



Well: Neville 12-11-12-14 H  
 Location: Sec. 12 - T32S - R2E  
 Rig: HWD Rig #7

Declination Corr.: 4.14 degrees  
 Grid Corr.: \_\_\_\_\_  
 Total Corr.: \_\_\_\_\_

Calculation Method Minimum Curvature  
 Proposed Azimuth 180 From True North  
 Depth Reference 15' KB  
 Tie Into: \_\_\_\_\_

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)			
<b>Tie In Coordinates</b>													
Surface	0	0	0		0	0							
Surface Casing 9-5/8" Set @ +/- 300' KB	0	0	0		0	0							
GPIT	300	0.1	188	300	300	0.36	0.36 S	0.05 W	0.37	188.04	0.05	0.05	62.68
GPIT	350	0.1	243	50	350	0.44	0.44 S	0.09 W	0.45	192.11	0.23	-0.10	109.24
GPIT	400	0.2	299	50	400	0.43	0.43 S	0.19 W	0.47	203.59	0.25	0.12	113.26
GPIT	450	0.2	312	50	450	0.34	0.34 S	0.31 W	0.46	222.48	0.13	0.10	24.90
GPIT	500	0.2	291	50	500	0.25	0.25 S	0.46 W	0.52	241.81	0.15	0.02	-41.28
GPIT	550	0.2	317	50	550	0.14	0.14 S	0.62 W	0.63	257.46	0.21	0.06	51.02
GPIT	600	0.2	328	50	600	-0.03	0.03 N	0.74 W	0.75	272.11	0.09	0.00	22.24
GPIT	650	0.2	322	50	650	-0.20	0.20 N	0.87 W	0.89	282.90	0.05	0.00	-12.04
GPIT	700	0.2	293	50	700	-0.32	0.32 N	1.02 W	1.07	287.32	0.23	-0.04	-57.68
GPIT	750	0.2	323	50	750	-0.43	0.43 N	1.16 W	1.24	290.35	0.23	0.00	60.74
GPIT	800	0.3	326	50	800	-0.61	0.61 N	1.29 W	1.42	295.21	0.10	0.10	5.30
GPIT	850	0.2	321	50	850	-0.77	0.77 N	1.41 W	1.61	298.75	0.13	-0.12	-10.50
GPIT	900	0.3	325	50	900	-0.93	0.93 N	1.53 W	1.80	301.37	0.09	0.08	8.44
GPIT	950	0.3	318	50	950	-1.12	1.12 N	1.68 W	2.02	303.62	0.10	0.08	-14.16
GPIT	1000	0.4	308	50	1000	-1.31	1.31 N	1.89 W	2.30	304.66	0.20	0.16	-20.46
GPIT	1050	0.2	324	50	1050	-1.49	1.49 N	2.08 W	2.56	305.61	0.31	-0.26	32.34
GPIT	1100	0.2	328	50	1100	-1.64	1.64 N	2.19 W	2.73	306.89	0.14	-0.14	8.70
GPIT	1150	0.2	144	50	1150	-1.64	1.64 N	2.18 W	2.72	306.94	0.72	0.04	-368.64
GPIT	1200	0.2	25	50	1200	-1.66	1.66 N	2.09 W	2.66	308.45	0.71	0.06	-237.64
GPIT	1250	0.2	32	50	1250	-1.82	1.82 N	2.00 W	2.70	312.27	0.06	-0.04	13.78
GPIT	1300	0.2	42	50	1300	-1.96	1.96 N	1.89 W	2.72	316.10	0.09	0.04	21.12
GPIT	1350	0.2	38	50	1350	-2.10	2.10 N	1.78 W	2.75	319.72	0.09	-0.08	-8.70
GPIT	1400	0.2	48	50	1400	-2.21	2.21 N	1.67 W	2.77	323.02	0.06	0.02	18.94
GPIT	1450	0.2	45	50	1450	-2.33	2.33 N	1.54 W	2.80	326.57	0.04	0.04	-5.46
GPIT	1500	0.2	66	50	1500	-2.44	2.44 N	1.38 W	2.81	330.52	0.17	0.06	41.84
GPIT	1550	0.3	48	50	1550	-2.56	2.56 N	1.20 W	2.83	334.97	0.17	0.06	-34.96
GPIT	1600	0.2	58	50	1600	-2.69	2.69 N	1.03 W	2.88	339.11	0.13	-0.10	19.64
GPIT	1650	0.3	34	50	1650	-2.84	2.84 N	0.88 W	2.97	342.79	0.22	0.10	-47.24
GPIT	1700	0.4	25	50	1700	-3.10	3.10 N	0.74 W	3.19	346.59	0.30	0.28	-19.70
GPIT	1750	0.5	29	50	1750	-3.46	3.46 N	0.56 W	3.50	350.80	0.19	0.18	8.54
GPIT	1800	0.6	40	50	1800	-3.83	3.83 N	0.30 W	3.85	355.56	0.24	0.12	22.04
GPIT	1850	0.6	35	50	1850	-4.23	4.23 N	0.00 E	4.23	0.00	0.10	0.02	-10.32
GPIT	1900	0.6	31	50	1900	-4.66	4.66 N	0.28 E	4.67	3.43	0.11	0.08	-7.40
GPIT	1950	0.7	25	50	1,950	-5.15	5.15 N	0.54 E	5.18	5.96	0.17	0.10	-12.06
GPIT	2000	0.7	20	50	2,000	-5.68	5.68 N	0.76 E	5.73	7.59	0.13	0.02	-10.74
GPIT	2050	0.7	28	50	2,050	-6.23	6.23 N	0.99 E	6.31	9.07	0.19	0.04	15.88
GPIT	2100	0.7	32	50	2,100	-6.75	6.75 N	1.29 E	6.87	10.83	0.10	0.00	8.42
GPIT	2150	0.6	41	50	2,150	-7.22	7.22 N	1.63 E	7.40	12.76	0.24	-0.10	19.04
GPIT	2200	0.7	30	50	2,200	-7.69	7.69 N	1.97 E	7.94	14.35	0.29	0.10	-23.28
GPIT	2250	0.7	29	50	2,250	-8.23	8.23 N	2.27 E	8.54	15.43	0.10	0.10	-1.70



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 Location: Sec. 12 - T32S - R2E  
 Rig: HWD Rig #7

Declination Corr.: 4.14 degrees  
 Grid Corr.: \_\_\_\_\_  
 Total Corr.: \_\_\_\_\_

Calculation Method Minimum Curvature  
 Proposed Azimuth 180 From True North  
 Depth Reference 15' KB  
 Tie Into: \_\_\_\_\_

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)			
GPIT	2300	0.7	27	50	2,300	-8.79	8.79 N	2.56 E	9.15	16.27	0.09	-0.08	-3.94
GPIT	2350	0.5	32	50	2,350	-9.25	9.25 N	2.82 E	9.67	16.95	0.39	-0.38	9.46
GPIT	2400	0.3	59	50	2,400	-9.51	9.51 N	3.05 E	9.99	17.79	0.55	-0.40	55.76
GPIT	2450	0.3	80	50	2,450	-9.60	9.60 N	3.28 E	10.14	18.87	0.23	-0.10	41.02
GPIT	2500	0.4	163	50	2,500	-9.45	9.45 N	3.44 E	10.06	20.02	0.90	0.28	165.66
GPIT	2550	0.4	189	50	2,550	-9.11	9.11 N	3.47 E	9.74	20.84	0.37	0.02	52.82
GPIT	2600	0.6	220	50	2,600	-8.73	8.73 N	3.27 E	9.32	20.54	0.65	0.38	61.26
GPIT	2,650	0.7	226.6	50	2,649.94	-8.33	8.33 N	2.90 E	8.82	19.17	0.18	0.10	13.58
GPIT	2,700	0.6	235.4	50	2,699.94	-7.99	7.99 N	2.48 E	8.37	17.23	0.23	-0.12	17.72
GPIT	2,750	0.6	220.3	50	2,749.93	-7.64	7.64 N	2.09 E	7.92	15.31	0.32	0.06	-30.20
<b>Depart from Pilot Hole</b>	2,786	4.1	195.7	36	2,785.90	-6.24	6.24 N	1.61 E	6.45	14.50	9.93	9.75	-68.50
MWD	2,820	6.5	192.4	34	2,819.75	-3.18	3.18 N	0.87 E	3.30	15.30	7.08	7.03	-9.65
MWD	2,829	7.3	192.0	9	2,828.68	-2.12	2.12 N	0.64 E	2.21	16.81	8.90	8.89	-4.00
MWD	2,873	8.8	189.5	44	2,872.25	3.92	3.92 S	0.50 W	3.96	187.23	3.35	3.25	-5.75
MWD	2,916	8.7	185.2	43	2,914.75	10.38	10.38 S	1.33 W	10.46	187.30	1.54	-0.19	-10.12
MWD	2,959	8.9	180.2	43	2,957.25	16.94	16.94 S	1.63 W	17.01	185.50	1.85	0.56	-11.56
MWD	3,002	8.6	177.3	43	2,999.75	23.48	23.48 S	1.49 W	23.53	183.64	1.21	-0.67	-6.63
<b>Kick Off Point</b>	3,046	11.7	178.0	44	3,043.05	31.23	31.23 S	1.18 W	31.25	182.17	6.96	6.95	1.41
MWD	3,088	16.2	179.6	42	3,083.81	41.33	41.33 S	0.99 W	41.34	181.37	10.71	10.67	3.88
MWD	3,131	20.5	181.8	43	3,124.62	54.84	54.84 S	1.18 W	54.85	181.23	10.15	10.02	5.02
MWD	3,173	24.9	181.6	42	<b>3,163.37</b>	71.01	71.01 S	1.65 W	71.03	181.33	10.45	10.45	-0.29
MWD	3,216	27.3	182.5	43	3,201.99	89.90	89.90 S	2.34 W	89.93	181.49	5.74	5.67	2.00
MWD	3,260	30.6	182.4	44	3,240.49	111.17	111.17 S	3.25 W	111.21	181.67	7.46	7.45	-0.18
MWD	3,303	33.8	181.8	43	3,276.87	134.07	134.07 S	4.08 W	134.13	181.74	7.60	7.56	-1.44
MWD	3,347	<b>37.6</b>	181.8	44	3,312.58	159.74	159.74 S	4.88 W	159.81	181.75	8.61	8.61	-0.07
MWD	3,390	41.0	181.0	43	3,345.85	186.96	186.96 S	5.52 W	187.04	181.69	7.89	7.81	-1.77
MWD	3,433	43.9	180.1	43	3,377.57	215.99	215.99 S	5.79 W	216.06	181.54	7.04	6.88	-2.16
MWD	<b>3,477</b>	<b>46.4</b>	179.8	44	<b>3,408.58</b>	247.20	247.20 S	5.75 W	247.27	181.33	5.70	5.68	-0.59
<b>Top of Miss at 3520' TVD KB</b>	3,520	48.4	179.4	43	3,437.68	278.85	278.85 S	5.54 W	278.91	181.14	4.54	4.49	-0.93
MWD	3,563	51.1	178.7	43	3,465.47	311.66	311.66 S	5.00 W	311.70	180.92	6.48	6.37	-1.56
MWD	3,607	54.9	179.0	44	3,491.96	346.78	346.78 S	4.31 W	346.80	180.71	8.51	8.50	0.57
MWD	3,650	58.7	179.8	43	3,515.51	382.74	382.74 S	3.93 W	382.76	180.59	9.13	9.00	1.81
MWD	3,693	62.4	180.9	43	3,536.66	420.17	420.17 S	4.16 W	420.19	180.57	8.76	8.44	2.67
MWD	3,737	66.3	181.2	44	3,555.72	459.81	459.81 S	4.88 W	459.84	180.61	8.99	8.98	0.55
MWD	3,780	69.2	180.5	43	3,571.98	499.61	499.61 S	5.44 W	499.64	180.62	7.00	6.84	-1.63
<b>ESP Placement 100' Tangent Section</b>	3,823	69.8	180.9	43	3,587.04	539.88	539.88 S	5.90 W	539.91	180.63	1.46	1.19	0.91
MWD	3,867	69.8	180.4	44	3,602.26	581.16	581.16 S	6.37 W	581.20	180.63	0.88	0.09	-0.93
<b>Top of Liner Set @ 3912'</b>	3,910	71.2	180.2	43	3,616.61	621.70	621.70 S	6.57 W	621.73	180.61	3.41	3.35	-0.67
MWD	3,952	77.0	179.1	42	3,628.11	662.07	662.07 S	6.31 W	662.10	180.55	13.87	13.67	-2.45
MWD	3,995	81.2	179.0	43	3,636.25	704.28	704.28 S	5.61 W	704.30	180.46	9.82	9.81	-0.35
MWD	4,039	84.7	179.1	44	3,641.64	747.93	747.93 S	4.88 W	747.95	180.37	8.05	8.05	0.36
MWD	4,076	87.6	179.3	37	3,644.12	784.84	784.84 S	4.37 W	784.86	180.32	7.77	7.76	0.43
<b>Intermediate Casing 7" Set @ 4101' KB</b>	4,133	89.4	182.5	57	3,645.62	841.81	841.81 S	5.28 W	841.82	180.36	6.48	3.12	5.68



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Calculation Method Minimum Curvature  
 Proposed Azimuth 180 From True North  
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 Tie Into: \_\_\_\_\_

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)			
MWD	4,176	89.3	180.7	43	3,646.11	884.79	884.79 S	6.48 W	884.81	180.42	4.35	-0.14	-4.35
MWD	4,263	90.5	179.5	87	3,646.25	971.78	971.78 S	6.57 W	971.80	180.39	1.93	1.34	-1.38
MWD	4,350	90.2	176.8	87	3,645.74	1,058.73	1,058.73 S	3.74 W	1,058.73	180.20	3.07	-0.36	-3.05
MWD	4,436	90.4	177.8	86	3,645.29	1,144.63	1,144.63 S	0.31 E	1,144.63	179.98	1.18	0.29	1.14
MWD	4,523	90.2	182.4	87	3,644.81	1,231.60	1,231.60 S	0.21 E	1,231.60	179.99	5.25	-0.28	5.24
MWD	4,610	90.1	180.1	87	3,644.62	1,318.58	1,318.58 S	1.68 W	1,318.58	180.07	2.54	-0.15	-2.54
MWD	4,696	90.1	177.6	86	3,644.51	1,404.55	1,404.55 S	0.03 E	1,404.55	180.00	2.98	0.03	-2.98
MWD	4,783	89.4	178.3	87	3,644.94	1,491.49	1,491.49 S	3.19 E	1,491.50	179.88	1.15	-0.85	0.77
MWD	4,869	90.7	180.9	86	3,644.94	1,577.48	1,577.48 S	3.83 E	1,577.49	179.86	3.43	1.51	3.08
MWD	4,956	90.4	180.3	87	3,644.14	1,664.47	1,664.47 S	2.96 E	1,664.48	179.90	0.80	-0.29	-0.75
MWD	5,042	89.9	176.0	86	3,643.93	1,750.41	1,750.41 S	5.79 E	1,750.42	179.81	5.01	-0.60	-4.98
MWD	5,129	89.8	180.9	87	3,644.19	1,837.35	1,837.35 S	8.16 E	1,837.37	179.75	5.68	-0.11	5.68
MWD	5,215	89.9	180.6	86	3,644.44	1,923.34	1,923.34 S	7.02 E	1,923.35	179.79	0.37	0.12	-0.35
MWD	5,302	89.9	175.6	87	3,644.58	2,010.26	2,010.26 S	9.94 E	2,010.29	179.72	5.82	0.07	-5.82
MWD	5,389	89.8	177.9	87	3,644.76	2,097.11	2,097.11 S	14.92 E	2,097.17	179.59	2.68	-0.14	2.68
MWD	5,475	89.9	176.5	86	3,644.99	2,183.01	2,183.01 S	19.16 E	2,183.09	179.50	1.64	0.07	-1.64
MWD	5,562	89.9	180.3	87	3,645.15	2,269.96	2,269.96 S	21.60 E	2,270.06	179.45	4.41	0.03	4.41
MWD	5,648	90.0	179.7	86	3,645.19	2,355.95	2,355.95 S	21.57 E	2,356.05	179.48	0.68	0.14	-0.66
MWD	5,735	89.7	181.3	87	3,645.43	2,442.95	2,442.95 S	20.81 E	2,443.04	179.51	1.80	-0.43	1.75
MWD	5,822	89.7	178.3	87	3,645.92	2,529.94	2,529.94 S	21.12 E	2,530.03	179.52	3.38	0.03	-3.38
MWD	5,908	89.7	178.2	86	3,646.36	2,615.90	2,615.90 S	23.75 E	2,616.00	179.48	0.17	0.03	-0.16
MWD	5,995	89.8	181.5	87	3,646.77	2,702.88	2,702.88 S	23.97 E	2,702.99	179.49	3.85	0.03	3.85
MWD	6,081	89.6	183.7	86	3,647.25	2,788.79	2,788.79 S	20.07 E	2,788.86	179.59	2.49	-0.17	2.49
MWD	6,168	90.0	186.0	87	3,647.56	2,875.47	2,875.47 S	12.74 E	2,875.50	179.75	2.72	0.46	2.68
MWD	<b>6,255</b>	89.9	182.4	87	3,647.67	<b>2,962.22</b>	2,962.22 S	6.35 E	2,962.23	179.88	4.12	-0.17	-4.11
MWD	6,342	90.0	182.0	87	3,647.81	3,049.16	3,049.16 S	3.01 E	3,049.16	179.94	0.52	0.14	-0.51
MWD	6,428	90.0	181.1	86	3,647.85	3,135.13	3,135.13 S	0.74 E	3,135.13	179.99	1.08	0.00	-1.08
MWD	6,515	90.0	180.4	87	3,647.90	3,222.12	3,222.12 S	0.38 W	3,222.12	180.01	0.72	0.00	-0.72
MWD	6,601	89.9	179.9	86	3,648.01	3,308.12	3,308.12 S	0.64 W	3,308.12	180.01	0.58	-0.10	-0.57
MWD	6,688	90.0	178.7	87	3,648.13	3,395.11	3,395.11 S	0.43 E	3,395.11	179.99	1.46	0.10	-1.46
MWD	6,775	90.0	177.2	87	3,648.13	3,482.05	3,482.05 S	3.56 E	3,482.05	179.94	1.66	0.07	-1.66
MWD	6,861	89.9	176.2	86	3,648.17	3,567.91	3,567.91 S	8.51 E	3,567.92	179.86	1.22	-0.14	-1.21
MWD	6,948	89.9	175.8	87	3,648.33	3,654.69	3,654.69 S	14.61 E	3,654.72	179.77	0.47	-0.03	-0.47
MWD	7,033	89.8	175.8	85	3,648.55	3,739.46	3,739.46 S	20.89 E	3,739.52	179.68	0.07	-0.07	-0.01
MWD	7,120	89.9	175.6	87	3,648.78	3,826.21	3,826.21 S	27.41 E	3,826.31	179.59	0.15	0.07	-0.14
MWD	7,206	89.9	176.2	86	3,648.98	3,912.00	3,912.00 S	33.55 E	3,912.14	179.51	0.63	-0.03	0.63
MWD	7,293	90.3	177.3	87	3,648.91	3,998.85	3,998.85 S	38.51 E	3,999.04	179.45	1.35	0.46	1.26
MWD	7,379	90.5	177.2	86	3,648.37	4,084.75	4,084.75 S	42.69 E	4,084.97	179.40	0.29	0.24	-0.15
MWD	7,465	90.5	177.4	86	3,647.66	4,170.65	4,170.65 S	46.75 E	4,170.91	179.36	0.34	0.03	0.34
MWD	7,552	91.2	177.8	87	3,646.36	4,257.56	4,257.56 S	50.34 E	4,257.86	179.32	0.96	0.85	0.45
MWD	7,638	91.0	177.6	86	3,644.71	4,343.48	4,343.48 S	53.74 E	4,343.81	179.29	0.38	-0.31	-0.22
MWD	7,725	90.1	177.3	87	3,643.91	4,430.39	4,430.39 S	57.57 E	4,430.77	179.26	1.07	-1.00	-0.38
MWD	7,812	89.5	177.6	87	3,644.26	4,517.30	4,517.30 S	61.46 E	4,517.72	179.22	0.79	-0.74	0.29



Well: Neville 12-11-12-14 H  
 Location: Sec. 12 - T32S - R2E  
 Rig: HWD Rig #7

Declination Corr.: 4.14 degrees  
 Grid Corr.: \_\_\_\_\_  
 Total Corr.: \_\_\_\_\_

Calculation Method Minimum Curvature  
 Proposed Azimuth 180 From True North  
 Depth Reference 15' KB  
 Tie Into: \_\_\_\_\_

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)			
MWD	7,839	89.6	177.9	27	3,644.49	4,544.28	4,544.28 S	62.53 E	4,544.71	179.21	1.44	0.56	1.33
<b>Well TD 7,909' MD</b>	7,909	89.6	177.9	70	3,644.98	4,614.23	4,614.23 S	65.07 E	4,614.69	179.19	0.00	0.00	0.00