



Company: Legacy
 Well: Hamon A Federal Com 1HR
 Location: Lea Co., NM
 Rig: Pulling Unit

Job Number: 61456
 Grid Corr.: -0.39
 Lat: 32.57
 Long: -103.60

Date: 06-26-17
 Calculation Method: Minimum Curvature
 Proposed Azimuth:
 RKB - MSL in feet: Ground
 Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
Enter Tie-In Survey on Line 10													
FIELD COPY, NON-DEFINITIVE													
TIE IN	0			0	0	0	0	0					
Gyro	100.00	0.51	316.35	100	100.00	0.32	0.32 N	0.31 W	0.45	316.35	0.51	0.51	316.35
	125.00	0.48	296.63	25	125.00	0.45	0.45 N	0.48 W	0.66	313.26	0.69	-0.12	-78.88
	150.00	0.21	326.65	25	150.00	0.53	0.53 N	0.60 W	0.80	311.88	1.26	-1.08	120.08
	175.00	0.65	102.53	25	175.00	0.54	0.54 N	0.48 W	0.73	318.29	3.26	1.76	-896.48
	200.00	1.56	87.48	25	199.99	0.53	0.53 N	0.00 W	0.53	359.48	3.79	3.64	-60.20
	225.00	1.50	104.42	25	224.98	0.46	0.46 N	0.65 E	0.80	54.81	1.82	-0.24	67.76
	250.00	1.58	112.18	25	249.97	0.25	0.25 N	1.29 E	1.31	79.09	0.89	0.32	31.04
	275.00	1.71	114.88	25	274.96	-0.04	0.04 S	1.95 E	1.95	91.14	0.61	0.52	10.80
	300.00	1.88	110.49	25	299.95	-0.34	0.34 S	2.67 E	2.69	97.25	0.87	0.68	-17.56
	325.00	1.70	111.12	25	324.94	-0.62	0.62 S	3.40 E	3.45	100.28	0.72	-0.72	2.52
	350.00	1.27	110.45	25	349.93	-0.85	0.85 S	4.00 E	4.09	101.94	1.72	-1.72	-2.68
	375.00	1.21	122.43	25	374.93	-1.09	1.09 S	4.49 E	4.62	103.60	1.06	-0.24	47.92
	400.00	1.21	134.01	25	399.92	-1.41	1.41 S	4.90 E	5.10	106.06	0.98	0.00	46.32
	425.00	1.15	136.53	25	424.91	-1.78	1.78 S	5.26 E	5.55	108.65	0.32	-0.24	10.08
	450.00	1.17	132.10	25	449.91	-2.13	2.13 S	5.62 E	6.01	110.74	0.37	0.08	-17.72
	475.00	0.91	135.60	25	474.90	-2.44	2.44 S	5.95 E	6.43	112.31	1.07	-1.04	14.00
	500.00	0.90	151.24	25	499.90	-2.76	2.76 S	6.18 E	6.77	114.02	0.99	-0.04	62.56
	525.00	1.11	168.20	25	524.90	-3.16	3.16 S	6.33 E	7.08	116.57	1.45	0.84	67.84
	550.00	1.12	155.91	25	549.89	-3.62	3.62 S	6.48 E	7.42	119.23	0.96	0.04	-49.16
	575.00	1.02	163.99	25	574.89	-4.06	4.06 S	6.64 E	7.78	121.46	0.72	-0.40	32.32
	600.00	0.85	175.55	25	599.89	-4.46	4.46 S	6.71 E	8.06	123.60	1.01	-0.68	46.24
	625.00	0.89	189.06	25	624.88	-4.84	4.84 S	6.70 E	8.26	125.83	0.83	0.16	54.04
	650.00	1.09	200.40	25	649.88	-5.25	5.25 S	6.59 E	8.42	128.57	1.12	0.80	45.36
	675.00	1.22	189.09	25	674.87	-5.74	5.74 S	6.46 E	8.64	131.61	1.05	0.52	-45.24
	700.00	1.23	189.14	25	699.87	-6.27	6.27 S	6.38 E	8.94	134.50	0.04	0.04	0.20
	725.00	1.10	196.29	25	724.86	-6.76	6.76 S	6.27 E	9.22	137.17	0.78	-0.52	28.60
	750.00	1.28	204.71	25	749.86	-7.24	7.24 S	6.08 E	9.46	139.99	1.00	0.72	33.68



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Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	775.00	1.54	210.33	25	774.85	-7.79	7.79 S	5.80 E	9.71	143.35	1.18	1.04	22.48
	800.00	1.66	202.07	25	799.84	-8.41	8.41 S	5.49 E	10.05	146.88	1.04	0.48	-33.04
	825.00	1.40	203.94	25	824.83	-9.03	9.03 S	5.23 E	10.43	149.92	1.06	-1.04	7.48
	850.00	1.39	222.34	25	849.82	-9.53	9.53 S	4.90 E	10.72	152.79	1.78	-0.04	73.60
	875.00	1.67	212.16	25	874.82	-10.06	10.06 S	4.50 E	11.03	155.89	1.56	1.12	-40.72
	900.00	1.56	199.88	25	899.81	-10.69	10.69 S	4.19 E	11.49	158.58	1.45	-0.44	-49.12
	925.00	1.37	205.07	25	924.80	-11.28	11.28 S	3.95 E	11.96	160.70	0.93	-0.76	20.76
	950.00	1.51	213.78	25	949.79	-11.83	11.83 S	3.64 E	12.38	162.89	1.04	0.56	34.84
	975.00	1.64	215.54	25	974.78	-12.39	12.39 S	3.25 E	12.81	165.30	0.55	0.52	7.04
	1000.00	1.54	216.37	25	999.77	-12.95	12.95 S	2.84 E	13.26	167.62	0.41	-0.40	3.32
	1025.00	1.56	207.25	25	1024.76	-13.53	13.53 S	2.49 E	13.75	169.58	0.99	0.08	-36.48
	1050.00	1.49	219.59	25	1049.75	-14.08	14.08 S	2.13 E	14.24	171.42	1.34	-0.28	49.36
	1075.00	1.64	217.31	25	1074.74	-14.62	14.62 S	1.70 E	14.71	173.36	0.65	0.60	-9.12
	1100.00	1.56	214.94	25	1099.73	-15.18	15.18 S	1.29 E	15.23	175.14	0.42	-0.32	-9.48
	1125.00	1.41	219.63	25	1124.72	-15.69	15.69 S	0.90 E	15.72	176.72	0.77	-0.60	18.76
	1150.00	1.60	220.81	25	1149.72	-16.20	16.20 S	0.47 E	16.20	178.32	0.77	0.76	4.72
	1175.00	1.69	221.45	25	1174.71	-16.74	16.74 S	0.00 E	16.74	179.99	0.37	0.36	2.56
	1200.00	1.50	214.99	25	1199.70	-17.28	17.28 S	0.43 W	17.29	181.42	1.05	-0.76	-25.84
	1225.00	1.64	217.20	25	1224.69	-17.83	17.83 S	0.83 W	17.85	182.68	0.61	0.56	8.84
	1250.00	1.63	223.63	25	1249.68	-18.38	18.38 S	1.29 W	18.42	184.03	0.73	-0.04	25.72
	1275.00	1.66	211.87	25	1274.67	-18.94	18.94 S	1.73 W	19.02	185.22	1.35	0.12	-47.04
	1300.00	1.44	215.97	25	1299.66	-19.50	19.50 S	2.11 W	19.62	186.17	0.98	-0.88	16.40
	1325.00	1.78	221.26	25	1324.65	-20.05	20.05 S	2.55 W	20.21	187.24	1.48	1.36	21.16
	1350.00	1.63	213.82	25	1349.64	-20.64	20.64 S	3.00 W	20.85	188.28	1.07	-0.60	-29.76
	1375.00	1.44	219.26	25	1374.63	-21.17	21.17 S	3.40 W	21.45	189.12	0.96	-0.76	21.76
	1400.00	1.82	217.83	25	1399.62	-21.73	21.73 S	3.84 W	22.07	190.02	1.53	1.52	-5.72
	1425.00	1.57	212.66	25	1424.61	-22.33	22.33 S	4.27 W	22.74	190.82	1.17	-1.00	-20.68
	1450.00	1.64	223.61	25	1449.60	-22.88	22.88 S	4.70 W	23.36	191.61	1.26	0.28	43.80
	1475.00	1.68	217.84	25	1474.59	-23.43	23.43 S	5.17 W	23.99	192.45	0.69	0.16	-23.08
	1500.00	1.59	212.64	25	1499.58	-24.01	24.01 S	5.58 W	24.65	193.09	0.69	-0.36	-20.80



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Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	1525.00	1.72	218.07	25	1524.57	-24.60	24.60 S	6.00 W	25.32	193.71	0.81	0.52	21.72
	1550.00	1.88	212.98	25	1549.55	-25.24	25.24 S	6.46 W	26.05	194.35	0.90	0.64	-20.36
	1575.00	1.58	214.28	25	1574.54	-25.87	25.87 S	6.87 W	26.76	194.88	1.21	-1.20	5.20
	1600.00	1.65	221.91	25	1599.53	-26.42	26.42 S	7.31 W	27.41	195.46	0.90	0.28	30.52
	1625.00	1.80	219.13	25	1624.52	-26.99	26.99 S	7.80 W	28.09	196.11	0.69	0.60	-11.12
	1650.00	1.88	211.27	25	1649.51	-27.65	27.65 S	8.26 W	28.85	196.63	1.06	0.32	-31.44
	1675.00	1.56	213.15	25	1674.50	-28.28	28.28 S	8.66 W	29.58	197.02	1.30	-1.28	7.52
	1700.00	1.72	219.67	25	1699.49	-28.86	28.86 S	9.08 W	30.25	197.47	0.98	0.64	26.08
	1725.00	1.54	220.86	25	1724.48	-29.40	29.40 S	9.54 W	30.91	197.98	0.73	-0.72	4.76
	1750.00	1.52	211.54	25	1749.47	-29.93	29.93 S	9.93 W	31.54	198.36	1.00	-0.08	-37.28
	1775.00	1.46	207.12	25	1774.46	-30.50	30.50 S	10.25 W	32.18	198.58	0.52	-0.24	-17.68
	1800.00	1.18	214.98	25	1799.45	-31.00	31.00 S	10.55 W	32.74	198.79	1.33	-1.12	31.44
	1825.00	1.44	210.69	25	1824.44	-31.48	31.48 S	10.85 W	33.30	199.03	1.11	1.04	-17.16
	1850.00	1.35	210.09	25	1849.44	-32.00	32.00 S	11.16 W	33.89	199.23	0.36	-0.36	-2.40
	1875.00	1.20	207.10	25	1874.43	-32.49	32.49 S	11.43 W	34.44	199.38	0.66	-0.60	-11.96
	1900.00	1.31	214.45	25	1899.43	-32.96	32.96 S	11.71 W	34.98	199.56	0.78	0.44	29.40
	1925.00	1.39	207.08	25	1924.42	-33.46	33.46 S	12.01 W	35.55	199.74	0.76	0.32	-29.48
	1950.00	1.22	191.22	25	1949.41	-33.99	33.99 S	12.20 W	36.12	199.74	1.59	-0.68	-63.44
	1975.00	0.75	182.10	25	1974.41	-34.42	34.42 S	12.26 W	36.54	199.60	1.98	-1.88	-36.48
	2000.00	0.86	178.58	25	1999.41	-34.77	34.77 S	12.26 W	36.87	199.42	0.48	0.44	-14.08
	2025.00	0.88	159.29	25	2024.40	-35.14	35.14 S	12.19 W	37.19	199.13	1.17	0.08	-77.16
	2050.00	0.74	130.29	25	2049.40	-35.42	35.42 S	11.99 W	37.40	198.71	1.71	-0.56	-116.00
	2075.00	0.76	145.63	25	2074.40	-35.66	35.66 S	11.78 W	37.56	198.28	0.80	0.08	61.36
	2100.00	0.90	139.48	25	2099.40	-35.95	35.95 S	11.56 W	37.76	197.82	0.66	0.56	-24.60
	2125.00	0.99	100.99	25	2124.39	-36.14	36.14 S	11.22 W	37.84	197.24	2.51	0.36	-153.96
	2150.00	1.03	104.40	25	2149.39	-36.24	36.24 S	10.79 W	37.81	196.58	0.29	0.16	13.64
	2175.00	1.17	104.79	25	2174.38	-36.36	36.36 S	10.32 W	37.79	195.85	0.56	0.56	1.56
	2200.00	1.54	98.86	25	2199.38	-36.47	36.47 S	9.74 W	37.75	194.96	1.58	1.48	-23.72
	2225.00	1.41	86.67	25	2224.37	-36.51	36.51 S	9.11 W	37.63	194.00	1.36	-0.52	-48.76
	2250.00	1.30	91.88	25	2249.36	-36.50	36.50 S	8.52 W	37.48	193.13	0.66	-0.44	20.84



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Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	2275.00	1.50	91.44	25	2274.35	-36.52	36.52 S	7.90 W	37.36	192.21	0.80	0.80	-1.76
	2300.00	1.80	84.65	25	2299.34	-36.49	36.49 S	7.19 W	37.19	191.14	1.43	1.20	-27.16
	2325.00	1.41	73.98	25	2324.33	-36.37	36.37 S	6.50 W	36.94	190.13	1.96	-1.56	-42.68
	2350.00	1.83	84.89	25	2349.32	-36.25	36.25 S	5.81 W	36.71	189.10	2.08	1.68	43.64
	2375.00	1.86	74.96	25	2374.31	-36.11	36.11 S	5.02 W	36.45	187.91	1.28	0.12	-39.72
	2400.00	1.87	62.51	25	2399.30	-35.81	35.81 S	4.26 W	36.07	186.79	1.62	0.04	-49.80
	2425.00	2.01	65.52	25	2424.28	-35.44	35.44 S	3.50 W	35.61	185.64	0.69	0.56	12.04
	2450.00	2.20	54.75	25	2449.27	-34.98	34.98 S	2.71 W	35.09	184.43	1.75	0.76	-43.08
	2475.00	2.26	56.11	25	2474.25	-34.43	34.43 S	1.91 W	34.48	183.18	0.32	0.24	5.44
	2500.00	2.31	32.67	25	2499.23	-33.73	33.73 S	1.23 W	33.76	182.09	3.72	0.20	-93.76
	2525.00	2.23	35.02	25	2524.21	-32.91	32.91 S	0.68 W	32.92	181.18	0.49	-0.32	9.40
	2550.00	2.53	28.34	25	2549.19	-32.03	32.03 S	0.14 W	32.03	180.25	1.63	1.20	-26.72
	2575.00	2.38	33.96	25	2574.16	-31.11	31.11 S	0.41 E	31.11	179.24	1.13	-0.60	22.48
	2600.00	2.61	31.76	25	2599.14	-30.20	30.20 S	1.00 E	30.21	178.10	1.00	0.92	-8.80
	2625.00	2.38	31.17	25	2624.12	-29.27	29.27 S	1.57 E	29.31	176.93	0.93	-0.92	-2.36
	2650.00	2.35	35.70	25	2649.10	-28.41	28.41 S	2.14 E	28.49	175.69	0.76	-0.12	18.12
	2675.00	2.53	33.05	25	2674.07	-27.53	27.53 S	2.74 E	27.66	174.32	0.85	0.72	-10.60
	2700.00	2.34	31.99	25	2699.05	-26.63	26.63 S	3.31 E	26.84	172.91	0.78	-0.76	-4.24
	2725.00	2.52	37.79	25	2724.03	-25.77	25.77 S	3.92 E	26.06	171.35	1.22	0.72	23.20
	2750.00	2.31	37.39	25	2749.01	-24.93	24.93 S	4.56 E	25.35	169.63	0.84	-0.84	-1.60
	2775.00	2.08	35.46	25	2773.99	-24.16	24.16 S	5.13 E	24.70	168.01	0.97	-0.92	-7.72
	2800.00	1.88	36.41	25	2798.97	-23.46	23.46 S	5.64 E	24.13	166.49	0.81	-0.80	3.80
	2825.00	2.05	32.87	25	2823.96	-22.76	22.76 S	6.12 E	23.57	164.94	0.84	0.68	-14.16
	2850.00	1.81	35.31	25	2848.94	-22.06	22.06 S	6.59 E	23.02	163.36	1.01	-0.96	9.76
	2875.00	2.02	31.07	25	2873.93	-21.36	21.36 S	7.05 E	22.49	161.73	1.01	0.84	-16.96
	2900.00	1.80	36.82	25	2898.92	-20.67	20.67 S	7.51 E	21.99	160.02	1.17	-0.88	23.00
	2925.00	1.93	34.44	25	2923.90	-20.01	20.01 S	7.99 E	21.54	158.24	0.61	0.52	-9.52
	2950.00	1.48	31.21	25	2948.89	-19.38	19.38 S	8.39 E	21.12	156.59	1.84	-1.80	-12.92
	2975.00	1.78	36.03	25	2973.88	-18.79	18.79 S	8.79 E	20.74	154.94	1.32	1.20	19.28
	3000.00	1.52	23.89	25	2998.87	-18.18	18.18 S	9.15 E	20.35	153.28	1.74	-1.04	-48.56



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							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	3025.00	1.69	33.88	25	3023.86	-17.57	17.57 S	9.49 E	19.97	151.62	1.31	0.68	39.96
	3050.00	1.71	25.02	25	3048.85	-16.92	16.92 S	9.85 E	19.58	149.79	1.05	0.08	-35.44
	3075.00	1.63	35.01	25	3073.84	-16.29	16.29 S	10.21 E	19.23	147.92	1.21	-0.32	39.96
	3100.00	1.74	29.30	25	3098.83	-15.67	15.67 S	10.60 E	18.92	145.91	0.80	0.44	-22.84
	3125.00	1.56	31.35	25	3123.82	-15.05	15.05 S	10.97 E	18.62	143.92	0.76	-0.72	8.20
	3150.00	1.77	31.92	25	3148.81	-14.43	14.43 S	11.35 E	18.36	141.82	0.84	0.84	2.28
	3175.00	1.45	32.81	25	3173.80	-13.84	13.84 S	11.72 E	18.14	139.73	1.28	-1.28	3.56
	3200.00	1.70	35.65	25	3198.79	-13.27	13.27 S	12.11 E	17.97	137.61	1.05	1.00	11.36
	3225.00	1.40	36.49	25	3223.78	-12.72	12.72 S	12.51 E	17.84	135.49	1.20	-1.20	3.36
	3250.00	1.48	48.92	25	3248.77	-12.27	12.27 S	12.93 E	17.82	133.48	1.29	0.32	49.72
	3275.00	1.08	48.15	25	3273.77	-11.90	11.90 S	13.35 E	17.88	131.70	1.60	-1.60	-3.08
	3300.00	1.10	94.10	25	3298.76	-11.76	11.76 S	13.77 E	18.10	130.49	3.40	0.08	183.80
	3325.00	0.94	92.05	25	3323.76	-11.78	11.78 S	14.21 E	18.46	129.66	0.66	-0.64	-8.20
	3350.00	1.10	117.38	25	3348.75	-11.90	11.90 S	14.63 E	18.86	129.12	1.89	0.64	101.32
	3375.00	1.05	111.17	25	3373.75	-12.09	12.09 S	15.06 E	19.31	128.77	0.51	-0.20	-24.84
	3400.00	1.09	134.59	25	3398.74	-12.34	12.34 S	15.44 E	19.77	128.64	1.74	0.16	93.68
	3425.00	1.44	132.23	25	3423.74	-12.72	12.72 S	15.84 E	20.32	128.76	1.42	1.40	-9.44
	3450.00	1.12	138.06	25	3448.73	-13.11	13.11 S	16.24 E	20.87	128.92	1.38	-1.28	23.32
	3475.00	1.40	139.18	25	3473.73	-13.52	13.52 S	16.60 E	21.41	129.17	1.12	1.12	4.48
	3500.00	1.13	137.69	25	3498.72	-13.94	13.94 S	16.97 E	21.96	129.40	1.09	-1.08	-5.96
	3525.00	1.45	144.47	25	3523.71	-14.38	14.38 S	17.32 E	22.51	129.70	1.42	1.28	27.12
	3550.00	1.55	147.59	25	3548.71	-14.92	14.92 S	17.68 E	23.13	130.16	0.52	0.40	12.48
	3575.00	1.21	144.00	25	3573.70	-15.42	15.42 S	18.02 E	23.71	130.56	1.40	-1.36	-14.36
	3600.00	1.67	148.50	25	3598.69	-15.94	15.94 S	18.36 E	24.32	130.97	1.89	1.84	18.00
	3625.00	1.34	160.85	25	3623.68	-16.53	16.53 S	18.65 E	24.92	131.55	1.84	-1.32	49.40
	3650.00	1.61	150.08	25	3648.67	-17.11	17.11 S	18.92 E	25.51	132.13	1.54	1.08	-43.08
	3675.00	1.55	147.19	25	3673.66	-17.70	17.70 S	19.28 E	26.17	132.56	0.40	-0.24	-11.56
	3700.00	1.54	158.46	25	3698.65	-18.30	18.30 S	19.58 E	26.80	133.05	1.21	-0.04	45.08
	3725.00	1.73	145.97	25	3723.64	-18.92	18.92 S	19.92 E	27.47	133.53	1.61	0.76	-49.96
	3750.00	1.36	149.83	25	3748.64	-19.49	19.49 S	20.28 E	28.13	133.86	1.54	-1.48	15.44



Company: Legacy
 Well: Hamon A Federal Com 1HR
 Location: Lea Co., NM
 Rig: Pulling Unit

Job Number: 61456
 Grid Corr.: -0.39
 Lat: 32.57
 Long: -103.60

Calculation Method: Minimum Curvature
 Proposed Azimuth:
 RKB - MSL in feet: Ground
 Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclina- tion (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	3775.00	1.39	143.75	25	3773.63	-19.99	19.99 S	20.61 E	28.71	134.13	0.60	0.12	-24.32
	3800.00	1.43	142.28	25	3798.62	-20.48	20.48 S	20.98 E	29.32	134.32	0.22	0.16	-5.88
	3825.00	1.46	123.75	25	3823.61	-20.91	20.91 S	21.43 E	29.94	134.29	1.86	0.12	-74.12
	3850.00	1.21	129.50	25	3848.61	-21.25	21.25 S	21.90 E	30.52	134.14	1.13	-1.00	23.00
	3875.00	1.45	132.34	25	3873.60	-21.63	21.63 S	22.34 E	31.10	134.08	1.00	0.96	11.36
	3900.00	1.24	110.77	25	3898.59	-21.94	21.94 S	22.83 E	31.66	133.87	2.18	-0.84	-86.28
	3925.00	1.05	109.62	25	3923.59	-22.11	22.11 S	23.29 E	32.12	133.51	0.77	-0.76	-4.60
	3950.00	1.25	71.65	25	3948.58	-22.11	22.11 S	23.77 E	32.46	132.92	3.09	0.80	-151.88
	3975.00	1.39	31.15	25	3973.58	-21.76	21.76 S	24.19 E	32.53	131.98	3.69	0.56	-162.00
	4000.00	1.57	28.90	25	3998.57	-21.20	21.20 S	24.51 E	32.40	130.86	0.76	0.72	-9.00
	4025.00	1.68	24.70	25	4023.56	-20.57	20.57 S	24.83 E	32.24	129.64	0.65	0.44	-16.80
	4050.00	1.59	36.03	25	4048.55	-19.95	19.95 S	25.18 E	32.13	128.39	1.34	-0.36	45.32
	4075.00	1.73	25.29	25	4073.54	-19.33	19.33 S	25.55 E	32.04	127.11	1.36	0.56	-42.96
	4100.00	1.43	26.80	25	4098.53	-18.71	18.71 S	25.85 E	31.91	125.90	1.21	-1.20	6.04
	4125.00	1.63	13.48	25	4123.52	-18.09	18.09 S	26.07 E	31.73	124.75	1.63	0.80	-53.28
	4150.00	1.47	10.20	25	4148.51	-17.43	17.43 S	26.21 E	31.48	123.62	0.73	-0.64	-13.12
	4175.00	1.58	355.24	25	4173.50	-16.77	16.77 S	26.24 E	31.14	122.58	1.65	0.44	1380.16
	4200.00	1.43	3.72	25	4198.49	-16.11	16.11 S	26.23 E	30.79	121.56	1.07	-0.60	-1406.08
	4225.00	1.36	346.93	25	4223.49	-15.51	15.51 S	26.19 E	30.44	120.64	1.65	-0.28	1372.84
	4250.00	1.56	353.29	25	4248.48	-14.89	14.89 S	26.08 E	30.03	119.72	1.03	0.80	25.44
	4275.00	1.35	349.10	25	4273.47	-14.26	14.26 S	25.98 E	29.64	118.76	0.94	-0.84	-16.76
	4300.00	1.64	343.64	25	4298.46	-13.63	13.63 S	25.83 E	29.20	117.82	1.29	1.16	-21.84
	4325.00	1.26	343.61	25	4323.45	-13.02	13.02 S	25.65 E	28.76	116.91	1.52	-1.52	-0.12
	4350.00	1.39	328.52	25	4348.45	-12.50	12.50 S	25.41 E	28.32	116.19	1.48	0.52	-60.36
	4375.00	1.44	333.13	25	4373.44	-11.96	11.96 S	25.11 E	27.82	115.46	0.50	0.20	18.44
	4400.00	1.23	328.21	25	4398.43	-11.45	11.45 S	24.83 E	27.34	114.76	0.96	-0.84	-19.68
	4425.00	1.57	332.83	25	4423.42	-10.92	10.92 S	24.53 E	26.85	113.99	1.43	1.36	18.48
	4450.00	1.22	333.72	25	4448.42	-10.37	10.37 S	24.26 E	26.38	113.15	1.40	-1.40	3.56
	4475.00	1.40	322.54	25	4473.41	-9.89	9.89 S	23.95 E	25.92	112.44	1.25	0.72	-44.72
	4500.00	1.50	330.47	25	4498.40	-9.37	9.37 S	23.61 E	25.40	111.64	0.90	0.40	31.72



Company: Legacy
 Well: Hamon A Federal Com 1HR
 Location: Lea Co., NM
 Rig: Pulling Unit

Job Number: 61456
 Grid Corr.: -0.39
 Lat: 32.57
 Long: -103.60

Calculation Method: Minimum Curvature
 Proposed Azimuth:
 RKB - MSL in feet: Ground
 Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	4525.00	1.19	325.62	25	4523.40	-8.87	8.87 S	23.30 E	24.93	110.84	1.32	-1.24	-19.40
	4550.00	1.51	330.32	25	4548.39	-8.37	8.37 S	22.99 E	24.46	110.00	1.35	1.28	18.80
	4575.00	1.22	326.69	25	4573.38	-7.86	7.86 S	22.68 E	24.00	109.11	1.21	-1.16	-14.52
	4600.00	1.42	323.41	25	4598.37	-7.39	7.39 S	22.35 E	23.54	108.29	0.85	0.80	-13.12
	4625.00	1.39	332.10	25	4623.37	-6.87	6.87 S	22.02 E	23.07	107.33	0.86	-0.12	34.76
	4650.00	1.46	322.09	25	4648.36	-6.35	6.35 S	21.69 E	22.60	106.32	1.03	0.28	-40.04
	4675.00	1.47	333.80	25	4673.35	-5.81	5.81 S	21.35 E	22.13	105.23	1.20	0.04	46.84
	4700.00	1.30	324.36	25	4698.34	-5.29	5.29 S	21.04 E	21.70	104.12	1.14	-0.68	-37.76
	4725.00	1.63	331.33	25	4723.34	-4.75	4.75 S	20.71 E	21.24	102.92	1.50	1.32	27.88
	4750.00	1.38	325.29	25	4748.33	-4.19	4.19 S	20.36 E	20.79	101.63	1.18	-1.00	-24.16
	4775.00	1.74	328.63	25	4773.32	-3.62	3.62 S	19.99 E	20.32	100.26	1.48	1.44	13.36
	4800.00	1.48	331.58	25	4798.31	-3.01	3.01 S	19.64 E	19.87	98.72	1.09	-1.04	11.80
	4825.00	1.68	324.80	25	4823.30	-2.43	2.43 S	19.28 E	19.43	97.18	1.09	0.80	-27.12
	4850.00	1.64	329.82	25	4848.29	-1.82	1.82 S	18.89 E	18.97	95.51	0.60	-0.16	20.08
	4875.00	1.30	334.39	25	4873.28	-1.26	1.26 S	18.59 E	18.63	93.86	1.44	-1.36	18.28
	4900.00	1.58	331.78	25	4898.27	-0.70	0.70 S	18.30 E	18.31	92.18	1.15	1.12	-10.44
	4925.00	1.54	344.78	25	4923.26	-0.07	0.07 S	18.05 E	18.05	90.22	1.42	-0.16	52.00
	4950.00	1.40	327.04	25	4948.25	0.51	0.51 N	17.79 E	17.80	88.35	1.90	-0.56	-70.96
	4975.00	1.64	337.96	25	4973.25	1.10	1.10 N	17.49 E	17.53	86.40	1.50	0.96	43.68
	5000.00	1.31	337.00	25	4998.24	1.69	1.69 N	17.25 E	17.33	84.39	1.32	-1.32	-3.84
	5025.00	1.62	336.20	25	5023.23	2.28	2.28 N	16.99 E	17.15	82.35	1.24	1.24	-3.20
	5050.00	1.45	343.09	25	5048.22	2.91	2.91 N	16.76 E	17.01	80.16	1.00	-0.68	27.56
	5075.00	1.53	332.49	25	5073.21	3.51	3.51 N	16.51 E	16.88	78.01	1.15	0.32	-42.40
	5100.00	1.52	347.87	25	5098.20	4.13	4.13 N	16.29 E	16.80	75.79	1.63	-0.04	61.52
	5125.00	1.37	340.80	25	5123.19	4.73	4.73 N	16.12 E	16.80	73.64	0.93	-0.60	-28.28
	5150.00	1.62	346.76	25	5148.19	5.36	5.36 N	15.94 E	16.82	71.42	1.18	1.00	23.84
	5175.00	1.44	349.52	25	5173.18	6.01	6.01 N	15.80 E	16.91	69.17	0.78	-0.72	11.04
	5200.00	1.57	346.92	25	5198.17	6.65	6.65 N	15.67 E	17.02	66.99	0.59	0.52	-10.40
	5225.00	1.19	353.85	25	5223.16	7.25	7.25 N	15.56 E	17.17	65.04	1.66	-1.52	27.72
	5250.00	1.37	350.53	25	5248.16	7.80	7.80 N	15.49 E	17.34	63.27	0.78	0.72	-13.28



Company: Legacy
Well: Hamon A Federal Com 1HR
Location: Lea Co., NM
Rig: Pulling Unit

Job Number: 61456
Grid Corr.: -0.39
Lat: 32.57
Long: -103.60

Calculation Method: Minimum Curvature
Proposed Azimuth:
RKB - MSL in feet: Ground
Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	5275.00	1.08	2.51	25	5273.15	8.33	8.33 N	15.45 E	17.55	61.67	1.54	-1.16	-1392.08
	5300.00	1.20	355.05	25	5298.14	8.82	8.82 N	15.44 E	17.78	60.24	0.76	0.48	1410.16
	5325.00	1.89	58.24	25	5323.14	9.30	9.30 N	15.76 E	18.30	59.45	6.89	2.76	-1187.24
	5350.00	2.17	60.66	25	5348.12	9.75	9.75 N	16.53 E	19.19	59.46	1.17	1.12	9.68
	5375.00	2.54	69.71	25	5373.10	10.18	10.18 N	17.46 E	20.21	59.76	2.09	1.48	36.20
	5400.00	2.37	64.02	25	5398.08	10.59	10.59 N	18.44 E	21.27	60.13	1.19	-0.68	-22.76
	5425.00	2.53	65.54	25	5423.05	11.05	11.05 N	19.41 E	22.33	60.35	0.69	0.64	6.08
	5450.00	2.42	61.22	25	5448.03	11.53	11.53 N	20.37 E	23.41	60.49	0.87	-0.44	-17.28
	5475.00	2.93	61.55	25	5473.00	12.09	12.09 N	21.40 E	24.58	60.53	2.04	2.04	1.32
	5500.00	3.38	53.56	25	5497.97	12.83	12.83 N	22.55 E	25.95	60.36	2.51	1.80	-31.96
	5525.00	2.83	55.69	25	5522.93	13.62	13.62 N	23.66 E	27.30	60.07	2.25	-2.20	8.52
	5550.00	4.28	61.11	25	5547.88	14.42	14.42 N	24.98 E	28.84	60.01	5.95	5.80	21.68
	5575.00	4.44	60.36	25	5572.81	15.35	15.35 N	26.64 E	30.74	60.06	0.68	0.64	-3.00
	5600.00	4.58	61.22	25	5597.73	16.30	16.30 N	28.36 E	32.71	60.10	0.62	0.56	3.44
	5625.00	4.60	59.84	25	5622.65	17.29	17.29 N	30.10 E	34.71	60.13	0.45	0.08	-5.52
	5650.00	4.75	60.19	25	5647.57	18.31	18.31 N	31.86 E	36.75	60.12	0.61	0.60	1.40
	5675.00	4.89	59.58	25	5672.48	19.36	19.36 N	33.68 E	38.85	60.11	0.60	0.56	-2.44
	5700.00	4.81	60.06	25	5697.39	20.42	20.42 N	35.51 E	40.96	60.09	0.36	-0.32	1.92
	5725.00	5.04	58.66	25	5722.30	21.52	21.52 N	37.35 E	43.11	60.05	1.04	0.92	-5.60
	5750.00	5.00	58.69	25	5747.20	22.66	22.66 N	39.22 E	45.30	59.99	0.16	-0.16	0.12
	5775.00	5.18	59.26	25	5772.10	23.80	23.80 N	41.12 E	47.51	59.94	0.75	0.72	2.28
	5800.00	5.17	58.24	25	5797.00	24.97	24.97 N	43.05 E	49.77	59.89	0.37	-0.04	-4.08
	5825.00	5.31	58.54	25	5821.90	26.17	26.17 N	45.00 E	52.05	59.82	0.57	0.56	1.20
	5850.00	5.31	56.38	25	5846.79	27.41	27.41 N	46.95 E	54.36	59.72	0.80	0.00	-8.64
	5875.00	5.31	56.88	25	5871.68	28.68	28.68 N	48.88 E	56.67	59.60	0.19	0.00	2.00
	5900.00	5.55	53.33	25	5896.57	30.04	30.04 N	50.82 E	59.03	59.41	1.65	0.96	-14.20
	5925.00	5.60	52.06	25	5921.45	31.51	31.51 N	52.75 E	61.44	59.15	0.53	0.20	-5.08
	5950.00	5.87	49.63	25	5946.33	33.09	33.09 N	54.68 E	63.91	58.82	1.45	1.08	-9.72
	5975.00	5.80	47.04	25	5971.20	34.77	34.77 N	56.58 E	66.41	58.43	1.09	-0.28	-10.36
	6000.00	5.91	44.80	25	5996.07	36.55	36.55 N	58.41 E	68.91	57.97	1.01	0.44	-8.96



Company: Legacy
Well: Hamon A Federal Com 1HR
Location: Lea Co., NM
Rig: Pulling Unit

Job Number: 61456
Grid Corr.: -0.39
Lat: 32.57
Long: -103.60

Calculation Method: Minimum Curvature
Proposed Azimuth:
RKB - MSL in feet: Ground
Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclina- tion (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	6025.00	6.00	44.70	25	6020.93	38.39	38.39 N	60.24 E	71.43	57.49	0.36	0.36	-0.40
	6050.00	6.03	44.24	25	6045.79	40.26	40.26 N	62.07 E	73.99	57.03	0.23	0.12	-1.84
	6075.00	6.09	44.53	25	6070.65	42.15	42.15 N	63.92 E	76.57	56.60	0.27	0.24	1.16
	6100.00	6.10	43.59	25	6095.51	44.05	44.05 N	65.77 E	79.16	56.18	0.40	0.04	-3.76
	6125.00	6.08	44.51	25	6120.37	45.96	45.96 N	67.61 E	81.75	55.79	0.40	-0.08	3.68
	6150.00	6.24	44.11	25	6145.23	47.88	47.88 N	69.48 E	84.38	55.43	0.66	0.64	-1.60
	6175.00	6.09	46.23	25	6170.08	49.77	49.77 N	71.39 E	87.03	55.12	1.09	-0.60	8.48
	6200.00	6.09	48.22	25	6194.94	51.57	51.57 N	73.33 E	89.65	54.88	0.84	0.00	7.96
	6225.00	6.21	48.57	25	6219.80	53.35	53.35 N	75.34 E	92.32	54.69	0.50	0.48	1.40
	6250.00	6.20	49.20	25	6244.65	55.13	55.13 N	77.37 E	95.00	54.53	0.28	-0.04	2.52
	6275.00	6.33	50.00	25	6269.50	56.90	56.90 N	79.45 E	97.72	54.39	0.63	0.52	3.20
	6300.00	6.25	49.50	25	6294.35	58.67	58.67 N	81.54 E	100.45	54.27	0.39	-0.32	-2.00
	6325.00	6.31	49.89	25	6319.20	60.44	60.44 N	83.63 E	103.18	54.14	0.29	0.24	1.56
	6350.00	6.40	49.30	25	6344.05	62.23	62.23 N	85.73 E	105.94	54.03	0.44	0.36	-2.36
	6375.00	6.30	49.37	25	6368.89	64.03	64.03 N	87.83 E	108.69	53.91	0.40	-0.40	0.28
	6400.00	6.44	49.82	25	6393.74	65.83	65.83 N	89.94 E	111.46	53.80	0.59	0.56	1.80
	6425.00	6.33	48.85	25	6418.58	67.64	67.64 N	92.05 E	114.23	53.69	0.62	-0.44	-3.88
	6450.00	6.15	49.43	25	6443.44	69.42	69.42 N	94.11 E	116.94	53.59	0.76	-0.72	2.32
	6475.00	6.00	50.37	25	6468.30	71.12	71.12 N	96.13 E	119.58	53.50	0.72	-0.60	3.76
	6500.00	5.41	49.33	25	6493.17	72.72	72.72 N	98.03 E	122.06	53.43	2.40	-2.36	-4.16
	6525.00	5.20	49.52	25	6518.07	74.23	74.23 N	99.79 E	124.37	53.36	0.84	-0.84	0.76
	6550.00	5.12	50.36	25	6542.96	75.67	75.67 N	101.51 E	126.61	53.30	0.44	-0.32	3.36
	6575.00	4.97	51.01	25	6567.87	77.07	77.07 N	103.21 E	128.81	53.25	0.64	-0.60	2.60
	6600.00	4.93	51.09	25	6592.77	78.42	78.42 N	104.89 E	130.96	53.21	0.16	-0.16	0.32
	6625.00	4.92	51.46	25	6617.68	79.77	79.77 N	106.56 E	133.11	53.18	0.13	-0.04	1.48
	6650.00	4.73	53.45	25	6642.59	81.05	81.05 N	108.23 E	135.21	53.17	1.01	-0.76	7.96
	6675.00	4.64	55.60	25	6667.51	82.23	82.23 N	109.89 E	137.25	53.19	0.79	-0.36	8.60
	6700.00	4.82	57.48	25	6692.42	83.37	83.37 N	111.61 E	139.31	53.24	0.95	0.72	7.52
	6725.00	4.76	56.72	25	6717.34	84.50	84.50 N	113.36 E	141.39	53.30	0.35	-0.24	-3.04
	6750.00	4.69	58.27	25	6742.25	85.61	85.61 N	115.10 E	143.45	53.36	0.58	-0.28	6.20



Company: Legacy
 Well: Hamon A Federal Com 1HR
 Location: Lea Co., NM
 Rig: Pulling Unit

Job Number: 61456
 Grid Corr.: -0.39
 Lat: 32.57
 Long: -103.60

Calculation Method: Minimum Curvature
 Proposed Azimuth:
 RKB - MSL in feet: Ground
 Tie Into: Surface

Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')	Walk Rate (d/100')
							N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)			
	6775.00	4.66	59.13	25	6767.17	86.67	86.67 N	116.84 E	145.47	53.43	0.30	-0.12	3.44
	6800.00	4.83	59.89	25	6792.08	87.72	87.72 N	118.62 E	147.53	53.52	0.72	0.68	3.04
	6825.00	5.01	58.63	25	6816.99	88.81	88.81 N	120.46 E	149.66	53.60	0.84	0.72	-5.04
	6850.00	5.09	58.17	25	6841.89	89.97	89.97 N	122.34 E	151.86	53.67	0.36	0.32	-1.84
	6875.00	5.18	56.50	25	6866.79	91.17	91.17 N	124.22 E	154.09	53.72	0.70	0.36	-6.68
	6900.00	5.39	55.29	25	6891.69	92.47	92.47 N	126.13 E	156.39	53.75	0.95	0.84	-4.84
	6925.00	5.47	55.44	25	6916.57	93.81	93.81 N	128.07 E	158.76	53.78	0.32	0.32	0.60
	6950.00	5.52	55.50	25	6941.46	95.17	95.17 N	130.05 E	161.15	53.80	0.20	0.20	0.24
	6975.00	5.64	54.64	25	6966.34	96.56	96.56 N	132.04 E	163.58	53.82	0.59	0.48	-3.44
	7000.00	5.64	54.05	25	6991.22	97.99	97.99 N	134.04 E	166.04	53.83	0.23	0.00	-2.36
	7025.00	5.73	54.38	25	7016.10	99.44	99.44 N	136.04 E	168.51	53.84	0.38	0.36	1.32
	7050.00	5.59	54.02	25	7040.98	100.88	100.88 N	138.04 E	170.98	53.84	0.58	-0.56	-1.44
	7075.00	5.57	53.67	25	7065.86	102.32	102.32 N	140.01 E	173.41	53.84	0.16	-0.08	-1.40
	7100.00	5.38	52.39	25	7090.74	103.75	103.75 N	141.91 E	175.79	53.83	0.90	-0.76	-5.12
	7125.00	5.60	52.74	25	7115.63	105.20	105.20 N	143.81 E	178.19	53.81	0.89	0.88	1.40
	7150.00	5.47	51.76	25	7140.51	106.68	106.68 N	145.72 E	180.60	53.79	0.64	-0.52	-3.92
	7175.00	5.62	50.77	25	7165.39	108.19	108.19 N	147.60 E	183.01	53.76	0.71	0.60	-3.96
	7200.00	5.45	51.73	25	7190.28	109.70	109.70 N	149.48 E	185.42	53.73	0.77	-0.68	3.84
	7225.00	5.58	51.06	25	7215.16	111.20	111.20 N	151.36 E	187.82	53.70	0.58	0.52	-2.68
	7250.00	5.53	51.60	25	7240.04	112.71	112.71 N	153.25 E	190.24	53.67	0.29	-0.20	2.16
	7275.00	5.45	52.02	25	7264.93	114.19	114.19 N	155.13 E	192.63	53.64	0.36	-0.32	1.68
	7300.00	5.31	52.25	25	7289.82	115.63	115.63 N	156.98 E	194.97	53.63	0.57	-0.56	0.92
	7325.00	5.56	52.51	25	7314.71	117.08	117.08 N	158.86 E	197.34	53.61	1.00	1.00	1.04