50	9160.88	63.00	106.10	106.10 N	156.11W	188.76@304.20	3.51
9226.00	1.90	168.50	9222.85	62.00	104.17	104.17 N	155.62W	187.26@303.80	0.35
9288.00	2.30	172.00	9284.81	62.00	101.93	101.93 N	155.24W	185.71@303.29	0.68
9413.00	2.30	147.10	9409.71	125.00	97.34	97.34 N	153.53W	181.78@302.38	0.79
9475.00	1.80	164.60	9471.67	62.00	95.36	95.36 N	152.59W	179.94@302.00	1.28
9536.00	1.40	150.23	9532.65	61.00	93.79	93.79 N	151.97W	178.58@301.68	0.92
9599.00	0.30	204.40	9595.64	63.00	92.97	92.97 N	151.65W	177.88@301.51	1.98
9725.00	0.50	175.20	9721.64	126.00	92.12	92.12 N	151.74W	177.52@301.26	0.22
9914.00	0.90	194.90	9910.62	189.00	89.86	89.86 N	152.06W	176.63@300.58	0.24
9950.00	0.90	26.20	9946.62	36.00	89.84	89.84 N	152.01W	176.57@300.59	4.98
STRAIGHT-LINE PROJECTION TO BIT									
9990.00	0.90	26.20	9986.62	40.00	90.41	90.41 N	151.73W	176.62@300.79	0.00