



Cimarex Crescent Hale 10 Federal #3H MWD 0ft to 15329ft MD

(Def Survey)

Report Date: April 11, 2013 - 09:32 AM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cactus 101 / Cimarex Crescent Hale 10 Federal #3H
Well: Cimarex Crescent Hale 10 Federal #3H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Crescent Hale 10 Federal #3H MWD 0ft to 15329ft MD
Survey Date: March 18, 2013
Tort / AHD / DDI / ERD Ratio: 207.698 ° / 7131.243 ft / 6.423 / 0.831
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 40' 25.65560", W 103° 56' 40.76935"
Location Grid N/E Y/X: N 609076.065 ftUS, E 660933.135 ftUS
CRS Grid Convergence Angle: 0.2098 °
Grid Scale Factor: 0.99992547

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 267.670 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: KB
TVD Reference Elevation: 3372.000 ft above
Seabed / Ground Elevation: 3354.000 ft above
Magnetic Declination: 7.685 °
Total Gravity Field Strength: 998.5290mgn (9.80665 Based)
Total Magnetic Field Strength: 48646.150 nT
Magnetic Dip Angle: 60.457 °
Declination Date: March 18, 2013
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: 0.2098 °

Total Corr Mag North->Grid North: 7.4749 °

Local Coord Referenced To: Structure Reference Point



Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
SHL Crescent Hale 10 fed #3H	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	65.87M
	468.00	0.70	65.87	467.99	-2.65	1.17	2.61	2.86	65.87	0.15	74.09M
	556.00	1.19	74.09	555.98	-4.04	1.64	3.98	4.30	67.61	0.58	87.27M
	651.00	1.01	87.27	650.96	-5.84	1.95	5.76	6.08	71.31	0.33	92.68M
	747.00	1.01	92.68	746.94	-7.53	1.95	7.45	7.70	75.34	0.10	89.96M
	842.00	1.01	89.96	841.93	-9.20	1.91	9.13	9.33	78.17	0.05	70.05M
	937.00	1.10	70.05	936.91	-10.90	2.22	10.82	11.05	78.39	0.40	70.49M
	1032.00	1.10	70.49	1031.90	-12.64	2.84	12.54	12.86	77.24	0.01	77.26M
	1127.00	1.10	77.26	1126.88	-14.41	3.34	14.29	14.67	76.83	0.14	69.48M
	1222.00	1.19	69.48	1221.86	-16.25	3.89	16.10	16.56	76.41	0.19	79.36M
	1317.00	1.49	79.36	1316.83	-18.40	4.47	18.24	18.78	76.24	0.40	72.55M
	1413.00	1.58	72.55	1412.80	-20.92	5.09	20.73	21.34	76.20	0.21	78.66M
	1508.00	1.71	78.66	1507.76	-23.58	5.76	23.37	24.07	76.14	0.23	78.57M
	1603.00	2.02	78.57	1602.71	-26.64	6.37	26.40	27.16	76.42	0.33	78.75M
	1699.00	0.88	78.75	1698.68	-29.03	6.85	28.78	29.58	76.60	1.19	91.76M
	1794.00	0.70	91.76	1793.67	-30.33	6.98	30.07	30.87	76.94	0.27	73.56M
	1889.00	0.62	73.56	1888.66	-31.41	7.11	31.15	31.95	77.15	0.23	94.97M
	1928.00	0.70	94.97	1927.66	-31.85	7.14	31.59	32.39	77.25	0.66	100.37M
	2071.00	0.79	100.37	2070.65	-33.68	6.89	33.43	34.13	78.35	0.08	94.26M

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	2166.00	0.31	94.26	2165.64	-34.57	6.75	34.33	34.99	78.87	0.51	142.25M
	2262.00	0.79	142.25	2261.64	-35.22	6.21	34.99	35.54	79.93	0.65	139.88M
	2357.00	0.40	139.88	2356.63	-35.80	5.44	35.61	36.02	81.31	0.41	321.85M
	2452.00	0.22	321.85	2451.63	-35.90	5.33	35.71	36.10	81.51	0.65	66.66M
	2548.00	0.40	66.66	2547.63	-36.10	5.61	35.90	36.34	81.12	0.52	22.46M
	2643.00	0.31	22.46	2642.63	-36.52	5.98	36.30	36.79	80.65	0.29	159.96M
	2738.00	0.40	159.96	2737.63	-36.73	5.90	36.52	36.99	80.82	0.70	56.47M
	2834.00	0.40	56.47	2833.63	-37.11	5.77	36.91	37.36	81.11	0.65	71.67M
	2929.00	0.40	71.67	2928.63	-37.72	6.06	37.50	37.99	80.82	0.11	98.26M
	3025.00	0.70	98.26	3024.62	-38.62	6.08	38.40	38.88	81.00	0.40	98.26M
	3120.00	0.62	98.26	3119.61	-39.69	5.92	39.48	39.92	81.47	0.08	59.98M
	3215.00	0.40	59.98	3214.61	-40.49	6.02	40.28	40.73	81.50	0.41	80.55M
	3311.00	0.22	80.55	3310.61	-40.97	6.21	40.75	41.22	81.33	0.22	177.16M
	3406.00	0.10	177.16	3405.61	-41.15	6.16	40.93	41.40	81.44	0.27	99.49M
	3501.00	0.70	99.49	3500.61	-41.72	5.98	41.51	41.94	81.80	0.72	121.07M
	3597.00	0.70	121.07	3596.60	-42.78	5.58	42.59	42.96	82.53	0.27	146.25M
	3692.00	0.48	146.25	3691.60	-43.48	4.95	43.31	43.59	83.47	0.35	27.55M
	3785.00	0.31	27.55	3784.59	-43.80	4.85	43.64	43.91	83.65	0.74	48.08M
	3881.00	0.48	48.08	3880.59	-44.24	5.35	44.06	44.39	83.07	0.23	38.19M
	3976.00	0.48	38.19	3975.59	-44.81	5.93	44.60	45.00	82.43	0.09	1.89M
	4071.00	0.70	1.89	4070.58	-45.11	6.82	44.87	45.39	81.35	0.45	101.86M
	4163.00	0.31	101.86	4162.58	-45.39	7.33	45.13	45.72	80.77	0.88	31.55M
	4255.00	0.40	31.55	4254.58	-45.81	7.56	45.54	46.17	80.58	0.45	68.77M
	4350.00	0.79	68.77	4349.57	-46.62	8.08	46.33	47.03	80.11	0.56	50.89M
	4445.00	0.48	50.89	4444.57	-47.56	8.56	47.25	48.02	79.73	0.38	57.88M
	4540.00	0.40	57.88	4539.57	-48.16	8.99	47.84	48.67	79.35	0.10	50.05M
	4635.00	0.31	50.05	4634.56	-48.65	9.33	48.31	49.21	79.07	0.11	55.15M
	4731.00	0.31	55.15	4730.56	-49.08	9.65	48.73	49.67	78.80	0.03	57.39M
	4826.00	0.62	57.39	4825.56	-49.74	10.07	49.37	50.39	78.47	0.33	64.07M
	4922.00	0.70	64.07	4921.55	-50.72	10.61	50.33	51.44	78.10	0.12	37.75M
	5018.00	0.31	37.75	5017.55	-51.43	11.07	51.02	52.21	77.76	0.46	66.75M
	5111.00	0.70	66.75	5110.55	-52.12	11.49	51.70	52.96	77.47	0.49	96.15M
	5206.00	0.62	96.15	5205.54	-53.17	11.67	52.74	54.02	77.53	0.36	77.96M
	5301.00	0.62	77.96	5300.53	-54.19	11.72	53.76	55.02	77.70	0.21	80.68M
	5396.00	0.70	80.68	5395.53	-55.27	11.92	54.83	56.11	77.73	0.09	93.08M
	5491.00	0.79	93.08	5490.52	-56.50	11.98	56.06	57.32	77.94	0.19	105.78M
	5587.00	0.62	105.78	5586.51	-57.65	11.80	57.22	58.42	78.34	0.24	93.69M
	5682.00	0.62	93.69	5681.51	-58.65	11.63	58.23	59.38	78.70	0.14	75.99M
	5778.00	0.40	75.99	5777.50	-59.49	11.68	59.07	60.21	78.82	0.28	100.59M
	5873.00	0.70	100.59	5872.50	-60.38	11.65	59.96	61.08	79.00	0.40	88.46M
	5969.00	0.70	88.46	5968.49	-61.54	11.56	61.12	62.21	79.29	0.15	65.65M
	6064.00	0.62	65.65	6063.49	-62.60	11.79	62.17	63.28	79.27	0.29	54.18M
	6160.00	0.40	54.18	6159.48	-63.36	12.20	62.92	64.09	79.03	0.25	10.46M
	6254.00	0.70	10.46	6253.48	-63.76	12.95	63.29	64.60	78.43	0.53	23.07M

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	6350.00	0.62	23.07	6349.47	-64.11	14.01	63.60	65.12	77.58	0.17	339.56M
	6445.00	0.22	339.56	6444.47	-64.28	14.65	63.73	65.40	77.05	0.51	355.17M
	6540.00	0.31	355.17	6539.47	-64.21	15.08	63.65	65.41	76.67	0.12	103.36M
	6635.00	0.22	103.36	6634.47	-64.37	15.29	63.81	65.61	76.52	0.46	122.47M
	6731.00	0.31	122.47	6730.47	-64.76	15.11	64.20	65.96	76.76	0.13	82.66M
	6826.00	0.31	82.66	6825.46	-65.23	15.01	64.68	66.39	76.94	0.22	345.19M
	6920.00	0.22	345.19	6919.46	-65.45	15.21	64.88	66.64	76.80	0.43	246.97M
	7015.00	0.31	246.97	7014.46	-65.17	15.29	64.60	66.38	76.68	0.43	123.27M
	7111.00	0.88	123.27	7110.46	-65.52	14.78	64.98	66.64	77.18	1.13	147.79M
	7206.00	0.22	147.79	7205.46	-66.21	14.23	65.68	67.21	77.78	0.72	121.16M
	7301.00	1.01	121.16	7300.45	-67.00	13.64	66.50	67.88	78.41	0.86	180.09M
	7397.00	0.48	180.09	7396.44	-67.68	12.80	67.22	68.43	79.22	0.90	183.08M
Final Extreme Survey	7492.00	0.62	183.08	7491.44	-67.62	11.89	67.19	68.24	79.97	0.15	219.07M
	7588.00	0.70	219.07	7587.43	-67.18	10.92	66.79	67.68	80.72	0.43	218.19M
	7683.00	0.48	218.19	7682.43	-66.54	10.15	66.18	66.96	81.28	0.23	256.56M
	7755.00	1.02	256.56	7754.42	-65.72	9.77	65.37	66.10	81.50	0.99	262.54M
	7787.00	3.12	262.54	7786.40	-64.57	9.59	64.23	64.94	81.51	6.59	264.99M
	7818.00	5.58	264.99	7817.31	-62.22	9.35	61.89	62.60	81.41	7.96	267.72M
	7850.00	8.36	267.72	7849.07	-58.34	9.12	58.02	58.73	81.07	8.75	21.21R
	7882.00	10.21	271.72	7880.65	-53.19	9.11	52.86	53.64	80.22	6.12	36.15R
	7913.00	11.77	277.13	7911.08	-47.33	9.58	46.98	47.94	78.47	6.03	0.7L
	7945.00	12.86	277.07	7942.34	-40.59	10.43	40.20	41.53	75.46	3.41	58.32R
	7975.00	13.09	278.68	7971.57	-33.96	11.35	33.53	35.40	71.30	1.43	5.76L
	8009.00	13.75	278.40	8004.65	-26.22	12.52	25.73	28.61	64.05	1.95	110.54L
	8040.00	13.55	275.99	8034.77	-19.00	13.44	18.47	22.84	53.96	1.94	22.62L
	8072.00	15.39	273.13	8065.76	-11.07	14.06	10.50	17.55	36.75	6.17	15.9L
	8104.00	18.19	270.59	8096.39	-1.85	14.35	1.27	14.40	5.04	9.04	8.37L
Survey 2-Apr-13	8135.00	21.22	269.36	8125.57	8.59	14.33	-9.18	17.02	327.35	9.86	0.32R
	8167.00	24.15	269.40	8155.09	20.93	14.20	-21.52	25.79	303.41	9.16	1.88L
	8199.00	26.91	269.20	8183.96	34.71	14.03	-35.31	38.00	291.67	8.63	7.63R
	8231.00	29.05	269.79	8212.22	49.72	13.90	-50.32	52.21	285.44	6.74	8.96L
	8263.00	30.84	269.24	8239.95	65.68	13.76	-66.30	67.71	281.73	5.66	26.03R
	8294.00	32.64	270.86	8266.31	81.97	13.78	-82.60	83.75	279.47	6.42	29.35R
	8326.00	34.80	272.97	8292.93	99.69	14.39	-100.35	101.38	278.16	7.68	17.35R
	8358.00	36.30	273.76	8318.96	118.20	15.48	-118.93	119.93	277.42	4.90	5.75L
	8390.00	37.95	273.49	8344.48	137.41	16.70	-138.20	139.21	276.89	5.18	119.74R
	8422.00	37.33	275.32	8369.82	156.81	18.20	-157.68	158.73	276.58	3.99	146.79L
	8454.00	36.72	274.65	8395.36	175.92	19.87	-176.88	177.99	276.41	2.29	4.25L
	8486.00	39.28	274.35	8420.58	195.48	21.42	-196.52	197.68	276.22	8.02	25.1L
	8518.00	42.60	272.07	8444.75	216.35	22.58	-217.45	218.62	275.93	11.38	11.57L
Survey 4-Apr-13	8549.00	45.68	271.19	8466.99	237.89	23.19	-239.03	240.15	275.54	10.13	32.82L
	8584.00	48.63	268.68	8490.79	263.52	23.15	-264.68	265.69	275.00	9.93	5.57L
	8616.00	52.89	268.16	8511.03	288.30	22.46	-289.45	290.32	274.44	13.37	1.72L

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	8648.00	58.28	267.97	8529.11	314.69	21.57	-315.82	316.56	273.91	16.85	15.95L
	8680.00	64.16	266.11	8544.51	342.72	20.11	-343.82	344.41	273.35	19.07	15.11L
	8708.00	69.70	264.52	8555.48	368.44	18.00	-369.48	369.92	272.79	20.46	1.51L
	8741.00	75.22	264.37	8565.42	399.85	14.95	-400.79	401.07	272.14	16.73	10.98L
	8773.00	80.67	263.30	8572.10	431.06	11.59	-431.89	432.04	271.54	17.34	19.67L
	8807.00	84.18	262.04	8576.58	464.63	7.29	-465.31	465.37	270.90	10.96	20.57L
	8839.00	87.11	260.94	8579.01	496.35	2.57	-496.86	496.87	270.30	9.78	16.73L
	8871.00	90.14	260.03	8579.78	528.08	-2.72	-528.41	528.42	269.70	9.89	13.79L
	8903.00	91.24	259.76	8579.40	559.79	-8.34	-559.91	559.97	269.15	3.54	18.43L
	8931.00	91.48	259.68	8578.73	587.51	-13.33	-587.45	587.60	268.70	0.90	109.98L
	9027.00	91.20	258.91	8576.49	682.46	-31.16	-681.75	682.47	267.38	0.85	139.77L
	9122.00	91.07	258.80	8574.60	776.32	-49.52	-774.94	776.53	266.34	0.18	40.92R
	9217.00	92.89	260.38	8571.32	870.31	-66.67	-868.32	870.87	265.61	2.54	74.63R
	9312.00	94.03	264.57	8565.59	964.73	-79.09	-962.31	965.55	265.30	4.56	123.14R
	9407.00	92.54	266.85	8560.14	1059.51	-86.18	-1056.88	1060.38	265.34	2.86	69.75R
	9503.00	92.68	267.23	8555.77	1155.40	-91.14	-1152.65	1156.24	265.48	0.42	22.8R
	9598.00	93.06	267.39	8551.01	1250.28	-95.59	-1247.42	1251.08	265.62	0.43	143.95R
	9693.00	91.48	268.54	8547.25	1345.20	-98.96	-1342.28	1345.93	265.78	2.06	120.97R
	9789.00	91.24	268.94	8544.97	1441.15	-101.07	-1438.23	1441.78	265.98	0.49	106.56R
	9884.00	91.13	269.31	8543.01	1536.10	-102.52	-1533.20	1536.63	266.17	0.41	75.26R
	9979.00	91.44	270.49	8540.88	1631.01	-102.68	-1628.18	1631.41	266.39	1.28	79.82L
	10074.00	91.51	270.10	8538.43	1725.87	-102.20	-1723.14	1726.17	266.61	0.42	61.25R
	10169.00	91.68	270.41	8535.79	1820.74	-101.77	-1818.11	1820.95	266.80	0.37	89.29R
	10264.00	91.69	271.23	8532.99	1915.55	-100.41	-1913.05	1915.69	267.00	0.86	135.01L
	10359.00	91.34	270.88	8530.48	2010.36	-98.67	-2008.00	2010.43	267.19	0.52	44.99L
	10455.00	91.68	270.54	8527.95	2106.19	-97.48	-2103.96	2106.22	267.35	0.50	117.45L
	10550.00	90.89	269.02	8525.82	2201.10	-97.84	-2198.94	2201.11	267.45	1.80	1.94L
	10645.00	91.48	269.00	8523.86	2296.05	-99.48	-2293.90	2296.06	267.52	0.62	113.96L
	10740.00	91.24	268.46	8521.60	2391.00	-101.59	-2388.85	2391.01	267.56	0.62	56.49L
	10835.00	91.69	267.78	8519.17	2485.97	-104.70	-2483.77	2485.97	267.59	0.86	69.29L
	10930.00	91.86	267.33	8516.23	2580.92	-108.75	-2578.63	2580.93	267.58	0.51	10.73R
	11025.00	92.44	267.44	8512.67	2675.86	-113.08	-2673.47	2675.86	267.58	0.62	152.42R
	11120.00	90.41	268.50	8510.30	2770.82	-116.45	-2768.37	2770.82	267.59	2.41	130.88L
	11215.00	89.83	267.83	8510.11	2865.81	-119.49	-2863.32	2865.82	267.61	0.93	30.02L
	11311.00	90.28	267.57	8510.01	2961.81	-123.34	-2959.25	2961.81	267.61	0.54	59.57L
	11406.00	90.65	266.94	8509.24	3056.81	-127.89	-3054.13	3056.81	267.60	0.77	19.57R
	11502.00	91.10	267.10	8507.78	3152.79	-132.88	-3149.99	3152.79	267.58	0.50	26.17L
	11596.00	91.69	266.81	8505.49	3246.75	-137.87	-3243.83	3246.76	267.57	0.70	81.91L
	11691.00	91.86	265.61	8502.54	3341.68	-144.15	-3338.58	3341.69	267.53	1.28	151.11R
	11786.00	90.41	266.41	8500.66	3436.61	-150.76	-3433.32	3436.63	267.49	1.74	23.53L
	11881.00	91.03	266.14	8499.47	3531.58	-156.93	-3528.11	3531.60	267.45	0.71	55.25L
	11976.00	91.55	265.39	8497.33	3626.50	-163.94	-3622.83	3626.54	267.41	0.96	133.2R
	12073.00	90.00	267.04	8496.02	3723.45	-170.35	-3719.60	3723.50	267.38	2.33	20.79R
	12167.00	90.79	267.34	8495.37	3817.45	-174.95	-3813.49	3817.50	267.37	0.90	49.45L

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	12262.00	91.44	266.58	8493.52	3912.42	-179.99	-3908.33	3912.48	267.36	1.05	53.84L
	12358.00	92.17	265.58	8490.50	4008.33	-186.55	-4004.06	4008.40	267.33	1.29	150.91R
	12453.00	90.48	266.52	8488.30	4103.27	-193.09	-4098.81	4103.35	267.30	2.04	91.93L
	12549.00	90.45	265.63	8487.52	4199.23	-199.66	-4194.58	4199.33	267.27	0.93	1.67L
	12643.00	91.48	265.60	8485.94	4293.15	-206.85	-4288.29	4293.27	267.24	1.10	28.74L
	12738.00	92.30	265.15	8482.81	4388.02	-214.51	-4382.92	4388.17	267.20	0.98	143.25R
	12833.00	90.21	266.71	8480.73	4482.95	-221.25	-4477.65	4483.12	267.17	2.74	14.04L
	12928.00	90.65	266.60	8480.01	4577.93	-226.79	-4572.49	4578.11	267.16	0.48	106.69R
	13024.00	90.17	268.20	8479.33	4673.92	-231.14	-4668.38	4674.10	267.17	1.74	26.56R
	13119.00	90.83	268.53	8478.50	4768.91	-233.85	-4763.34	4769.08	267.19	0.78	21.6R
	13214.00	91.89	268.95	8476.24	4863.87	-235.94	-4858.29	4864.02	267.22	1.20	158.06R
	13309.00	90.45	269.53	8474.30	4958.81	-237.20	-4953.26	4958.94	267.26	1.63	71.56L
	13404.00	90.65	268.93	8473.39	5053.77	-238.48	-5048.25	5053.88	267.30	0.67	39.43L
	13500.00	91.27	268.42	8471.78	5149.74	-240.70	-5144.21	5149.83	267.32	0.84	29.52L
	13595.00	92.17	267.91	8468.93	5244.69	-243.74	-5239.11	5244.78	267.34	1.09	125.13R
	13691.00	91.41	268.99	8465.93	5340.63	-246.33	-5335.03	5340.71	267.36	1.38	84.11L
	13786.00	91.48	268.31	8463.54	5435.59	-248.57	-5429.97	5435.66	267.38	0.72	0.43L
	13881.00	92.82	268.30	8459.97	5530.51	-251.38	-5524.86	5530.58	267.39	1.41	162.21R
	13976.00	90.17	269.15	8457.49	5625.46	-253.49	-5619.80	5625.51	267.42	2.93	38.16L
	14071.00	90.31	269.04	8457.10	5720.43	-254.99	-5714.78	5720.47	267.45	0.19	44.68L
Survey 9-Apr-13	14167.00	91.24	268.12	8455.80	5816.40	-257.37	-5810.74	5816.44	267.46	1.36	30.94L
	14262.00	92.54	267.34	8452.66	5911.35	-261.13	-5905.61	5911.38	267.47	1.60	156.69R
	14357.00	90.52	268.21	8450.13	6006.31	-264.82	-6000.50	6006.34	267.47	2.31	27.24R
	14453.00	92.48	269.22	8447.61	6102.25	-266.97	-6096.44	6102.28	267.49	2.30	144.64R
	14548.00	91.00	270.27	8444.73	6197.14	-267.39	-6191.39	6197.16	267.53	1.91	64.64L
	14644.00	91.27	269.70	8442.83	6293.05	-267.42	-6287.37	6293.06	267.56	0.66	22.5L
	14739.00	93.03	268.97	8439.26	6387.93	-268.52	-6382.29	6387.94	267.59	2.01	133.86R
	14835.00	91.79	270.26	8435.23	6483.79	-269.16	-6478.20	6483.79	267.62	1.86	100.69L
	14931.00	91.62	269.36	8432.37	6579.68	-269.48	-6574.16	6579.68	267.65	0.95	24.85L
	15026.00	93.99	268.26	8427.72	6674.54	-271.45	-6669.02	6674.54	267.67	2.75	39.12L
Final Survey Proj to TD	15121.00	95.47	267.05	8419.89	6769.21	-275.32	-6763.61	6769.21	267.67	2.01	17.08L
	15216.00	97.31	266.48	8409.32	6863.60	-280.65	-6857.86	6863.60	267.66	2.03	15.87L
	15266.00	98.77	266.06	8402.32	6913.10	-283.87	-6907.27	6913.10	267.65	3.04	HS
	15329.00	98.77	266.06	8392.72	6975.34	-288.15	-6969.38	6975.34	267.63	0.00	

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

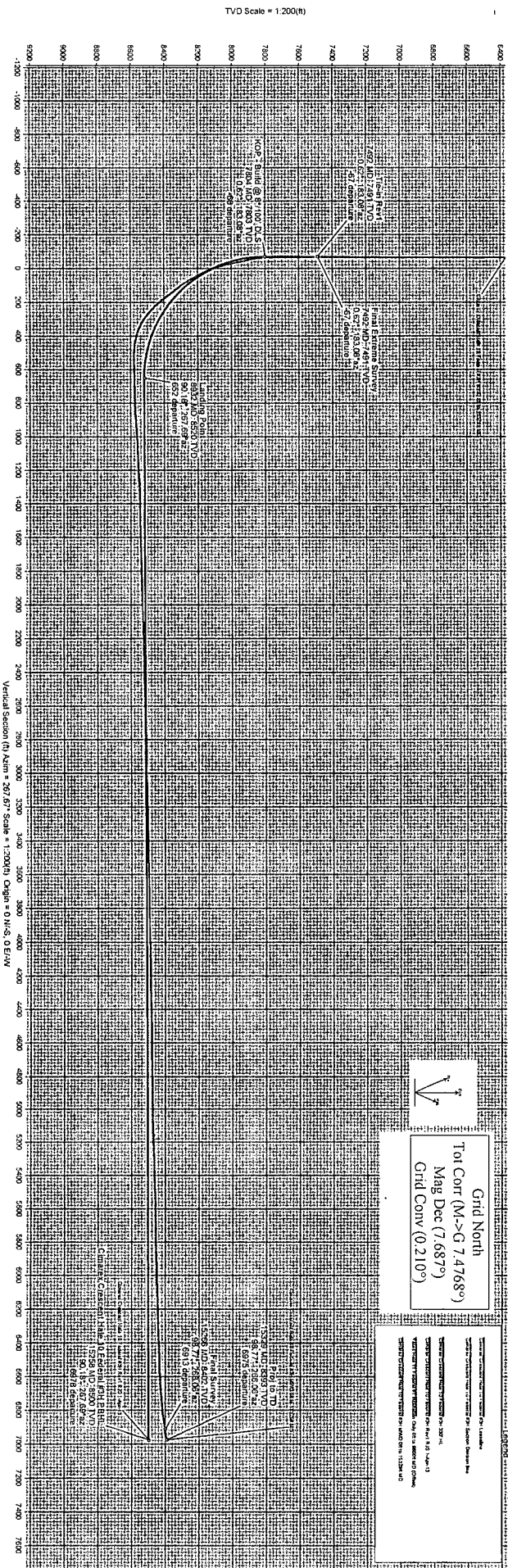
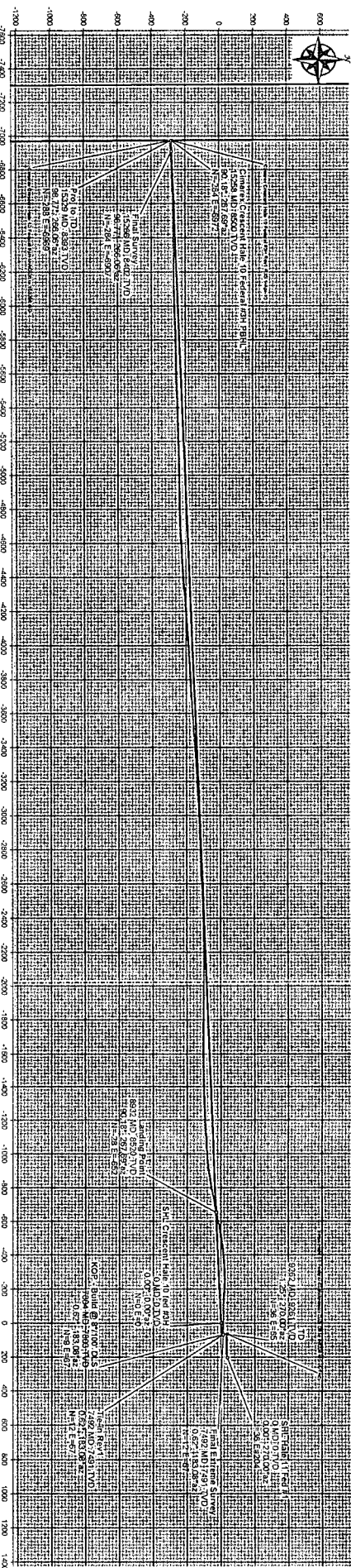
Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
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Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
		0.000	18.000		Act Stns	30.000	30.000	SLB_MWD-POOR-Depth Only		Original Borehole / Cimarex Crescent Hale 10 Federal #3H	
		18.000	468.000		1/98.425	30.000	30.000	SLB_MWD-POOR		Original Borehole / Cimarex Crescent Hale 10 Federal #3H	
		468.000	7492.000		Act Stns	30.000	30.000	SLB_MWD-POOR		Original Borehole / Cimarex Crescent Hale 10 Federal #3H	
		7492.000	15266.000		Act Stns	30.000	30.000	SLB_MWD-STD		Original Borehole / Cimarex Crescent Hale 10 Federal #3H	
		15266.000	15329.000		Act Stns	30.000	30.000	SLB_BLIND+TREND		Original Borehole / Cimarex Crescent Hale 10 Federal #3H	



STRUCTURE

Cactus 101

[illegible]

Grid North
Tot Corr (M->G 7.4768°)
Mag Dec (7.687°)
Grid Conv (0.210°)

[illegible]

Drawn By: R. Schneider
Date Created: April 01, 2013 07:28:45
Checked By: _____
Checked Date: _____
Approved By: _____
Approved Date: _____