



Survey Report

Service Company: Aim Directional Services

Location: Eddy County, NM

Well: Freeway Federal Com #2H

Rig: Latshaw 35

API or UWI: 30-015-42569

Job Number: WT-14-179

State: New Mexico

Operating Company: Chi Energy

County: Eddy

Magnetic Declination: 0.00

Comment:

Proposed Azimuth: 89.88

North Reference: GRID

Tie-In Data:

MD	Inclination	Azimuth	TVD	NS	EW
7561.00	0.44	215.28	7558.72	-21.67	13.68

Survey Data:

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
7613.00	2.10	73.20	7610.71	-21.56	14.48	146.12	25.97	14.43	4.73
7708.00	10.30	94.30	7705.08	-21.69	24.63	131.37	32.82	24.58	8.82
7803.00	18.10	102.20	7797.11	-25.45	47.56	118.15	53.94	47.51	8.44
7897.00	25.10	103.30	7884.46	-33.13	81.28	112.18	87.77	81.21	7.46
7992.00	34.20	98.70	7966.94	-41.83	127.38	108.18	134.07	127.29	9.87
8087.00	43.60	95.80	8040.80	-49.19	186.50	104.78	192.88	186.40	10.08
8181.00	50.00	97.80	8105.12	-57.36	254.49	102.70	260.88	254.37	6.98
8276.00	57.00	95.20	8161.60	-65.93	330.32	101.29	336.83	330.18	7.69
8371.00	67.80	93.10	8205.55	-71.93	414.16	99.85	420.36	414.01	11.54
8465.00	78.90	91.20	8231.65	-75.27	504.22	98.49	509.80	504.06	13.02
8560.00	84.90	89.60	8244.21	-75.92	598.35	97.23	603.14	598.19	5.52
8655.00	88.40	86.50	8249.76	-72.69	693.10	95.99	696.90	692.95	4.92
8750.00	88.90	86.20	8252.00	-66.64	787.88	94.83	790.70	787.74	0.61
8844.00	89.10	86.20	8253.64	-60.41	881.66	93.92	883.73	881.53	0.21
8939.00	89.10	86.50	8255.13	-54.36	976.46	93.19	977.97	976.34	0.32
9034.00	88.80	87.00	8256.88	-48.98	1071.29	92.62	1072.41	1071.16	0.61
9128.00	88.70	86.60	8258.93	-43.73	1165.12	92.15	1165.94	1165.03	0.44
9223.00	89.00	86.40	8260.83	-37.93	1259.92	91.72	1260.49	1259.84	0.38
9317.00	88.70	86.20	8262.72	-31.87	1353.71	91.35	1354.08	1353.64	0.38
9412.00	88.80	86.20	8264.79	-25.58	1448.48	91.01	1448.70	1448.42	0.11
9507.00	89.50	86.00	8266.20	-19.11	1543.25	90.71	1543.36	1543.20	0.77
9601.00	89.60	85.70	8266.94	-12.31	1637.00	90.43	1637.04	1636.97	0.34
9696.00	88.10	88.90	8268.84	-6.18	1731.78	90.20	1731.79	1731.76	2.02
9791.00	87.00	88.20	8272.91	-2.13	1826.60	90.07	1826.60	1826.59	1.79
9886.00	86.70	89.60	8278.13	-0.30	1921.43	90.01	1921.43	1921.43	1.50
9980.00	87.60	90.50	8282.80	-0.39	2015.32	90.01	2015.32	2015.31	1.35
10075.00	88.20	90.80	8286.28	-1.46	2110.25	90.04	2110.25	2110.24	0.71
10169.00	88.60	90.90	8288.91	-2.86	2204.20	90.07	2204.20	2204.19	0.44
10264.00	89.00	90.70	8290.90	-4.18	2299.17	90.10	2299.17	2299.15	0.47
10359.00	89.80	90.90	8291.89	-5.51	2394.15	90.13	2394.16	2394.14	0.87
10454.00	90.20	90.90	8291.89	-7.00	2489.14	90.16	2489.15	2489.12	0.42
10548.00	90.80	91.10	8291.07	-8.64	2583.12	90.19	2583.14	2583.10	0.67

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10643.00	89.50	89.60	8290.82	-9.22	2678.12	90.20	2678.13	2678.09	2.09
10738.00	88.70	89.50	8292.31	-8.48	2773.10	90.18	2773.11	2773.08	0.85
10833.00	88.10	89.80	8294.97	-7.90	2868.06	90.16	2868.07	2868.04	0.71
10928.00	88.20	89.50	8298.03	-7.32	2963.01	90.14	2963.02	2962.99	0.33
11022.00	89.40	90.20	8300.00	-7.07	3056.99	90.13	3056.99	3056.97	1.48
11117.00	90.20	89.80	8300.33	-7.07	3151.99	90.13	3151.99	3151.96	0.94
11212.00	90.90	90.30	8299.42	-7.15	3246.98	90.13	3246.99	3246.96	0.91
11307.00	89.60	90.50	8299.01	-7.82	3341.97	90.13	3341.98	3341.95	1.38
11402.00	89.40	90.50	8299.84	-8.65	3436.97	90.14	3436.98	3436.94	0.21
11497.00	89.50	90.20	8300.75	-9.23	3531.96	90.15	3531.97	3531.93	0.33
11591.00	88.00	90.30	8302.80	-9.64	3625.93	90.15	3625.95	3625.91	1.60
11686.00	88.80	90.70	8305.45	-10.47	3720.89	90.16	3720.91	3720.86	0.94
11781.00	87.50	91.20	8308.52	-12.04	3815.83	90.18	3815.85	3815.79	1.47
11876.00	87.50	91.30	8312.66	-14.11	3910.72	90.21	3910.74	3910.68	0.11
11971.00	87.60	90.70	8316.72	-15.77	4005.61	90.23	4005.64	4005.57	0.64
12065.00	88.30	90.50	8320.09	-16.75	4099.55	90.23	4099.58	4099.50	0.77
12160.00	88.70	90.10	8322.57	-17.25	4194.51	90.24	4194.55	4194.47	0.60
12255.00	89.20	89.80	8324.31	-17.16	4289.50	90.23	4289.53	4289.45	0.61
12350.00	88.10	88.70	8326.55	-15.92	4384.46	90.21	4384.49	4384.42	1.64
12445.00	88.70	88.60	8329.20	-13.68	4479.40	90.18	4479.42	4479.36	0.64
12539.00	89.40	88.90	8330.76	-11.63	4573.36	90.15	4573.37	4573.32	0.81
12631.00	90.10	88.70	8331.16	-9.71	4665.34	90.12	4665.35	4665.31	0.79

SITE DETAILS: Freeway Federal Com #2H

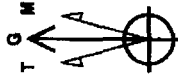
Site Centre Northing: 595842.61
Easting: 596868.51

Positional Uncertainty: 0.00
Convergence: 0.17
Local North: Grid

PROJECT DETAILS: Eddy County, New Mexico

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001

System Datum: Mean Sea Level



Azimuths to Grid North
True North: -0.17°
Magnetic North: 7.58°

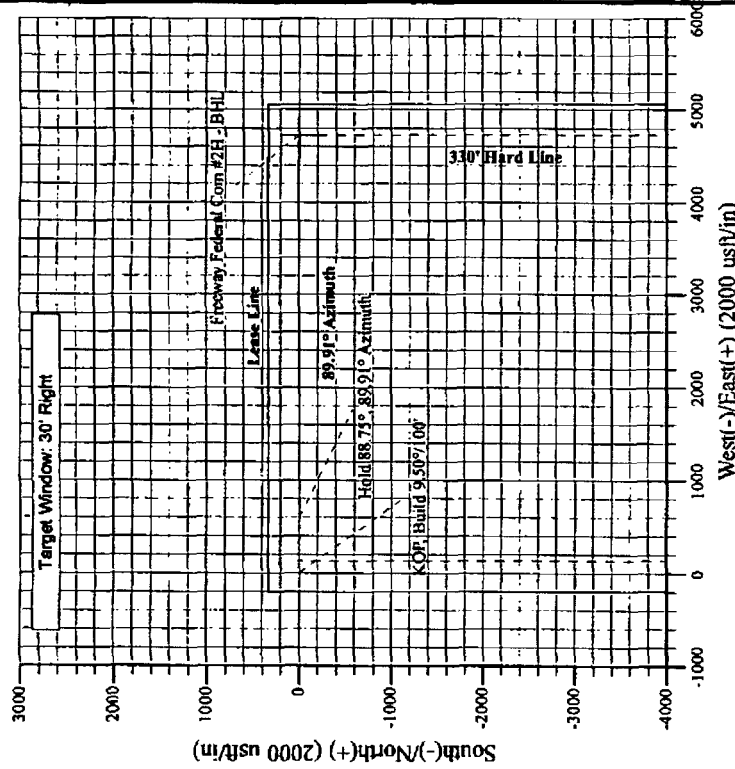
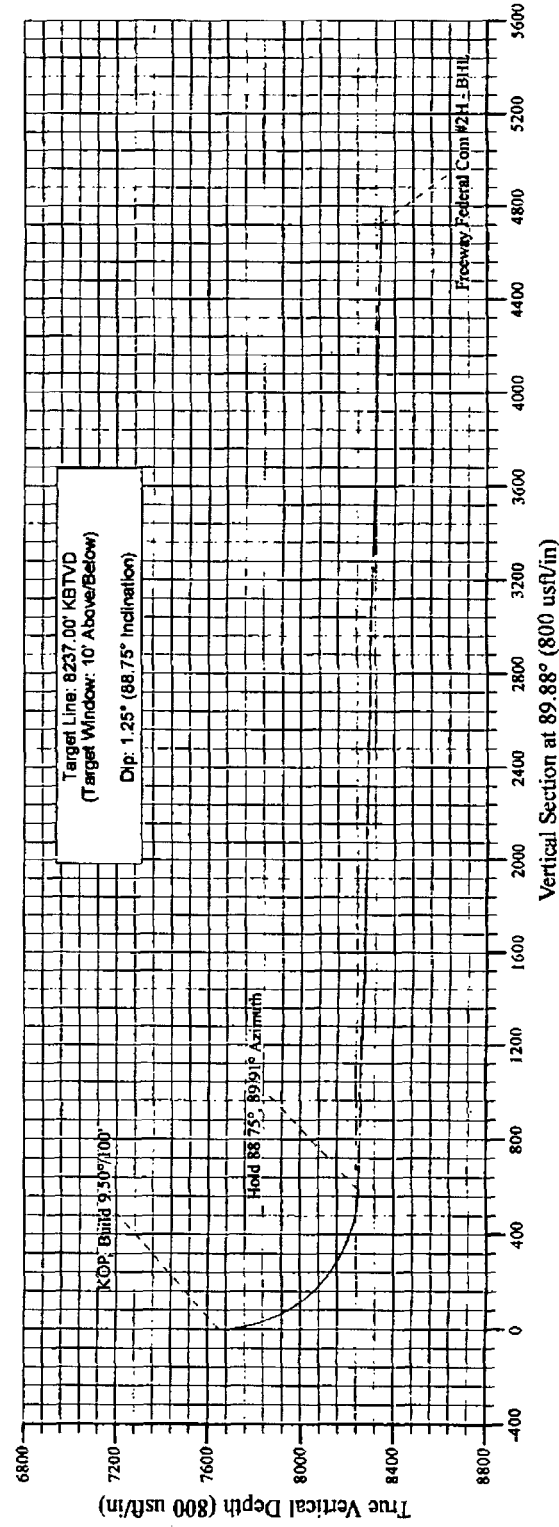
Magnetic Field
Strength: 48504.6nT
Dip Angle: 60.55°
Date: 10/9/2014
Model: HDGM

DESIGN TARGET DETAILS

Name	Freeway Federal Com #2H - BHL	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
		8340.00	7.64	4725.15	595850.35	601593.66	32.6370612	-104.0033026	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	ITace	VSecl	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	7647.00	0.00	0.00	7647.00	0.00	0.00	0.00	0.00	0.00		KOP Build 9.50°/100'
3	8381.24	88.75	89.91	8249.97	0.95	589.99	9.50	89.91	589.99		Hold 88.75° 89.91° Azimuth
4	12717.39	88.75	89.91	8340.00	7.64	4725.15	0.00	0.00	4725.16	Freeway Federal Com #2H - BHL	PHH - Lateral





Scientific Drilling

Gyroscopic Survey Report for CHI ENERGY

Well Location	EDDY COUNTY, NEW MEXICO
Well Name	FREEWAY FEDERAL COM, WELL NO.2H
Rig Number	LATSHAW 35
Survey Date	11/3/2014
Latitude	32.6370000°N
Longitude	104.0030000°E
North Reference	Grid North
Grid Correction	-0.17 deg
Depth Reference	RKB (22.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 89.88Azim (deg)
Definitive Survey	FINAL GYRO SURVEY
Operator(s)	FRANK RENTERIA

Well Notes



Scientific Drilling

Survey Report

Well Name:		FREEWAY FEDERAL COM, WELL NO.2H							
Survey:		FINAL GYRO SURVEY							
Survey Date:		11/3/2014							
MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
100.00	0.82	213.76	100.00	-0.40	-0.60	-0.40	0.82	0.72	213.78
200.00	1.02	213.97	199.98	-1.30	-1.93	-1.29	0.20	2.32	213.64
300.00	1.01	210.69	299.97	-2.25	-3.42	-2.24	0.06	4.09	213.19
400.00	1.26	216.76	399.95	-3.36	-5.06	-3.35	0.27	6.07	213.47
500.00	1.34	211.03	499.92	-4.62	-6.94	-4.61	0.15	8.33	213.56
600.00	1.56	216.29	599.89	-6.03	-9.04	-6.02	0.26	10.86	213.63
700.00	1.78	207.06	699.85	-7.55	-11.53	-7.53	0.35	13.77	213.15
800.00	1.84	198.64	799.80	-8.78	-14.44	-8.75	0.27	16.88	211.23
900.00	1.99	189.55	899.74	-9.59	-17.68	-9.55	0.34	20.09	208.39
1000.00	2.03	181.09	999.68	-9.92	-21.16	-9.88	0.30	23.35	205.02
1100.00	2.18	164.09	1099.61	-9.44	-24.76	-9.39	0.64	26.48	200.77
1200.00	2.69	143.78	1199.53	-7.54	-28.48	-7.48	1.00	29.45	194.71
1300.00	2.76	138.90	1299.41	-4.58	-32.19	-4.51	0.24	32.51	187.97
1400.00	2.81	135.28	1399.29	-1.28	-35.75	-1.20	0.18	35.77	181.92
1500.00	2.45	130.40	1499.19	2.07	-38.87	2.15	0.43	38.93	176.83
1600.00	1.89	132.12	1599.12	4.91	-41.39	5.00	0.56	41.88	173.11
1700.00	1.45	127.38	1699.07	7.14	-43.24	7.23	0.46	43.84	170.51
1800.00	1.16	125.91	1799.05	8.96	-44.60	9.05	0.29	45.51	168.53
1900.00	1.12	118.73	1899.03	10.63	-45.66	10.73	0.15	46.90	166.78
2000.00	1.13	117.83	1999.01	12.35	-46.58	12.45	0.02	48.22	165.04
2100.00	1.13	108.81	2098.99	14.15	-47.36	14.25	0.18	49.46	163.25
2200.00	1.03	112.79	2198.97	15.91	-48.03	16.01	0.13	50.63	161.56
2300.00	0.85	122.05	2298.96	17.36	-48.77	17.47	0.23	51.80	160.30
2400.00	0.85	115.84	2398.95	18.65	-49.49	18.76	0.09	52.92	159.24
2500.00	0.83	122.41	2498.94	19.93	-50.20	20.04	0.10	54.05	158.24
2600.00	0.90	121.96	2598.93	21.21	-51.00	21.31	0.07	55.27	157.32
2700.00	1.08	132.32	2698.91	22.57	-52.05	22.68	0.25	56.78	156.46
2800.00	1.19	128.17	2798.89	24.08	-53.33	24.20	0.14	58.56	155.60
2900.00	1.14	134.97	2898.87	25.80	-54.67	25.71	0.15	60.42	154.81
3000.00	1.09	147.57	2998.85	26.81	-56.18	26.93	0.25	62.30	154.39
3100.00	1.20	154.56	3098.83	27.77	-57.93	27.89	0.18	64.29	154.29
3200.00	1.30	150.31	3198.81	28.77	-59.86	28.90	0.13	66.47	154.23
3300.00	1.02	143.45	3298.79	29.86	-61.56	29.99	0.31	68.48	154.03
3400.00	0.79	146.27	3398.78	30.77	-62.85	30.90	0.24	70.03	153.82
3500.00	0.75	155.74	3498.77	31.42	-64.02	31.55	0.13	71.37	153.76



Well Name:		FREEWAY FEDERAL COM, WELL NO.2H							
Survey:		FINAL GYRO SURVEY							
Survey Date:		11/3/2014							
MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
3600.00	0.66	162.27	3598.76	31.01	-65.05	32.05	0.19	72.52	153.77
3700.00	0.43	168.61	3698.76	32.21	-65.85	32.35	0.19	73.37	153.84
3800.00	0.61	160.79	3798.75	32.48	-66.72	32.60	0.19	74.20	153.90
3900.00	0.47	165.77	3898.75	32.74	-67.62	32.88	0.15	75.19	154.07
4000.00	0.43	154.22	3998.74	33.00	-68.36	33.14	0.10	75.97	154.14
4100.00	0.18	126.13	4098.74	33.29	-68.79	33.43	0.29	76.49	154.08
4200.00	0.12	57.95	4198.74	33.50	-68.83	33.65	0.17	76.61	153.95
4300.00	0.32	10.60	4298.74	33.64	-68.50	33.78	0.26	76.38	153.75
4400.00	0.43	347.78	4398.74	33.61	-67.86	33.76	0.19	75.79	153.55
4500.00	0.60	14.45	4498.74	33.86	-66.98	33.81	0.29	75.03	153.22
4600.00	0.90	18.05	4598.73	34.04	-65.73	34.18	0.31	74.08	152.52
4700.00	1.17	24.61	4698.71	34.72	-64.05	34.85	0.29	72.92	151.45
4800.00	1.28	26.03	4798.69	35.64	-62.11	35.77	0.11	71.67	150.06
4900.00	1.26	20.68	4898.66	36.52	-60.08	36.65	0.12	70.37	148.62
5000.00	1.48	14.54	4998.63	37.24	-57.80	37.36	0.28	68.82	147.12
5100.00	1.55	2.90	5098.60	37.63	-55.20	37.75	0.32	66.88	145.63
5200.00	1.63	356.14	5198.58	37.61	-52.43	37.72	0.20	64.59	144.27
5300.00	1.62	355.47	5298.52	37.41	-49.61	37.52	0.02	62.20	142.90
5400.00	1.42	348.53	5398.49	37.06	-46.98	37.16	0.27	59.90	141.66
5500.00	1.39	341.14	5498.46	36.42	-44.62	36.52	0.18	57.66	140.70
5600.00	1.28	315.08	5598.43	35.25	-42.68	35.34	0.61	55.41	140.37
5700.00	1.40	314.44	5698.40	33.59	-41.03	33.68	0.13	53.09	140.62
5800.00	1.34	311.49	5798.37	31.85	-39.41	31.93	0.10	50.72	140.98
5900.00	1.30	320.07	5898.35	30.25	-37.77	30.33	0.20	48.44	141.23
6000.00	1.06	330.03	5998.33	29.07	-36.09	29.14	0.31	46.39	141.08
6100.00	1.15	337.82	6098.31	28.23	-34.36	28.30	0.18	44.51	140.52
6200.00	1.41	350.20	6198.28	27.64	-32.22	27.71	0.37	42.49	139.30
6300.00	2.12	1.21	6298.24	27.48	-29.15	27.64	0.79	40.11	138.63
6400.00	2.28	2.22	6398.16	27.60	-25.31	27.66	0.16	37.49	132.46
6500.00	2.50	9.60	6498.07	28.05	-21.17	28.10	0.37	35.18	127.00
6600.00	2.12	10.27	6597.99	28.75	-17.21	28.79	0.38	33.54	120.87
6700.00	0.84	354.82	6697.96	29.02	-14.66	29.05	1.33	32.55	116.78
6800.00	0.73	275.97	6797.95	28.32	-13.87	28.35	1.00	31.56	116.07
6900.00	1.34	245.53	6897.94	26.62	-14.29	26.65	0.80	30.24	118.20
7000.00	2.22	249.07	6997.89	23.74	-15.47	23.77	0.88	28.36	123.04
7100.00	2.20	245.20	7097.81	20.19	-16.96	20.22	0.15	26.40	129.99



Well Name: FREEWAY FEDERAL COM, WELL NO.2H

Survey: FINAL GYRO SURVEY

Survey Date: 11/3/2014

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS	Closure	Closure
ft	deg	deg	ft	ft	ft	ft	7100ft	Distance	Direction
								ft	deg
7200.00	1.48	221.32	7187.76	17.58	-18.75	17.62	1.03	25.73	138.78
7300.00	0.88	239.90	7297.74	16.05	-20.11	16.09	0.72	25.76	141.33
7400.00	0.62	247.80	7397.73	14.88	-20.70	14.93	0.28	25.52	144.21
7500.00	0.60	228.63	7497.73	14.00	-21.28	14.05	0.22	25.48	148.54
7561.00	0.44	215.28	7558.72	13.64	-21.67	13.68	0.30	25.63	147.74