

Table 2, continued. Logging dates and depth ranges

BORING NUMBER	TOOL AND RUN NUMBER	DEPTH ⁽¹⁾ RANGE (FEET)	OPEN HOLE (FEET)	SAMPLE INTERVAL (FEET)	DATE LOGGED
MP-202	FTC DOWN01	0 - 454.6	461	0.05	6/27/2013
MP-202	DUIN/GAMMA UP01	459.9-11.6	461	0.05	6/27/2013
MP-202	DUIN/GAMMA UP02	85.1 – 47.25	461	0.05	6/27/2013
MP-202	HIRAT DOWN01	3.8 – 459.5	461	0.04	6/27/2013
MP-202	HIRAT UP01	459.4-44.5	461	0.004	6/27/2013
MP-202	DUIN/GAMMA UP01	459.85 – 11.6	461	0.05	6/27/2013
MP-202	DUIN/GAMMA UP02	85.1 – 4725	461	0.05	6/27/2013
MP-202	HIRAT UP02	50.0-13.0	461	0.004	7/3/2013
MP-202	SUSPENSION DOWN01	14.8-446.2	461	1.6	7/3/2013
MP-202	CALIPER/GAMMA UP01	459.7-11.0	461	0.05	7/3/2013
MP-212*	DUIN/GAMMA UP01	176.95 – 44	177.8	0.05	8/4/2013
MP-212*	SUSPENSION DOWN01	45.93 – 164.04	177.8	1.6	8/4/2013
MP-212*	CALIPER/GAMMA UP01	176.75 – 3	177.8	0.05	8/4/2013
MP-212*	HIRAT DOWN01	45 – 176.7	177.8	0.04	8/4/2013
MP-212*	HIRAT UP01	176.6 – 43	177.8	0.004	8/4/2013
MP-212*	HIRAT UP02	65 – 43	177.8	0.004	8/4/2013
MP-213*	HIRAT DOWN01	15 – 175.6	177.3	0.04	8/3/2013
MP-213*	HIRAT UP01	175.6 – 13.5	177.3	0.004	8/3/2013
MP-213*	DUIN/GAMMA UP01	176.8 – 15	177.3	0.05	8/3/2013
MP-213*	SUSPENSION DOWN01	16.40 – 164.04	177.3	1.6	8/3/2013
MP-213*	CALIPER/GAMMA UP01	176.75 – 4	177.3	0.05	8/3/2013
MP-219A	DUIN/GAMMA UP01	268.5 – 23.5	269.1	0.05	8/2/2013
MP-219A	CALIPER/GAMMA UP01	268.4 – 3.5	269.1	0.05	8/2/2013
MP-219A	HIRAT DOWN01	22 – 268.2	269.1	0.04	8/2/2013
MP-219A	HIRAT UP01	268.15 – 23.4	269.1	0.004	8/2/2013
MP-219A	HIRAT UP02	50 – 47.6	269.1	0.004	8/2/2013
MP-219A	SUSPENSION DOWN01	24.61 – 52.49	269.1	1.6	8/2/2013
MP-219A	SUSPENSION DOWN02	52.49 – 88.58	269.1	1.6	8/2/2013
MP-219A	SUSPENSION DOWN03	88.58 – 254.27	269.1	1.6	8/2/2013

(1) ALL DEPTHS REFERENCED TO GROUND SURFACE ELEVATION

(2) * - INCLINED BORING, DEPTHS ALONG BOREHOLE AXIS

Table 2, continued. Logging dates and depth ranges

BORING NUMBER	TOOL AND RUN NUMBER	DEPTH ⁽¹⁾ RANGE (FEET)	OPEN HOLE (FEET)	SAMPLE INTERVAL (FEET)	DATE LOGGED
MP-401	FTC DOWN01	0 – 415.0	419.6	0.05	7/8/2013
MP-401	SUSPENSION DOWN01	4.9 – 405.2	419.6	1.6	7/8/2013
MP-401	DUIN/GAMMA UP01	418.8 – 4.5	419.6	0.05	7/9/2013
MP-401	HIRAT DOWN01	2.78 – 418.6	419.6	0.04	7/9/2013
MP-401	HIRAT UP01	418.5 – 2.78	419.6	0.004	7/9/2013
MP-401	HIRAT UP02	25.0 – 2.78	419.6	0.004	7/9/2013
MP-401	CALIPER/GAMMA UP01	418.5 – 3.0	419.6	0.05	7/9/2013
MP-409	FTC DOWN01	0 – 246.3	251.5	0.05	8/16/2013
MP-409	HIRAT DOWN01	3.1 249.3	251.5	0.04	8/16/2013
MP-409	HIRAT UP01	249.1 – 34.7	251.5	0.004	8/16/2013
MP-409	SUSPENSION DOWN01	52.49 – 237.86	251.5	1.6	8/17/2013
MP-409	DUIN/GAMMA UP01	251.5 – 48.85	251.5	0.05	8/17/2013
MP-409	DUIN/GAMMA UP02	96.25 – 69.7	251.5	0.05	8/17/2013
MP-409	CALIPER/GAMMA UP01	249.2 – 4.2	251.5	0.05	8/17/2013
MP-412	DUIN/GAMMA UP01	319.45 – 9.65	321	0.05	7/21/2013
MP-412	DUIN/GAMMA UP02	55.55 – 18.7	321	0.05	7/21/2013
MP-412	HIRAT DOWN01	2.7 – 319.7	321	0.04	7/21/2013
MP-412	HIRAT UP01	319.5 – 13.3	321	0.004	7/21/2013
MP-412	HIRAT UP02	28.2 – 13.1	321	0.004	7/21/2013
MP-412	SUSPENSION DOWN01	16.40 – 305.12	321	1.6	7/22/2013
MP-412	CALIPER/GAMMA UP01	319.75 – 1.35	321	0.05	7/22/2013
MP-415	FTC DOWN01	0 – 314.95	320	0.05	6/20/2013
MP-415	DUIN/GAMMA UP01	318.6 - 5.3	320	0.05	6/20/2013
MP-415	CALIPER/GAMMA UP01	318.65 - 4.75	320	0.05	6/20/2013
MP-415	HIRAT DOWN 01	4.3 – 314.5	320	0.04	6/21/2013
MP-415	HIRAT UP01	314.0 – 287.3	320	0.004	6/21/2013
MP-415	HIRAT UP02	314.5 – 20.4	320	0.004	6/21/2013
MP-415	SUSPENSION DOWN01	21.33 - 306.76	320	1.6	6/21/2013
MP-415	SUSPENSION DOWN02	9.8 - 32.8	320	1.6	7/7/2013
MP-415	HIRAT UP03	35.0 - 8.8	320	0.004	7/7/2013

⁽¹⁾ ALL DEPTHS REFERENCED TO GROUND SURFACE ELEVATION

⁽²⁾ * - INCLINED BORING, DEPTHS ALONG BOREHOLE AXIS

Table 2, continued. Logging dates and depth ranges

BORING NUMBER	TOOL AND RUN NUMBER	DEPTH ⁽¹⁾ RANGE (FEET)	OPEN HOLE (FEET)	SAMPLE INTERVAL (FEET)	DATE LOGGED
MP-416	FTC DOWN02	0 - 316.2	321.7	0.05	7/7/2013
MP-416	DUIN/GAMMA UP01	320.5 - 72.0	321.7	0.05	7/7/2013
MP-416	SUSPENSION DOWN01	73.8-306.8	321.7	1.6	7/7/2013
MP-416	HIRAT DOWN01	70 - 320.5	321.7	0.04	7/8/2013
MP-416	HIRAT UP01	320.3 - 72.0	321.7	0.004	7/8/2013
MP-416	HIRAT UP02	100.0 - 72.0	321.7	0.004	7/8/2013
MP-416	CALIPER/GAMMA UP01	320.25 - 4.0	321.7	0.05	7/8/2013
MP-417	FTC DOWN01	0 - 313.25	320	0.05	6/26/2013
MP-417	DUIN/GAMMA UP01	319.25 - 44.4	320	0.05	6/26/2013
MP-417	HIRAT DOWN01	2.8 - 319.0	320	0.04	6/26/2013
MP-417	HIRAT UP01	318.8 - 45.8	320	0.004	6/26/2013
MP-417	SUSPENSION DOWN01	49.2 - 306.8	320	1.6	6/26/2013
MP-417	CALIPER/GAMMA UP01	318.0 - 40.15	320	0.05	6/26/2013
MP-418A	FTC DOWN01	0 - 316.4	320.6	0.05	7/5/2013
MP-418A	DUIN/GAMMA UP01	320.0 - 78.5	320.6	0.05	7/5/2013
MP-418A	SUSPENSION DOWN01	80.4 - 306.8	320.6	1.6	7/5/2013
MP-418A	HIRAT DOWN01	80.5 - 319.7	320.6	0.04	7/5/2013
MP-418A	HIRAT UP01	319.7 - 74.0	320.6	0.004	7/5/2013
MP-418A	HIRAT UP02	105.0 - 77.0	320.6	0.004	7/5/2013
MP-418A	CALIPER/GAMMA UP01	319.9 - 3.0	320.6	0.05	7/5/2013
MP-418A	DUIN/GAMMA UP02	80.45 - 52.5	320.6	0.05	8/1/2013
MP-418A	SUSPENSION DOWN02	54.13 - 67.26	320.6	1.6	8/1/2013
MP-418A	SUSPENSION DOWN03	62.34 - 82.02	320.6	1.6	8/1/2013
MP-418A	HIRAT UP03	95.0 - 53.0	320.6	0.004	8/1/2013
MP-418A	HIRAT DOWN02	54.0 - 95.0	320.6	0.05	8/1/2013
MP-418A	CALIPER/GAMMA UP02	95.0 - 35.0	320.6	0.04	8/1/2013

⁽¹⁾ ALL DEPTHS REFERENCED TO GROUND SURFACE ELEVATION

⁽²⁾ * - INCLINED BORING, DEPTHS ALONG BOREHOLE AXIS

Table 2, continued. Logging dates and depth ranges

BORING NUMBER	TOOL AND RUN NUMBER	DEPTH ⁽¹⁾ RANGE (FEET)	OPEN HOLE (FEET)	SAMPLE INTERVAL (FEET)	DATE LOGGED
MP-419	FTC DOWN01	0 - 316.6	321	0.05	6/23/2013
MP-419	DUIN/GAMMA UP01	320.2 - 48.75	321	0.05	6/23/2013
MP-419	HIRAT DOWN01	4.5 - 320.0	321	0.04	6/23/2013
MP-419	HIRAT UP01	319.2 - 50.7	321	0.004	6/23/2013
MP-419	SUSPENSION DOWN01	54.13 - 306.76	321	1.6	6/24/2013
MP-419	CALIPER/GAMMA UP01	319.95 - 42.15	321	0.05	6/24/2013
MP-420	FTC DOWN01	0 - 311.6	319.4	0.05	7/11/2013
MP-420	SUSPENSION DOWN01	47.57 - 305.12	319.4	1.6	7/11/2013
MP-420	HIRAT DOWN01	47 - 319.1	319.4	0.04	7/11/2013
MP-420	HIRAT UP01	319.0 - 49.0	319.4	0.004	7/11/2013
MP-420	HIRAT UP02	70.0 - 49.0	319.4	0.004	7/11/2013
MP-420	DUIN/GAMMA UP01	318.8 - 45.8	319.4	0.05	7/16/2013
MP-420	DUIN/GAMMA UP02	112 - 79.65	319.4	0.05	7/16/2013
MP-420	CALIPER/GAMMA UP01	318.0 - 3.3	319.4	0.05	7/16/2013
MP-421	FTC DOWN01	0 - 316.5	320.3	0.05	7/18/2013
MP-421	HIRAT DOWN01	4.3 - 319.2	320.3	0.04	7/18/2013
MP-421	HIRAT UP01	319.2 - 47.5	320.3	0.004	7/18/2013
MP-421	DUIN/GAMMA UP01	320.1 - 47.45	320.3	0.05	7/19/2013
MP-421	DUIN/GAMMA UP02	113.38 - 85.45	320.3	0.05	7/19/2013
MP-421	CALIPER/GAMMA UP01	318.5 - 3.75	320.3	0.05	7/19/2013
MP-421	SUSPENSION DOWN01	50.85 - 306.76	320.3	1.6	7/19/2013
MP-422	FTC DOWN01	0 - 315.3	320	0.05	6/24/2013
MP-422	DUIN/GAMMA UP01	319.0 - 9.2	320	0.05	6/24/2013
MP-422	HIRAT DOWN01	4.5 - 318.8	320	0.04	6/24/2013
MP-422	HIRAT UP01	318.7 - 42.9	320	0.004	6/24/2013
MP-422	SUSPENSION DOWN01	13.1 - 306.8	320	1.6	6/25/2013
MP-422	HIRAT UP02	49.4 - 10.5	320	0.004	6/25/2013
MP-422	CALIPER/GAMMA UP01	317.1 - 6.3	320	0.05	6/25/2013

⁽¹⁾ ALL DEPTHS REFERENCED TO GROUND SURFACE ELEVATION

⁽²⁾ * - INCLINED BORING, DEPTHS ALONG BOREHOLE AXIS

Table 2, continued. Logging dates and depth ranges

BORING NUMBER	TOOL AND RUN NUMBER	DEPTH ⁽¹⁾ RANGE (FEET)	OPEN HOLE (FEET)	SAMPLE INTERVAL (FEET)	DATE LOGGED
MP-423	FTC DOWN01	0 – 316.5	319	0.05	7/24/2013
MP-423	DUIN/GAMMA UP01	318.75 – 39.75	319	0.05	7/24/2013
MP-423	DUIN/GAMMA UP02	97.7 – 63.65	319	0.05	7/24/2013
MP-423	HIRAT DOWN01	4.5 – 318.7	319	0.04	7/24/2013
MP-423	HIRAT UP01	318.7 – 41.5	319	0.004	7/24/2013
MP-423	SUSPENSION DOWN01	47.57 – 305.12	319	1.6	7/25/2013
MP-423	CALIPER/GAMMA UP01	318.65 – 2.75	319	0.05	7/25/2013
MP-425*	DUIN/GAMMA UP01	271.85 – 5.55	272.9	0.05	7/22/2013
MP-425*	DUIN/GAMMA UP02	51.0 – 19.7	272.9	0.05	7/22/2013
MP-425*	HIRAT DOWN01	4.0 – 271.6	272.9	0.04	7/22/2013
MP-425*	HIRAT UP01	271.5 – 11.2	272.9	0.004	7/22/2013
MP-425*	HIRAT UP02	19.0 – 5.0	272.9	0.004	7/23/2013
MP-425*	SUSPENSION DOWN01	8.20 – 259.19	272.9	1.6	7/23/2013
MP-425*	CALIPER/GAMMA UP01	271.7 – 3.55	272.9	0.05	7/23/2013
MP-426*	DUIN/GAMMA UP01	271.5 – 20.6	272.3	0.05	8/19/2013
MP-426*	DUIN/GAMMA UP02	51.6 – 23.35	272.3	0.05	8/19/2013
MP-426*	HIRAT DOWN01	4.4 – 271.3	272.3	0.04	8/19/2013
MP-426*	HIRAT UP01	271.1 – 26.4	272.3	0.004	8/19/2013
MP-426*	SUSPENSION DOWN01	32.81 – 257.55	272.3	1.6	8/19/2013
MP-426*	CALIPER/GAMMA UP01	270.6 – 3.0	272.3	0.05	8/19/2013
MP-428	FTC DOWN01	0 – 243.35	250.7	0.05	10/8/2013
MP-428	DUIN/GAMMA UP01	250.05 – 39.45	250.7	0.05	10/8/2013
MP-428	DUIN/GAMMA UP02	102.15 – 5.45	250.7	0.05	10/8/2013
MP-428	HIRAT DOWN01	3.6 – 249.7	250.7	0.04	10/8/2013
MP-428	HIRAT UP01	249.6 – 34.2	250.7	0.004	10/8/2013
MP-428	CALIPER/GAMMA UP01	249.35 – 33.75	250.7	0.05	10/8/2013
MP-429	FTC DOWN01	0 – 194.75	199.2	0.05	10/9/2013
MP-429	DUIN/GAMMA UP01	199.05 – 5.25	199.2	0.05	10/9/2013
MP-429	DUIN/GAMMA UP02	85.55 – 59.5	199.2	0.05	10/9/2013
MP-429	HIRAT DOWN01	4.5 – 198.5	199.2	0.04	10/9/2013
MP-429	HIRAT UP01	198.4 – 32.3	199.2	0.004	10/9/2013
MP-429	CALIPER/GAMMA UP01	198.55 – 24.8	199.2	0.05	10/9/2013

⁽¹⁾ ALL DEPTHS REFERENCED TO GROUND SURFACE ELEVATION

⁽²⁾ * - INCLINED BORING, DEPTHS ALONG BOREHOLE AXIS

Table 3. Boring Bottom Depths and After Survey Depth Error (ASDE)

BORING NUMBER	TOOL AND RUN NUMBER	TOOL HIT BOTTOM DEPTH ⁽¹⁾ (FEET)	DRILLER DEPTH ⁽¹⁾ (FEET)	STARTING DEPTH ⁽¹⁾ REF. (FEET)	ENDING DEPTH ⁽¹⁾ REF. (FEET)	ASDE ** (FEET)
MP-101	FTC DOWN01	-	540	-0.62	-0.65	0.3
MP-101	SUSPENSION DOWN01	539	540	7.58	7.48	0.1
MP-101	HIRAT DOWN/UP01	539.5	540	4.10	4.04	0.06
MP-101	DUIN/GAMMA UP01	539.75	540	6.83	6.85	-0.02
MP-101	DUIN/GAMMA UP02	-	540	6.83	6.90	-0.07
MP-101	CALIPER/GAMMA UP01	-	540	6.2	6.2	0.0
MP-102	DUIN/GAMMA UP01	349.8	350.6	6.99	6.90	0.09
MP-102	DUIN/GAMMA UP02	-	350.6	6.99	7.10	-0.11
MP-102	HIRAT DOWN/UP01	346.5	350.6	4.26	3.97	0.29
MP-102	HIRAT UP02	-	350.6	4.26	4.25	0.01
MP-102	SUSPENSION DOWN01	-	350.6	7.74	7.71	0.03
MP-102	SUSPENSION DOWN02	347.15	350.6	7.74	7.74	0.0
MP-102	CALIPER/GAMMA UP01	-	350.6	6.36	6.30	0.06
MP-111	DUIN/GAMMA UP01	173.5	173.9	6.45	6.45	0.0
MP-111	SUSPENSION DOWN01	173.3	173.9	7.22	7.22	0.0
MP-111	CALIPER/GAMMA UP01	-	173.9	5.82	5.82	0.0
MP-111	HIRAT DOWN/UP01	173.2	173.9	3.72	3.66	0.06
MP-111	HIRAT UP02	-	173.9	3.72	3.68	0.04
MP-111PS	HIRAT DOWN/UP01	58.2	59.5	2.47	2.48	-0.01
MP-111PS	SUSPENSION DOWN01	56.8	59.5	5.94	5.91	0.03
MP-112*	DUIN/GAMMA UP01	177.0	177.5	6.45	6.30	0.15
MP-112*	CALIPER/GAMMA UP01	-	177.5	5.82	5.85	-0.03
MP-112*	HIRAT DOWN010203/UP01	176.5	177.5	3.72	3.74	-0.02
MP-112*	SUSPENSION DOWN01	176.5	177.5	4.27	4.17	0.10

⁽¹⁾ ALL DEPTHS REFERENCED TO GROUND SURFACE ELEVATION

⁽²⁾ * - INCLINED BORING, DEPTHS ALONG BOREHOLE AXIS

- N/A or PROBE DID NOT TOUCH BOTTOM OF BORING

** MAXIMUM ASDE PER ASTM D6167-11 SECTION 9.15.4 IS 0.4% OF TOTAL LOG DEPTH

Table 3, continued. Boring Bottom Depths and After Survey Depth Error (ASDE)

BORING NUMBER	TOOL AND RUN NUMBER	TOOL HIT BOTTOM DEPTH ⁽¹⁾ (FEET)	DRILLER DEPTH ⁽¹⁾ (FEET)	STARTING DEPTH ⁽¹⁾ REF. (FEET)	ENDING DEPTH ⁽¹⁾ REF. (FEET)	ASDE ** (FEET)
MP-113*	DUIN/GAMMA DOWN/UP01	177.6	178	5.15	5.15	0.0
MP-113*	SUSPENSION DOWN01	176.5	178	5.91	5.81	0.10
MP-113*	CALIPER/GAMMA UP01	-	178	4.52	4.50	0.02
MP-113*	HIRAT DOWN/UP01	177.2	178	2.42	2.42	0.0
MP-120	DUIN/GAMMA UP01	349.05	350	6.62	6.55	0.07
MP-120	DUIN/GAMMA UP02	-	350	6.62	6.65	0.03
MP-120	SUSPENSION DOWN01	348.8	350	7.38	7.19	0.20
MP-120	HIRAT DOWN/UP01	348.2	350	3.89	3.63	0.26
MP-120	CALIPER/GAMMA UP01	-	350	5.99	5.92	0.07
MP-122PSA	HIRAT DOWN/UP01	50.1	38.7	2.72	2.72	0.0
MP-122PSA	SUSPENSION DOWN01	50.2	38.7	6.20	6.20	0.0
MP-122PSB	HIRAT DOWN/UP01	50.1	51.0	2.64	2.64	0.0
MP-122PSB	SUSPENSION DOWN01	37.1	51.0	6.14	6.14	0.0
MP-201	DUIN/GAMMA UP01	420	420.6	5.45	5.35	0.10
MP-201	SUSPENSION DOWN01	419.3	420.6	6.20	6.20	0.0
MP-201	CALIPER/GAMMA UP01	-	420.6	4.82	4.75	0.07
MP-201	HIRAT DOWN/UP01	419.6	420.6	2.72	2.57	0.15
MP-201	HIRAT UP0203	-	420.6	2.82	2.82	0.0
MP-201	DUIN/GAMMA UP02	-	420.6	5.55	5.55	0.0
MP-201	SUSPENSION DOWN02	-	420.6	6.30	6.30	0.0
MP-201	CALIPER/GAMMA UP02	-	420.6	4.92	4.92	0.0
MP-202	FTC DOWN01	-	461	-1.25	-1.15	0.1
MP-202	DUIN/GAMMA UP01	459.9	461	6.2	6.25	-0.05
MP-202	DUIN/GAMMA UP02	-	461	6.2	6.3	-0.10
MP-202	HIRAT DOWN/UP01	459.5	461	3.47	3.54	-0.07
MP-202	HIRAT UP02	459.4	461	3.47	3.47	0.0
MP-202	SUSPENSION DOWN01	458.7	461	6.96	6.96	0.0
MP-202	CALIPER/GAMMA UP01	-	461	5.57	5.55	0.02
MP-212*	DUIN/GAMMA UP01	176.95	177.8	4.45	4.45	0.0
MP-212*	SUSPENSION DOWN01	176.5	177.8	5.22	5.12	0.10
MP-212*	CALIPER/GAMMA UP01	-	177.8	3.82	3.82	0.0
MP-212*	HIRAT DOWN/UP0102	176.6	177.8	1.72	1.70	0.02

⁽¹⁾ ALL DEPTHS REFERENCED TO GROUND SURFACE ELEVATION

⁽²⁾ * - INCLINED BORING, DEPTHS ALONG BOREHOLE AXIS

- PROBE DID NOT TOUCH BOTTOM OF BORING

*** MAXIMUM ASDE PER ASTM D6167-11 SECTION 9.15.4 IS 0.4% OF TOTAL LOG DEPTH

Table 3, continued. Boring Bottom Depths and After Survey Depth Error (ASDE)

BORING NUMBER	TOOL AND RUN NUMBER	TOOL HIT BOTTOM DEPTH ⁽¹⁾ (FEET)	DRILLER DEPTH ⁽¹⁾ (FEET)	STARTING DEPTH ⁽¹⁾ REF. (FEET)	ENDING DEPTH ⁽¹⁾ REF. (FEET)	ASDE ** (FEET)
MP-213*	HIRAT DOWN/UP01	175.6	177.3	3.52	3.48	0.04
MP-213*	DUIN/GAMMA UP01	176.8	177.3	6.25	6.20	0.05
MP-213*	SUSPENSION DOWN01	176.5	177.3	6.99	6.99	0.0
MP-213*	CALIPER/GAMMA UP01	-	177.3	5.62	5.62	0.0
MP-219A	DUIN/GAMMA UP01	268.5	269.1	6.45	6.45	0.0
MP-219A	CALIPER/GAMMA UP01	-	269.1	5.82	5.80	0.02
MP-219A	HIRAT DOWN/UP0102	268.2	269.1	3.72	3.84	-0.12
MP-219A	SUSPENSION DOWN010203	266.8	269.1	7.22	7.15	0.07
MP-401	FTC DOWN01	-	419.6	-1.94	-1.5	-3.44
MP-401	SUSPENSION DOWN01	417.7	419.6	6.27	6.14	0.13
MP-401	DUIN/GAMMA UP01	418.8	419.6	5.51	5.51	0.0
MP-401	HIRAT DOWN/UP01	418.6	419.6	2.78	2.80	-0.02
MP-401	HIRAT UP02	-	419.6	2.78	2.78	0.0
MP-401	CALIPER/GAMMA UP01	-	419.6	4.88	4.80	0.08
MP-409	FTC DOWN01	-	251.5	-1.75	-1.75	0.0
MP-409	HIRAT DOWN/UP01	249.3	251.5	2.97	2.91	0.06
MP-409	SUSPENSION DOWN01	250.4	251.5	6.46	6.43	0.03
MP-409	DUIN/GAMMA UP01	251.5	251.5	5.7	5.75	-0.05
MP-409	DUIN/GAMMA UP02	-	251.5	5.7	5.8	-0.1
MP-409	CALIPER/GAMMA UP01	-	251.5	5.07	5.05	0.02
MP-412	DUIN/GAMMA UP01	319.5	321	5.38	5.40	-0.02
MP-412	DUIN/GAMMA UP02	-	321	5.38	5.45	-0.07
MP-412	HIRAT DOWN/UP01	319.7	321	2.65	2.62	0.03
MP-412	HIRAT UP02	-	321	2.65	2.59	0.06
MP-412	SUSPENSION DOWN01	317.6	321	6.14	6.10	0.04
MP-412	CALIPER/GAMMA UP01	-	321	4.75	4.85	-0.1
MP-415	FTC DOWN01	-	320	-0.59	-0.80	0.21
MP-415	DUIN/GAMMA UP01	318.6	320	6.86	6.70	0.16
MP-415	CALIPER/GAMMA UP01	-	320	6.23	6.15	0.08
MP-415	HIRAT DOWN01/UP0102	314.5	320	4.13	4.20	-0.07
MP-415	SUSPENSION DOWN01	319.3	320	7.61	7.48	0.13
MP-415	SUSPENSION DOWN02	-	320	7.61	7.55	0.07
MP-415	HIRAT UP03	-	320	4.13	4.12	0.01

⁽¹⁾ ALL DEPTHS REFERENCED TO GROUND SURFACE ELEVATION

⁽²⁾ * - INCLINED BORING, DEPTHS ALONG BOREHOLE AXIS

- N/A or PROBE DID NOT TOUCH BOTTOM OF BORING

** MAXIMUM ASDE PER ASTM D6167-11 SECTION 9.15.4 IS 0.4% OF TOTAL LOG DEPTH

Table 3, continued. Boring Bottom Depths and After Survey Depth Error (ASDE)

BORING NUMBER	TOOL AND RUN NUMBER	TOOL HIT BOTTOM DEPTH ⁽¹⁾ (FEET)	DRILLER DEPTH ⁽¹⁾ (FEET)	STARTING DEPTH ⁽¹⁾ REF. (FEET)	ENDING DEPTH ⁽¹⁾ REF. (FEET)	ASDE ** (FEET)
MP-416	FTC DOWN02	-	321.7	-1.74	-1.75	0.01
MP-416	DUIN/GAMMA UP01	320.5	321.7	5.71	5.75	-0.04
MP-416	SUSPENSION DOWN01	319.3	321.7	6.46	6.30	0.16
MP-416	HIRAT DOWN01/UP0102	320.5	321.7	2.98	2.98	0.0
MP-416	CALIPER/GAMMA UP01	-	321.7	5.08	5.00	0.08
MP-417	FTC DOWN01	-	320	-2.03	-2.00	-0.03
MP-417	DUIN/GAMMA UP01	319.25	320	5.42	5.45	-0.03
MP-417	HIRAT DOWN/UP01	319	320	2.69	2.69	0.0
MP-417	SUSPENSION DOWN01	319.3	320	6.17	5.97	0.20
MP-417	CALIPER/GAMMA UP01	-	320	4.79	4.80	-0.01
MP-418A	FTC DOWN01	-	320.6	-1.45	-1.50	0.05
MP-418A	DUIN/GAMMA UP01	320.0	320.6	6.00	6.05	-0.05
MP-418A	SUSPENSION DOWN01	319.3	320.6	6.76	6.63	0.13
MP-418A	HIRAT DOWN/UP01	319.7	320.6	3.27	3.14	0.13
MP-418A	HIRAT UP02	-	320.6	3.27	3.22	0.05
MP-418A	CALIPER/GAMMA UP01	-	320.6	5.37	5.20	0.17
MP-418A	DUIN/GAMMA UP02	-	320.6	3.95	3.95	0.0
MP-418A	SUSPENSION DOWN02	-	320.6	4.69	4.59	0.10
MP-418A	SUSPENSION DOWN03	-	320.6	4.69	4.66	0.03
MP-418A	HIRAT DOWN02/UP03	-	320.6	1.22	1.20	0.02
MP-418A	CALIPER/GAMMA UP02	-	320.6	3.32	3.30	0.02

⁽¹⁾ ALL DEPTHS REFERENCED TO GROUND SURFACE ELEVATION

⁽²⁾ * - INCLINED BORING, DEPTHS ALONG BOREHOLE AXIS

- N/A or PROBE DID NOT TOUCH BOTTOM OF BORING

** MAXIMUM ASDE PER ASTM D6167-11 SECTION 9.15.4 IS 0.4% OF TOTAL LOG DEPTH

Table 3, continued. Boring Bottom Depths and After Survey Depth Error (ASDE)

BORING NUMBER	TOOL AND RUN NUMBER	TOOL HIT BOTTOM DEPTH ⁽¹⁾ (FEET)	DRILLER DEPTH ⁽¹⁾ (FEET)	STARTING DEPTH ⁽¹⁾ REF. (FEET)	ENDING DEPTH ⁽¹⁾ REF. (FEET)	ASDE ** (FEET)
MP-419	FTC DOWN01	-	321	-0.33	-0.30	-0.03
MP-419	DUIN/GAMMA UP01	320.2	321	7.12	7.15	-0.03
MP-419	HIRAT DOWN/UP01	320.0	321	4.39	4.32	0.07
MP-419	SUSPENSION DOWN01	319.2	321	7.87	7.94	-0.07
MP-419	CALIPER/GAMMA UP01	-	321	6.49	6.50	-0.01
MP-420	FTC DOWN01	-	319.4	-0.7	-0.7	0
MP-420	SUSPENSION DOWN01	317.6	319.4	7.51	7.45	0.06
MP-420	HIRAT DOWN01/UP0102	319	319.4	4.02	4.00	0.02
MP-420	DUIN/GAMMA UP01	318.8	319.4	6.7	6.7	0.0
MP-420	DUIN/GAMMA UP02	-	319.4	6.7	6.8	-0.1
MP-420	CALIPER/GAMMA UP01	-	319.4	6.07	6.00	0.07
MP-421	FTC DOWN01	-	320.3	-0.48	-0.45	-0.03
MP-421	HIRAT DOWN/UP01	319.2	320.3	4.24	4.12	0.12
MP-421	DUIN/GAMMA UP01	320.1	320.3	6.97	7.05	-0.08
MP-421	DUIN/GAMMA UP02	-	320.3	6.97	7.05	-0.08
MP-421	CALIPER/GAMMA UP01	-	320.3	6.34	6.25	0.09
MP-421	SUSPENSION DOWN01	319.3	320.3	7.71	7.61	0.10
MP-422	FTC DOWN01	-	320	-0.33	-0.30	-0.03
MP-422	DUIN/GAMMA UP01	319	320	7.12	7.15	-0.03
MP-422	HIRAT DOWN/UP01	318.8	320	4.39	4.35	0.04
MP-422	SUSPENSION DOWN01	319.3	320	7.87	7.87	0.0
MP-422	HIRAT UP02	-	320	4.39	4.38	0.01
MP-422	CALIPER/GAMMA UP01	-	320	6.49	6.50	-0.01

⁽¹⁾ ALL DEPTHS REFERENCED TO GROUND SURFACE ELEVATION

⁽²⁾ * - INCLINED BORING, DEPTHS ALONG BOREHOLE AXIS

- N/A or PROBE DID NOT TOUCH BOTTOM OF BORING

** MAXIMUM ASDE PER ASTM D6167-11 SECTION 9.15.4 IS 0.4% OF TOTAL LOG DEPTH

Table 3, continued. Boring Bottom Depths and After Survey Depth Error (ASDE)

BORING NUMBER	TOOL AND RUN NUMBER	TOOL HIT BOTTOM DEPTH ⁽¹⁾ (FEET)	DRILLER DEPTH ⁽¹⁾ (FEET)	STARTING DEPTH REF. ⁽¹⁾ (FEET)	ENDING DEPTH REF. ⁽¹⁾ (FEET)	ASDE ** (FEET)
MP-423	FTC DOWN01	-	319	-0.30	-0.30	0.0
MP-423	DUIN/GAMMA UP01	318.75	319	7.15	7.00	0.15
MP-423	DUIN/GAMMA UP02	-	319	7.15	7.30	-0.15
MP-423	HIRAT DOWN/UP01	318.7	319	4.42	4.29	0.13
MP-423	SUSPENSION DOWN01	317.6	319	7.91	7.94	-0.03
MP-423	CALIPER/GAMMA UP01	-	319	6.52	6.50	0.02
MP-425*	DUIN/GAMMA UP01	271.85	273	6.66	6.65	0.01
MP-425*	DUIN/GAMMA UP02	-	273	6.66	6.70	-0.04
MP-425*	HIRAT DOWN/UP01	271.6	273	3.93	3.79	0.14
MP-425*	HIRAT UP02	-	273	3.93	3.88	0.05
MP-425*	SUSPENSION DOWN01	271.7	273	7.41	7.15	0.26
MP-425*	CALIPER/GAMMA UP01	-	273	6.03	6.00	0.03
MP-426*	DUIN/GAMMA UP01	271.5	272.3	7.12	7.15	-0.03
MP-426*	DUIN/GAMMA UP02	-	272.3	7.12	7.15	-0.03
MP-426*	HIRAT DOWN/UP01	271.3	272.3	4.39	4.16	0.23
MP-426*	SUSPENSION DOWN01	270.1	272.3	7.87	7.55	0.32
MP-426*	CALIPER/GAMMA UP01	-	272.3	6.49	6.40	0.09
MP-428	FTC DOWN01	-	250.7	-1.21	-1.15	-0.06
MP-428	DUIN/GAMMA UP01	250.05	250.7	6.24	6.25	-0.01
MP-428	DUIN/GAMMA UP02	-	250.7	6.24	6.20	0.04
MP-428	HIRAT DOWN/UP01	249.7	250.7	3.51	3.39	0.12
MP-428	CALIPER/GAMMA UP01	-	250.7	5.61	5.55	0.06
MP-429	FTC DOWN01	-	199.2	-0.25	-0.15	0.10
MP-429	DUIN/GAMMA UP01	199.05	199.2	7.2	7.2	0.0
MP-429	DUIN/GAMMA UP02	-	199.2	7.2	7.4	-0.2
MP-429	HIRAT DOWN/UP01	198.5	199.2	4.47	4.40	0.07
MP-429	CALIPER/GAMMA UP01	-	199.2	6.57	6.60	-0.03

⁽¹⁾ ALL DEPTHS REFERENCED TO GROUND SURFACE ELEVATION

⁽²⁾ * - INCLINED BORING, DEPTHS ALONG BOREHOLE AXIS

- N/A or PROBE DID NOT TOUCH BOTTOM OF BORING

** MAXIMUM ASDE PER ASTM D6167-11 SECTION 9.15.4 IS 0.4% OF TOTAL LOG DEPTH

Table 4. Boring Deviation Data Summary

BORING NUMBER	TOOL AND RUN NUMBER(S)	MEAN DEVIATION AND AZIMUTH (DEGREES TN)	SURVEY DEPTH ⁽¹⁾ (FEET)	VERTICAL DEPTH ⁽¹⁾ (FEET)	DEPTH ERROR ⁽¹⁾ (FEET)	HORIZONTAL OFFSET AT BOTTOM (FEET)
MP-101	HIRAT DOWN01	1.8 – N288.9	539.42	539.10	0.32	17.28
MP-101	HIRAT UP01	1.9 – N289.3	539.40	539.04	0.38	17.82
MP-102	HIRAT DOWN01	0.6 – N187.3	348.31	348.26	0.05	3.48
MP-102	HIRAT UP0102	0.7 – N191.5	348.42	348.37	0.05	4.26
MP-111	HIRAT DOWN01	1.8 – N266.4	173.26	173.17	0.09	5.39
MP-111	HIRAT UP0102	1.5 – N259.4	172.87	172.81	0.06	4.62
MP-111PS	HIRAT DOWN01	3.0 – N287.8	58.21	58.13	0.08	3.07
MP-111PS	HIRAT UP01	2.8 – N293.6	58.07	58.00	0.07	2.88
MP-112*	HIRAT DOWN03	27.9 – N48.0	176.49	155.93	20.56	82.68
MP-112*	HIRAT UP01	28.0 – N46.5	176.28	155.57	20.71	82.89
MP-113*	HIRAT DOWN01	25.6 – N331.6	177.25	156.66	20.59	75.04
MP-113*	HIRAT UP01	28.0 – N322.6	177.12	156.46	20.66	83.00
MP-120	HIRAT DOWN01	2.4 – N281.4	348.25	347.93	0.32	14.48
MP-120	HIRAT UP01	2.5 – N283.7	348.24	347.90	0.34	15.02
MP-122PSA	HIRAT DOWN01	0.6 – N75.8	37.71	37.71	0.00	0.38
MP-122PSA	HIRAT UP01	0.7 – N78.9	37.49	37.44	0.05	0.45
MP-122PSB	HIRAT DOWN01	1.0 – N289.9	50.10	50.09	0.01	0.88
MP-122PSB	HIRAT UP01	0.9 – N290.8	49.95	49.94	0.01	0.79
MP-201	HIRAT DOWN01	1.5 – N284.1	419.62	419.41	0.22	11.06
MP-201	HIRAT UP0103	1.6 – N273.6	419.56	419.30	0.26	11.95
MP-202	HIRAT DOWN01	0.7 – N147.3	459.47	459.37	0.10	5.17
MP-202	HIRAT UP0102	0.7 – N133.1	459.38	459.27	0.11	5.34
MP-212*	HIRAT DOWN01	27.2 – N46.3	176.68	157.11	19.57	80.80
MP-212*	HIRAT UP0102	27.2 – N46.6	176.48	156.96	19.52	80.65
MP-213*	HIRAT DOWN01	27.7 – N323.7	175.64	155.08	20.56	81.51
MP-213*	HIRAT UP01	27.9 – N326.3	175.62	155.23	20.39	82.13
MP-219A	HIRAT DOWN01	0.4 – N305.0	268.19	267.92	0.27	1.70
MP-219A	HIRAT UP0102	0.4 – N276.8	268.12	267.94	0.18	1.88
MP-401	HIRAT DOWN01	0.5 – N269.0	418.63	418.52	0.11	3.67
MP-401	HIRAT UP0102	0.5 – N269.4	418.44	418.42	0.02	3.63
MP-409	HIRAT DOWN01	2.0 – N259.1	249.26	249.08	0.18	8.78
MP-409	HIRAT UP01	2.0 – N259.5	249.09	248.93	0.16	8.84
MP-412	HIRAT DOWN01	1.8 – N210.9	319.86	319.67	0.19	9.97
MP-412	HIRAT UP0102	1.7 – N214.0	319.56	319.38	0.18	9.41

⁽¹⁾ ALL DEPTHS REFERENCED TO GROUND SURFACE ELEVATION

⁽²⁾ * - INCLINED BORING, DEPTHS ALONG BOREHOLE AXIS

Table 4, continued. Boring Deviation Data Summary

BORING NUMBER	TOOL AND RUN NUMBER(S)	MEAN DEVIATION AND AZIMUTH (DEGREES TN)	SURVEY DEPTH ⁽¹⁾ (FEET)	VERTICAL DEPTH ⁽¹⁾ (FEET)	DEPTH ERROR ⁽¹⁾ (FEET)	HORIZONTAL OFFSET AT BOTTOM (FEET)
MP-415	HIRAT DOWN01	1.6 – N148.3	314.56	314.42	0.14	8.97
MP-415	HIRAT UP0103	1.7 – N150.2	314.55	314.40	0.15	9.19
MP-416	HIRAT DOWN01	1.1 – N1.5	320.51	320.43	0.08	6.39
MP-416	HIRAT UP0102	1.2 – N351.1	320.19	351.12	0.07	6.67
MP-417	HIRAT DOWN01	1.3 – N109.2	319.04	318.96	0.08	7.20
MP-417	HIRAT UP01	1.4 – N103.9	318.81	318.70	0.11	7.93
MP-418A	HIRAT DOWN0102	1.5 – N134.2	319.71	319.58	0.13	8.12
MP-418A	HIRAT UP0103	1.7 – N125.5	319.64	319.49	0.15	9.44
MP-419	HIRAT DOWN01	0.8 – N137.9	320.05	320.01	0.04	4.45
MP-419	HIRAT UP01	0.8 – N151.3	319.21	319.17	0.04	4.64
MP-420	HIRAT DOWN01	0.6 – N216.0	318.96	318.93	0.03	3.37
MP-420	HIRAT UP01	0.4 – N217.2	318.98	318.97	0.01	2.09
MP-421	HIRAT DOWN01	0.6 – N250.2	319.28	319.26	0.02	3.26
MP-421	HIRAT UP01	1.0 – N258.3	319.18	319.12	0.06	5.34
MP-422	HIRAT DOWN01	1.2 – N306.6	318.87	318.78	0.09	6.93
MP-422	HIRAT UP0102	1.3 – N313.6	318.89	318.78	0.11	7.32
MP-423	HIRAT DOWN01	1.6 – N318.1	318.70	318.57	0.13	8.66
MP-423	HIRAT UP01	1.4 – N323.6	318.67	318.55	0.12	7.67
MP-425*	HIRAT DOWN01	28.6 – N48.6	271.76	238.71	33.05	129.87
MP-425*	HIRAT UP0102	28.5 – N48.6	271.67	238.66	33.01	129.77
MP-426*	HIRAT DOWN01	28.3 – N320.7	271.37	238.87	32.50	128.75
MP-426*	HIRAT UP01	28.2 – N320.3	271.18	238.90	32.28	128.31
MP-428	HIRAT DOWN01	0.6 – N21.1	250.60	250.55	0.05	2.68
MP-428	HIRAT UP01	0.7 – N14.7	249.60	249.56	0.04	2.92
MP-429	HIRAT DOWN01	1.3 – N51.1	198.79	198.74	0.05	4.49
MP-429	HIRAT UP01	0.8 – N65.5	198.43	198.41	0.02	2.89

⁽¹⁾ ALL DEPTHS REFERENCED TO GROUND SURFACE ELEVATION

⁽²⁾ * - INCLINED BORING, DEPTHS ALONG BOREHOLE AXIS

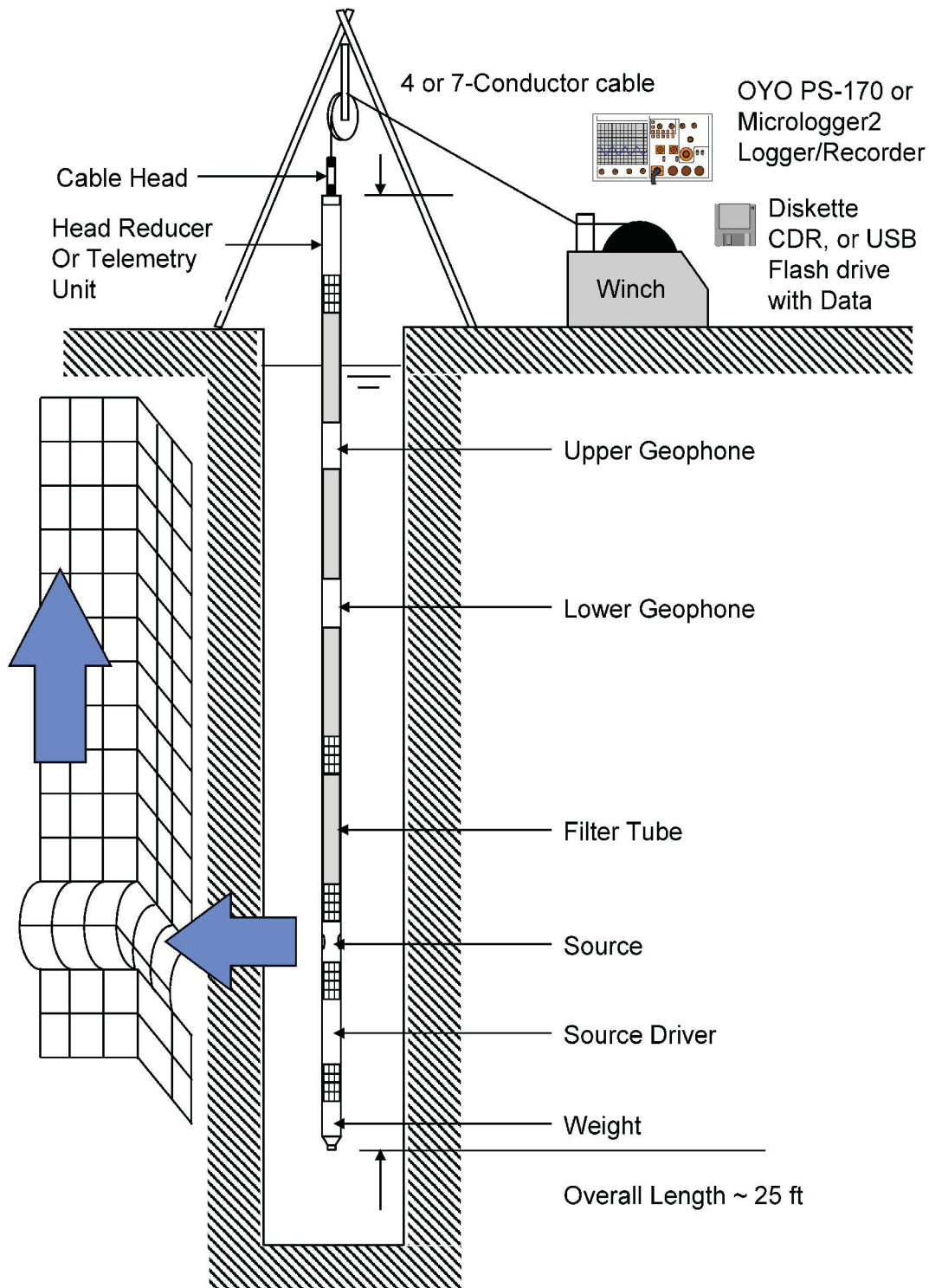


Figure 1: Concept illustration of Suspension P S logging system

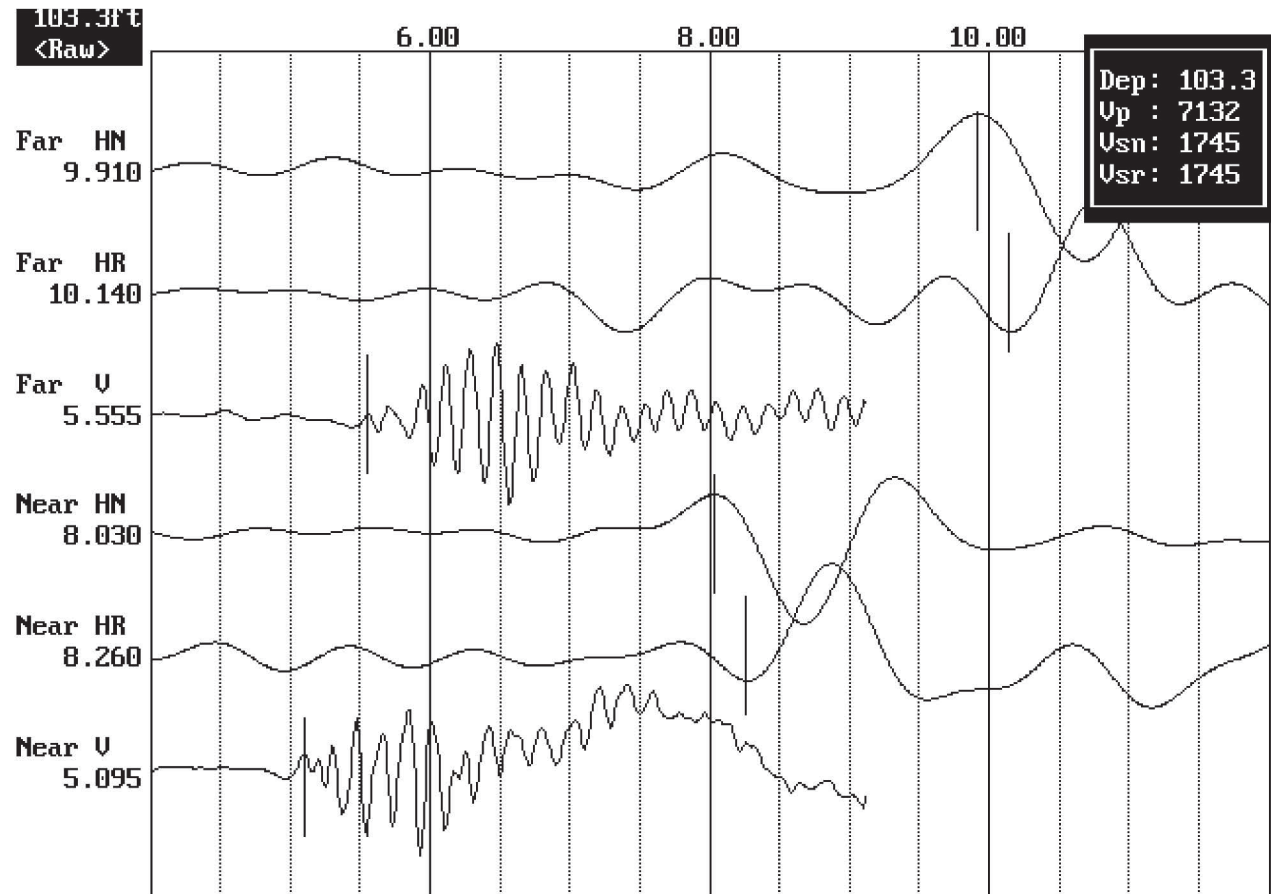


Figure 2: Example of filtered (1400 Hz lowpass) suspension record

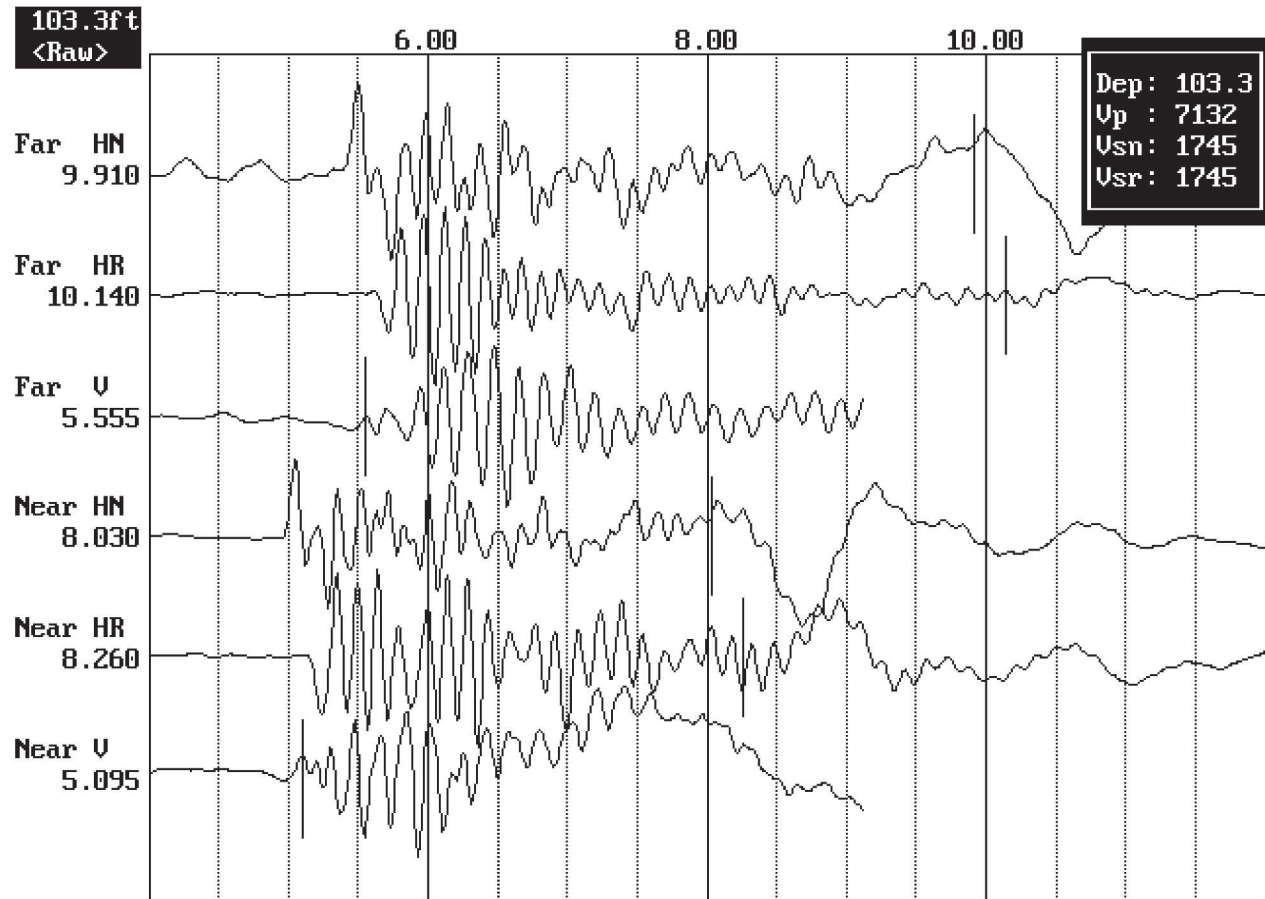


Figure 3. Example of unfiltered suspension record

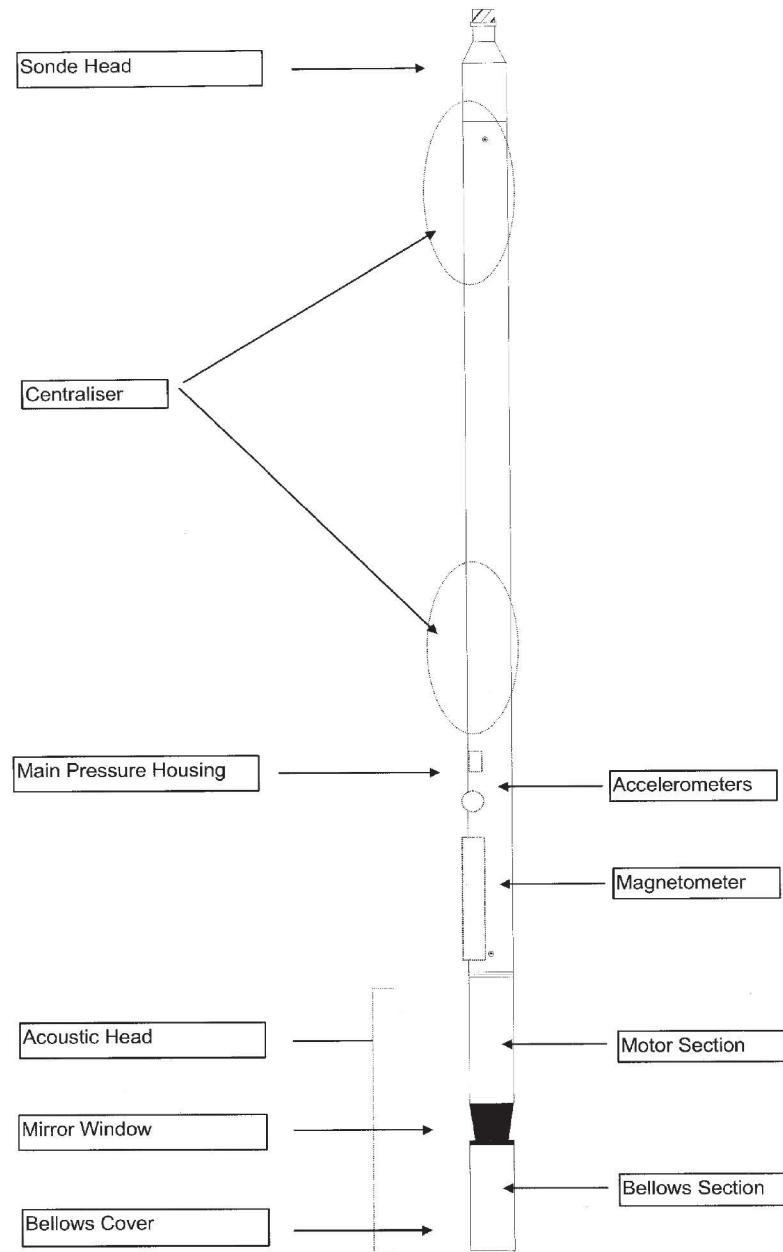


Figure 4: Concept illustration of televIEWER probe

CLINCH RIVER SMR PROJECT BOREHOLE MP-101 Receiver to Receiver V_s and V_p Analysis

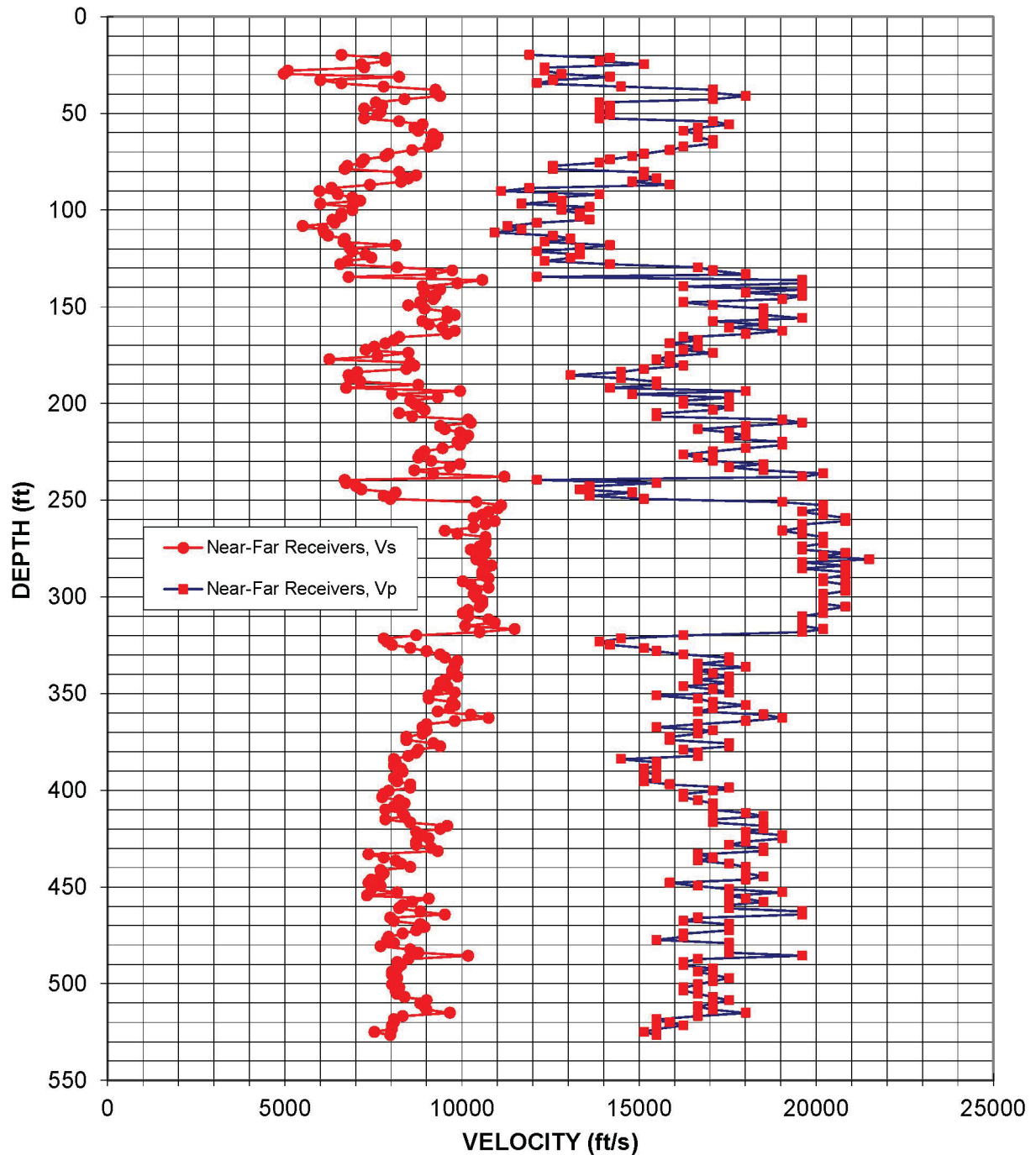


Figure 5: Boring MP-101, Suspension R1-R2 P- and S_H -wave velocities

Table 5. Boring MP-101, Suspension R1-R2 depths and P- and S_H-wave velocities

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-101**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
19.7	6600	11900	0.28	6.0	2010	3630	0.28
21.3	7840	14180	0.28	6.5	2390	4320	0.28
23.0	7840	13890	0.27	7.0	2390	4230	0.27
24.6	7170	15150	0.36	7.5	2180	4620	0.36
26.3	7250	12350	0.24	8.0	2210	3760	0.24
27.9	5090	12350	0.40	8.5	1550	3760	0.40
29.5	4980	12820	0.41	9.0	1520	3910	0.41
31.2	8230	14180	0.25	9.5	2510	4320	0.25
32.8	6010	12580	0.35	10.0	1830	3830	0.35
34.5	6600	12120	0.29	10.5	2010	3690	0.29
36.1	7800	14490	0.30	11.0	2380	4420	0.30
37.7	9260	17090	0.29	11.5	2820	5210	0.29
39.4	9260	17090	0.29	12.0	2820	5210	0.29
41.0	9390	18020	0.31	12.5	2860	5490	0.31
42.7	8390	17090	0.34	13.0	2560	5210	0.34
44.3	7580	13890	0.29	13.5	2310	4230	0.29
45.9	7750	14180	0.29	14.0	2360	4320	0.29
47.6	7250	14180	0.32	14.5	2210	4320	0.32
49.2	7710	13890	0.28	15.0	2350	4230	0.28
50.9	7620	14180	0.30	15.5	2320	4320	0.30
52.5	7250	13890	0.31	16.0	2210	4230	0.31
54.1	8230	17090	0.35	16.5	2510	5210	0.35
55.8	8890	17540	0.33	17.0	2710	5350	0.33
57.4	8660	16670	0.32	17.5	2640	5080	0.32
59.1	8770	16260	0.29	18.0	2670	4960	0.29
60.7	9200	16670	0.28	18.5	2800	5080	0.28
62.3	9320	16670	0.27	19.0	2840	5080	0.27
64.0	9130	17090	0.30	19.5	2780	5210	0.30
65.6	9260	17090	0.29	20.0	2820	5210	0.29
67.3	9070	16260	0.27	20.5	2760	4960	0.27
68.9	8600	15870	0.29	21.0	2620	4840	0.29
70.9	7940	15150	0.31	21.6	2420	4620	0.31
72.2	7840	14810	0.31	22.0	2390	4520	0.31
73.8	7250	14180	0.32	22.5	2210	4320	0.32
75.5	7170	13890	0.32	23.0	2180	4230	0.32
77.1	6770	12580	0.30	23.5	2060	3830	0.30
78.7	6700	12580	0.30	24.0	2040	3830	0.30
80.4	8230	15150	0.29	24.5	2510	4620	0.29

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-101**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
82.0	8710	15150	0.25	25.0	2660	4620	0.25
83.7	8490	15500	0.29	25.5	2590	4730	0.29
85.3	8280	14810	0.27	26.0	2520	4520	0.27
86.9	7410	15870	0.36	26.5	2260	4840	0.36
88.6	6320	11900	0.30	27.0	1930	3630	0.30
90.2	5980	11110	0.30	27.5	1820	3390	0.30
91.9	6500	13890	0.36	28.0	1980	4230	0.36
93.5	6910	12580	0.28	28.5	2110	3830	0.28
95.1	7130	12820	0.28	29.0	2170	3910	0.28
96.8	6010	11700	0.32	29.5	1830	3560	0.32
98.4	6910	13610	0.33	30.0	2110	4150	0.33
100.1	6910	12820	0.30	30.5	2110	3910	0.30
101.7	6600	13330	0.34	31.0	2010	4060	0.34
103.4	6600	13330	0.34	31.5	2010	4060	0.34
105.0	6350	13610	0.36	32.0	1940	4150	0.36
106.6	6410	12120	0.31	32.5	1950	3690	0.31
108.3	5510	11300	0.34	33.0	1680	3440	0.34
109.9	6090	11700	0.31	33.5	1860	3560	0.31
111.6	6120	10930	0.27	34.0	1860	3330	0.27
113.2	6230	12580	0.34	34.5	1900	3830	0.34
114.8	6700	13070	0.32	35.0	2040	3980	0.32
116.5	6670	12350	0.29	35.5	2030	3760	0.29
118.1	8130	14180	0.26	36.0	2480	4320	0.26
119.8	6840	13330	0.32	36.5	2080	4060	0.32
121.4	6910	12120	0.26	37.0	2110	3690	0.26
123.0	7290	13330	0.29	37.5	2220	4060	0.29
124.7	7450	13070	0.26	38.0	2270	3980	0.26
126.3	6770	12350	0.29	38.5	2060	3760	0.29
128.0	6570	14180	0.36	39.0	2000	4320	0.36
129.6	8180	16670	0.34	39.5	2490	5080	0.34
131.2	9730	17090	0.26	40.0	2970	5210	0.26
133.2	9130	18020	0.33	40.6	2780	5490	0.33
134.5	6800	12120	0.27	41.0	2070	3690	0.27
136.2	10580	19610	0.29	41.5	3230	5980	0.29
137.8	9880	19610	0.33	42.0	3010	5980	0.33
139.4	8890	16260	0.29	42.5	2710	4960	0.29
141.1	9390	19610	0.35	43.0	2860	5980	0.35
142.7	8950	18020	0.34	43.5	2730	5490	0.34
144.4	9260	19610	0.36	44.0	2820	5980	0.36
146.0	9200	19050	0.35	44.5	2800	5810	0.35

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-101**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
147.6	8830	16260	0.29	45.0	2690	4960	0.29
149.3	8490	17090	0.34	45.5	2590	5210	0.34
150.9	8950	18520	0.35	46.0	2730	5640	0.35
152.6	9590	18520	0.32	46.5	2920	5640	0.32
154.2	9800	18520	0.31	47.0	2990	5640	0.31
155.8	9590	19610	0.34	47.5	2920	5980	0.34
157.5	8890	17090	0.31	48.0	2710	5210	0.31
159.1	9070	18520	0.34	48.5	2760	5640	0.34
160.8	9460	17540	0.30	49.0	2880	5350	0.30
162.4	9800	19050	0.32	49.5	2990	5810	0.32
164.0	9590	18020	0.30	50.0	2920	5490	0.30
165.7	8230	16260	0.33	50.5	2510	4960	0.33
167.3	8080	16670	0.35	51.0	2460	5080	0.35
169.0	7840	15870	0.34	51.5	2390	4840	0.34
170.6	7530	16670	0.37	52.0	2300	5080	0.37
172.2	7290	16260	0.37	52.5	2220	4960	0.37
173.9	8490	17090	0.34	53.0	2590	5210	0.34
175.5	7620	15870	0.35	53.5	2320	4840	0.35
177.2	6260	15500	0.40	54.0	1910	4730	0.40
178.8	8550	15870	0.30	54.5	2610	4840	0.30
180.5	8660	16260	0.30	55.0	2640	4960	0.30
182.1	8440	15150	0.28	55.5	2570	4620	0.28
183.7	7050	14490	0.34	56.0	2150	4420	0.34
185.4	6800	13070	0.31	56.5	2070	3980	0.31
187.0	6840	14490	0.36	57.0	2080	4420	0.36
188.7	7130	15500	0.37	57.5	2170	4730	0.37
190.3	8770	15500	0.26	58.0	2670	4730	0.26
191.9	6730	14180	0.35	58.5	2050	4320	0.35
193.6	9950	18020	0.28	59.0	3030	5490	0.28
195.2	8030	14810	0.29	59.5	2450	4520	0.29
196.9	9320	17540	0.30	60.0	2840	5350	0.30
198.5	8550	16260	0.31	60.5	2610	4960	0.31
200.1	8660	16260	0.30	61.0	2640	4960	0.30
201.8	8830	17540	0.33	61.5	2690	5350	0.33
203.4	8950	17090	0.31	62.0	2730	5210	0.31
205.1	8230	15500	0.30	62.5	2510	4730	0.30
206.7	8600	15500	0.28	63.0	2620	4730	0.28
208.3	10180	19050	0.30	63.5	3100	5810	0.30
210.0	10260	19610	0.31	64.0	3130	5980	0.31
211.6	9390	18020	0.31	64.5	2860	5490	0.31

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-101**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
213.3	9520	16670	0.26	65.0	2900	5080	0.26
214.9	9950	17540	0.26	65.5	3030	5350	0.26
216.5	10180	18020	0.27	66.0	3100	5490	0.27
218.2	10100	17540	0.25	66.5	3080	5350	0.25
219.8	9880	19050	0.32	67.0	3010	5810	0.32
221.5	9950	19050	0.31	67.5	3030	5810	0.31
223.1	9460	18020	0.31	68.0	2880	5490	0.31
224.7	8950	17090	0.31	68.5	2730	5210	0.31
226.4	8830	16260	0.29	69.0	2690	4960	0.29
228.0	8770	16670	0.31	69.5	2670	5080	0.31
229.7	9130	17090	0.30	70.0	2780	5210	0.30
231.3	9950	18520	0.30	70.5	3030	5640	0.30
232.9	9660	17540	0.28	71.0	2940	5350	0.28
234.6	8660	18520	0.36	71.5	2640	5640	0.36
236.2	9200	20200	0.37	72.0	2800	6160	0.37
237.9	11200	19610	0.26	72.5	3420	5980	0.26
239.5	6700	12120	0.28	73.0	2040	3690	0.28
241.1	6730	15500	0.38	73.5	2050	4730	0.38
242.8	7020	13610	0.32	74.0	2140	4150	0.32
244.4	7170	13330	0.30	74.5	2180	4060	0.30
246.1	8130	14810	0.28	75.0	2480	4520	0.28
247.7	7800	13610	0.26	75.5	2380	4150	0.26
249.3	7980	15150	0.31	76.0	2430	4620	0.31
251.0	10420	19050	0.29	76.5	3180	5810	0.29
252.6	11110	20200	0.28	77.0	3390	6160	0.28
254.3	11020	20200	0.29	77.5	3360	6160	0.29
255.9	10750	19610	0.28	78.0	3280	5980	0.28
257.6	10580	20200	0.31	78.5	3230	6160	0.31
259.2	10340	20830	0.34	79.0	3150	6350	0.34
260.8	10930	20830	0.31	79.5	3330	6350	0.31
262.5	10670	19610	0.29	80.0	3250	5980	0.29
264.1	10340	19610	0.31	80.5	3150	5980	0.31
265.8	9520	19050	0.33	81.0	2900	5810	0.33
267.4	9880	19610	0.33	81.5	3010	5980	0.33
269.0	10670	20200	0.31	82.0	3250	6160	0.31
270.7	10670	20200	0.31	82.5	3250	6160	0.31
272.3	10670	20200	0.31	83.0	3250	6160	0.31
274.0	10500	19610	0.30	83.5	3200	5980	0.30
275.6	10260	19610	0.31	84.0	3130	5980	0.31
277.2	10670	20830	0.32	84.5	3250	6350	0.32

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-101**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
278.9	10420	20200	0.32	85.0	3180	6160	0.32
280.5	10420	21510	0.35	85.5	3180	6550	0.35
282.2	10580	19610	0.29	86.0	3230	5980	0.29
283.8	10840	20830	0.31	86.5	3300	6350	0.31
285.4	10670	19610	0.29	87.0	3250	5980	0.29
287.1	10580	20830	0.33	87.5	3230	6350	0.33
288.7	10580	20830	0.33	88.0	3230	6350	0.33
290.4	10750	20200	0.30	88.5	3280	6160	0.30
292.0	10030	20200	0.34	89.0	3060	6160	0.34
293.6	10260	20830	0.34	89.5	3130	6350	0.34
295.3	10750	20830	0.32	90.0	3280	6350	0.32
296.9	10420	20830	0.33	90.5	3180	6350	0.33
298.6	10340	20200	0.32	91.0	3150	6160	0.32
300.2	10420	20200	0.32	91.5	3180	6160	0.32
301.8	10580	20200	0.31	92.0	3230	6160	0.31
303.5	10580	20200	0.31	92.5	3230	6160	0.31
305.1	10500	20830	0.33	93.0	3200	6350	0.33
306.8	10180	20200	0.33	93.5	3100	6160	0.33
308.4	10030	20200	0.34	94.0	3060	6160	0.34
310.0	10180	19610	0.32	94.5	3100	5980	0.32
311.7	10750	19610	0.28	95.0	3280	5980	0.28
313.3	10930	19610	0.27	95.5	3330	5980	0.27
315.0	10100	19610	0.32	96.0	3080	5980	0.32
316.6	11490	20200	0.26	96.5	3500	6160	0.26
318.2	10500	19610	0.30	97.0	3200	5980	0.30
319.9	8710	16260	0.30	97.5	2660	4960	0.30
321.5	7800	14490	0.30	98.0	2380	4420	0.30
323.2	7890	13890	0.26	98.5	2400	4230	0.26
324.8	8030	14180	0.26	99.0	2450	4320	0.26
326.4	8550	15150	0.27	99.5	2610	4620	0.27
328.1	9010	15500	0.25	100.0	2750	4730	0.25
329.7	9390	16260	0.25	100.5	2860	4960	0.25
331.4	9520	17540	0.29	101.0	2900	5350	0.29
333.0	9880	17540	0.27	101.5	3010	5350	0.27
334.7	9800	16670	0.24	102.0	2990	5080	0.24
336.3	9800	18020	0.29	102.5	2990	5490	0.29
337.9	9730	16670	0.24	103.0	2970	5080	0.24
339.6	9730	17090	0.26	103.5	2970	5210	0.26
341.2	9880	17540	0.27	104.0	3010	5350	0.27
342.9	9520	16670	0.26	104.5	2900	5080	0.26

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-101**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
344.5	9390	17540	0.30	105.0	2860	5350	0.30
346.1	9590	16260	0.23	105.5	2920	4960	0.23
347.8	9320	17090	0.29	106.0	2840	5210	0.29
349.4	9800	17540	0.27	106.5	2990	5350	0.27
351.1	9070	15500	0.24	107.0	2760	4730	0.24
352.7	9070	16670	0.29	107.5	2760	5080	0.29
354.3	9730	17090	0.26	108.0	2970	5210	0.26
356.0	9800	18020	0.29	108.5	2990	5490	0.29
357.6	9660	17090	0.27	109.0	2940	5210	0.27
359.3	9320	16670	0.27	109.5	2840	5080	0.27
360.9	10260	18520	0.28	110.0	3130	5640	0.28
362.5	10750	19050	0.27	110.5	3280	5810	0.27
364.2	9800	18020	0.29	111.0	2990	5490	0.29
365.8	9010	16670	0.29	111.5	2750	5080	0.29
367.5	8890	15500	0.26	112.0	2710	4730	0.26
369.1	9010	17090	0.31	112.5	2750	5210	0.31
370.7	8890	16670	0.30	113.0	2710	5080	0.30
372.4	8440	15870	0.30	113.5	2570	4840	0.30
374.0	8440	15870	0.30	114.0	2570	4840	0.30
375.7	9200	17540	0.31	114.5	2800	5350	0.31
377.3	9390	17540	0.30	115.0	2860	5350	0.30
378.9	8770	16260	0.29	115.5	2670	4960	0.29
380.6	8710	16670	0.31	116.0	2660	5080	0.31
382.2	8490	16670	0.32	116.5	2590	5080	0.32
383.9	8080	14490	0.27	117.0	2460	4420	0.27
385.5	8130	15500	0.31	117.5	2480	4730	0.31
387.1	8080	15500	0.31	118.0	2460	4730	0.31
388.8	8280	15150	0.29	118.5	2520	4620	0.29
390.4	8330	15150	0.28	119.0	2540	4620	0.28
392.1	8180	15500	0.31	119.5	2490	4730	0.31
393.7	8080	15500	0.31	120.0	2460	4730	0.31
395.3	8180	15150	0.29	120.5	2490	4620	0.29
397.0	8550	15870	0.30	121.0	2610	4840	0.30
398.6	8550	17540	0.34	121.5	2610	5350	0.34
400.3	7940	17090	0.36	122.0	2420	5210	0.36
401.9	7800	16260	0.35	122.5	2380	4960	0.35
403.5	7750	16260	0.35	123.0	2360	4960	0.35
405.2	8230	16670	0.34	123.5	2510	5080	0.34
406.8	8390	17090	0.34	124.0	2560	5210	0.34
408.5	8080	17090	0.36	124.5	2460	5210	0.36

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
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American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
410.1	7840	17090	0.37	125.0	2390	5210	0.37
411.8	8330	18020	0.36	125.5	2540	5490	0.36
413.4	8390	18520	0.37	126.0	2560	5640	0.37
415.0	7840	17090	0.37	126.5	2390	5210	0.37
416.7	8550	17090	0.33	127.0	2610	5210	0.33
418.3	9590	18520	0.32	127.5	2920	5640	0.32
420.0	9390	18520	0.33	128.0	2860	5640	0.33
421.6	8710	18020	0.35	128.5	2660	5490	0.35
423.2	8890	19050	0.36	129.0	2710	5810	0.36
424.9	9070	19050	0.35	129.5	2760	5810	0.35
426.5	8710	18020	0.35	130.0	2660	5490	0.35
428.2	8710	17540	0.34	130.5	2660	5350	0.34
429.8	9130	18520	0.34	131.0	2780	5640	0.34
431.4	9320	18520	0.33	131.5	2840	5640	0.33
433.1	7370	16670	0.38	132.0	2250	5080	0.38
434.7	7800	17090	0.37	132.5	2380	5210	0.37
436.4	8130	16670	0.34	133.0	2480	5080	0.34
438.0	8280	17540	0.36	133.5	2520	5350	0.36
439.6	8550	18020	0.35	134.0	2610	5490	0.35
441.3	7710	18020	0.39	134.5	2350	5490	0.39
442.9	7800	18020	0.38	135.0	2380	5490	0.38
444.6	7710	18520	0.40	135.5	2350	5640	0.40
446.2	7450	18020	0.40	136.0	2270	5490	0.40
447.8	7370	15870	0.36	136.5	2250	4840	0.36
449.5	7710	16670	0.36	137.0	2350	5080	0.36
451.1	7450	17540	0.39	137.5	2270	5350	0.39
452.8	8180	19050	0.39	138.0	2490	5810	0.39
454.4	7330	17540	0.39	138.5	2230	5350	0.39
456.0	9070	18020	0.33	139.0	2760	5490	0.33
457.7	8600	18520	0.36	139.5	2620	5640	0.36
459.3	8330	17540	0.35	140.0	2540	5350	0.35
461.0	8230	17540	0.36	140.5	2510	5350	0.36
462.6	8830	19610	0.37	141.0	2690	5980	0.37
464.2	9520	19610	0.35	141.5	2900	5980	0.35
465.9	7980	16670	0.35	142.0	2430	5080	0.35
467.5	8080	16260	0.34	142.5	2460	4960	0.34
469.2	8830	17540	0.33	143.0	2690	5350	0.33
470.8	8950	17540	0.32	143.5	2730	5350	0.32
472.4	8710	17540	0.34	144.0	2660	5350	0.34
474.1	8330	16260	0.32	144.5	2540	4960	0.32

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-101**

American Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p	
(ft)	(ft/s)	(ft/s)	
475.7	7940	16260	0.34
477.4	7890	15500	0.33
479.0	8080	17540	0.37
480.6	7710	17540	0.38
482.3	8550	17540	0.34
483.9	8770	17540	0.33
485.6	10180	19610	0.32
487.2	8490	16670	0.32
488.9	8180	16260	0.33
490.5	8280	16260	0.32
492.1	8180	17090	0.35
493.8	8030	16670	0.35
495.4	8030	17090	0.36
497.1	8180	17540	0.36
498.7	8080	17090	0.36
500.3	8030	16670	0.35
502.0	8230	16260	0.33
503.6	8130	16260	0.33
505.3	8180	16670	0.34
506.9	8390	17090	0.34
508.5	9010	17540	0.32
510.2	8830	17090	0.32
511.8	8950	16670	0.30
513.5	9010	17090	0.31
515.1	9660	18020	0.30
516.7	8330	16670	0.33
518.4	8080	15500	0.31
520.0	8080	15870	0.33
521.7	8030	16260	0.34
523.3	8030	15500	0.32
524.9	7530	15150	0.34
526.6	7980	15500	0.32

Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p	
(m)	(m/s)	(m/s)	
145.0	2420	4960	0.34
145.5	2400	4730	0.33
146.0	2460	5350	0.37
146.5	2350	5350	0.38
147.0	2610	5350	0.34
147.5	2670	5350	0.33
148.0	3100	5980	0.32
148.5	2590	5080	0.32
149.0	2490	4960	0.33
149.5	2520	4960	0.32
150.0	2490	5210	0.35
150.5	2450	5080	0.35
151.0	2450	5210	0.36
151.5	2490	5350	0.36
152.0	2460	5210	0.36
152.5	2450	5080	0.35
153.0	2510	4960	0.33
153.5	2480	4960	0.33
154.0	2490	5080	0.34
154.5	2560	5210	0.34
155.0	2750	5350	0.32
155.5	2690	5210	0.32
156.0	2730	5080	0.30
156.5	2750	5210	0.31
157.0	2940	5490	0.30
157.5	2540	5080	0.33
158.0	2460	4730	0.31
158.5	2460	4840	0.33
159.0	2450	4960	0.34
159.5	2450	4730	0.32
160.0	2300	4620	0.34
160.5	2430	4730	0.32

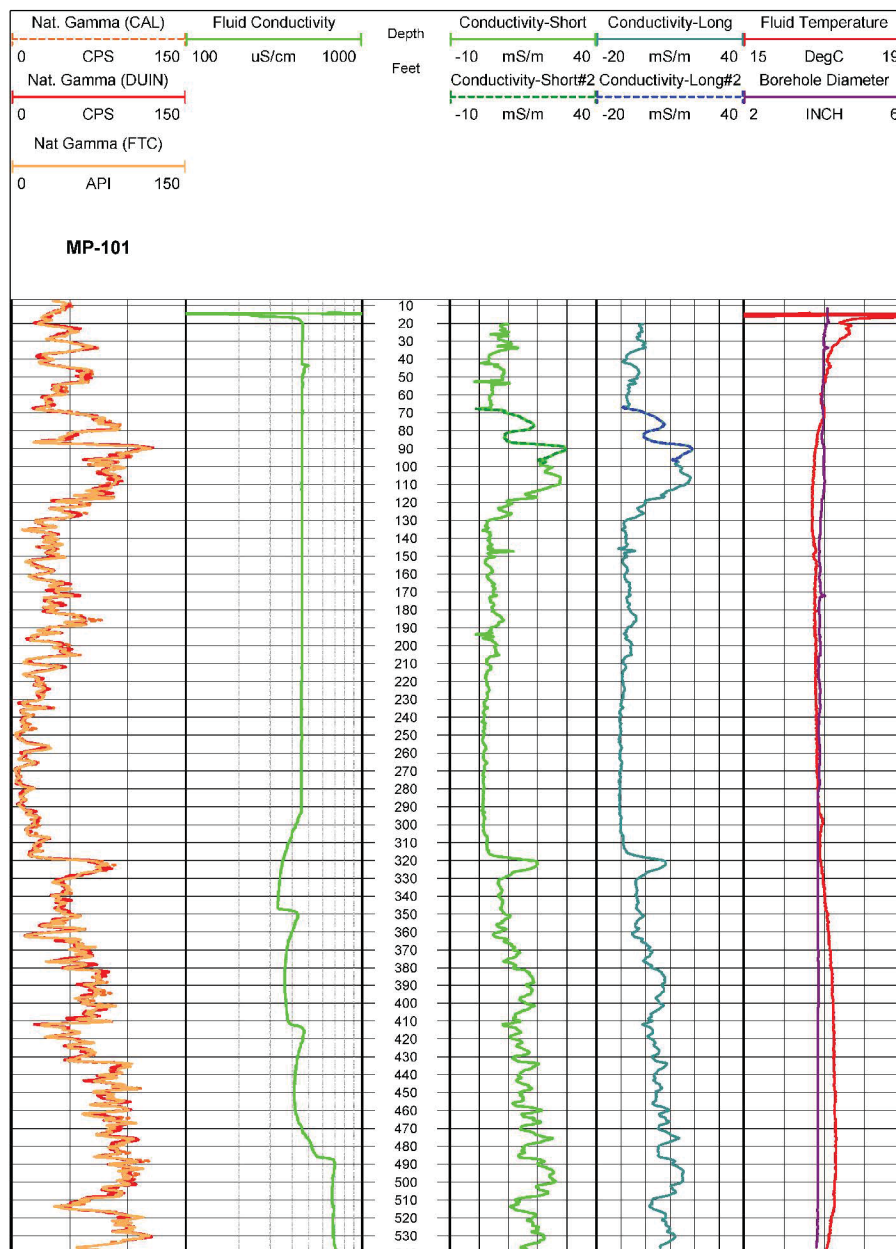


Figure 6. Boring MP-101, Induction, Fluid Temperature/Conductivity, Natural Gamma and Caliper logs

Table 6. Boring MP-101, Acoustic Televiwer Feature depth, dip azimuth, dip and description

Depth (feet)	Dip azimuth	Dip	Structure description
18.1	N154	38	Primary-structure Planar Bedding
18.3	N149	34	Primary-structure Planar Bedding
19.0	N156	37	Fracture Planar Open-fracture
19.1	N335	74	Fracture Discontinuous Hairline-fracture
19.3	N153	34	Fracture Planar Open-fracture
19.6	N159	35	Primary-structure Planar Bedding
20.4	N152	33	Primary-structure Planar Bedding
20.8	N163	35	Primary-structure Planar Bedding
22.5	N142	31	Primary-structure Planar Bedding
22.8	N165	45	Primary-structure Planar Bedding
23.2	N330	45	Fracture Discontinuous Hairline-fracture
23.4	N161	32	Primary-structure Planar Bedding
23.5	N157	30	Primary-structure Planar Bedding
24.1	N154	36	Primary-structure Planar Bedding
24.2	N347	27	Fracture Discontinuous Hairline-fracture
24.8	N149	41	Primary-structure Planar Bedding
25.6	N159	32	Primary-structure Planar Bedding
26.1	N162	34	Primary-structure Planar Bedding
26.7	N175	35	Fracture Planar Open-fracture
26.9	N152	31	Primary-structure Planar Bedding
27.3	N154	31	Primary-structure Planar Bedding
28.8	N153	31	Primary-structure Planar Bedding
30.1	N163	31	Primary-structure Planar Bedding
30.5	N331	57	Fracture Discontinuous Hairline-fracture
31.2	N161	32	Primary-structure Planar Bedding
31.9	N160	35	Primary-structure Planar Bedding
32.6	N157	35	Primary-structure Planar Bedding
33.4	N160	36	Fracture Planar Open-fracture
33.5	N160	31	Primary-structure Planar Bedding
34.3	N155	34	Primary-structure Planar Bedding
34.9	N160	30	Primary-structure Planar Bedding
36.0	N164	34	Primary-structure Planar Bedding
36.8	N162	39	Primary-structure Planar Bedding
38.3	N151	40	Primary-structure Planar Bedding
41.8	N156	37	Primary-structure Planar Bedding
42.9	N334	48	Fracture Planar Open-fracture
44.1	N160	31	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
45.5	N152	33	Primary-structure Planar Bedding
46.5	N148	33	Primary-structure Planar Bedding
47.1	N336	62	Fracture Discontinuous Hairline-fracture
47.3	N155	37	Primary-structure Planar Bedding
48.2	N159	34	Primary-structure Planar Bedding
48.8	N162	35	Primary-structure Planar Bedding
50.2	N161	34	Primary-structure Planar Bedding
51.0	N160	37	Primary-structure Planar Bedding
51.5	N165	35	Primary-structure Planar Bedding
52.6	N158	34	Primary-structure Planar Bedding
53.1	N168	38	Fracture Planar Open-fracture
53.4	N160	30	Primary-structure Planar Bedding
53.9	N152	32	Primary-structure Planar Bedding
55.7	N158	29	Primary-structure Planar Bedding
57.5	N159	34	Primary-structure Planar Bedding
58.3	N152	33	Primary-structure Planar Bedding
65.2	N158	31	Primary-structure Irregular Bedding
66.7	N159	33	Primary-structure Planar Bedding
68.4	N332	41	Fracture Planar Open-fracture
78.5	N158	36	Primary-structure Planar Bedding
79.9	N151	31	Primary-structure Planar Bedding
82.4	N330	59	Fracture Planar Hairline-fracture
84.9	N158	33	Primary-structure Planar Bedding
86.5	N151	37	Primary-structure Planar Bedding
87.5	N333	44	Fracture Discontinuous Open-fracture
88.1	N148	34	Primary-structure Planar Bedding
88.3	N153	36	Fracture Planar Hairline-fracture
88.7	N150	33	Primary-structure Planar Bedding
93.5	N160	36	Primary-structure Planar Bedding
94.6	N150	30	Primary-structure Planar Bedding
95.7	N165	34	Primary-structure Planar Bedding
96.3	N328	45	Fracture Discontinuous Hairline-fracture
96.6	N159	32	Primary-structure Planar Bedding
98.0	N145	32	Primary-structure Planar Bedding
99.2	N335	63	Fracture Planar Hairline-fracture
100.0	N152	32	Primary-structure Planar Bedding
100.8	N152	32	Primary-structure Planar Bedding
102.0	N147	33	Primary-structure Planar Bedding
102.4	N152	31	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
103.9	N147	33	Primary-structure Planar Bedding
104.6	N151	31	Primary-structure Planar Bedding
107.0	N150	32	Primary-structure Planar Bedding
107.7	N166	35	Primary-structure Planar Bedding
109.7	N143	32	Primary-structure Planar Bedding
110.9	N151	30	Primary-structure Planar Bedding
112.7	N143	30	Primary-structure Planar Bedding
113.5	N150	32	Primary-structure Planar Bedding
114.1	N150	32	Primary-structure Planar Bedding
114.8	N157	35	Primary-structure Planar Bedding
115.7	N341	65	Fracture Irregular Hairline-fracture
116.0	N342	59	Fracture Discontinuous Hairline-fracture
117.4	N154	31	Primary-structure Planar Bedding
122.7	N153	38	Primary-structure Planar Bedding
127.1	N150	33	Primary-structure Planar Bedding
128.6	N156	32	Primary-structure Planar Bedding
129.2	N351	54	Fracture Planar Hairline-fracture
134.0	N146	33	Primary-structure Planar Bedding
134.0	N333	55	Fracture Discontinuous Hairline-fracture
134.7	N326	59	Fracture Irregular Hairline-fracture
135.2	N155	39	Primary-structure Planar Bedding
136.8	N153	35	Primary-structure Planar Bedding
138.4	N343	49	Fracture Discontinuous Hairline-fracture
139.0	N149	35	Primary-structure Planar Bedding
140.1	N146	32	Primary-structure Planar Bedding
140.6	N153	33	Primary-structure Planar Bedding
141.7	N162	38	Primary-structure Planar Bedding
144.0	N157	38	Primary-structure Planar Bedding
144.5	N154	39	Primary-structure Planar Bedding
145.4	N149	29	Primary-structure Planar Bedding
146.2	N156	32	Primary-structure Planar Bedding
147.5	N156	35	Fracture Planar Open-fracture
147.8	N161	32	Primary-structure Planar Bedding
148.2	N153	34	Primary-structure Planar Bedding
150.4	N153	34	Primary-structure Planar Bedding
151.4	N154	32	Primary-structure Planar Bedding
152.2	N168	38	Primary-structure Planar Bedding
152.6	N324	62	Fracture Discontinuous Hairline-fracture
153.0	N156	35	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
154.3	N146	33	Primary-structure Planar Bedding
154.7	N146	35	Primary-structure Planar Bedding
156.2	N155	35	Primary-structure Planar Bedding
160.2	N153	32	Primary-structure Planar Bedding
161.7	N151	35	Primary-structure Planar Bedding
163.2	N159	36	Primary-structure Planar Bedding
165.0	N156	28	Primary-structure Planar Bedding
166.6	N145	33	Primary-structure Planar Bedding
168.7	N164	42	Primary-structure Irregular Bedding
171.4	N154	26	Primary-structure Planar Bedding
172.3	N154	34	Primary-structure Planar Bedding
173.0	N158	35	Primary-structure Planar Bedding
174.1	N149	32	Primary-structure Planar Bedding
175.7	N156	30	Primary-structure Planar Bedding
176.3	N330	64	Fracture Irregular Hairline-fracture
176.5	N153	33	Primary-structure Planar Bedding
177.7	N150	32	Primary-structure Planar Bedding
179.1	N154	30	Primary-structure Planar Bedding
179.7	N331	67	Fracture Discontinuous Hairline-fracture
179.8	N155	29	Primary-structure Planar Bedding
180.2	N320	52	Fracture Discontinuous Hairline-fracture
180.5	N162	28	Primary-structure Planar Bedding
181.2	N162	33	Primary-structure Planar Bedding
181.3	N330	67	Fracture Discontinuous Hairline-fracture
182.2	N165	31	Primary-structure Planar Bedding
183.5	N151	37	Primary-structure Planar Bedding
185.0	N145	30	Primary-structure Planar Bedding
186.1	N150	27	Primary-structure Planar Bedding
187.9	N175	22	Primary-structure Planar Bedding
189.1	N151	31	Primary-structure Planar Bedding
189.5	N161	27	Primary-structure Planar Bedding
190.0	N155	34	Primary-structure Planar Bedding
190.9	N155	29	Primary-structure Planar Bedding
191.6	N332	57	Fracture Discontinuous Hairline-fracture
191.7	N149	31	Primary-structure Planar Bedding
192.5	N154	30	Primary-structure Planar Bedding
193.1	N174	25	Primary-structure Planar Bedding
193.6	N149	26	Fracture Irregular Open-fracture
193.8	N170	31	Primary-structure Irregular Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
194.4	N109	36	Fracture Planar Open-fracture
194.8	N197	27	Fracture Irregular Open-fracture
196.6	N148	47	Fracture Irregular Open-fracture
197.9	N122	27	Fracture Planar Hairline-fracture
198.1	N198	33	Fracture Planar Hairline-fracture
198.6	N117	30	Fracture Planar Hairline-fracture
202.6	N149	33	Primary-structure Planar Bedding
205.5	N158	27	Fracture Planar Open-fracture
206.3	N154	32	Primary-structure Planar Bedding
206.9	N151	33	Primary-structure Planar Bedding
207.0	N331	80	Fracture Planar Hairline-fracture
207.8	N153	30	Primary-structure Planar Bedding
208.7	N146	29	Primary-structure Planar Bedding
209.5	N145	31	Primary-structure Planar Bedding
215.2	N157	37	Primary-structure Planar Bedding
215.9	N132	29	Primary-structure Planar Bedding
216.9	N118	27	Primary-structure Planar Bedding
217.3	N164	39	Primary-structure Irregular Bedding
217.6	N141	38	Primary-structure Irregular Bedding
218.9	N153	31	Primary-structure Planar Bedding
219.1	N332	66	Fracture Discontinuous Hairline-fracture
219.8	N158	31	Primary-structure Planar Bedding
221.9	N348	55	Fracture Discontinuous Hairline-fracture
230.1	N338	62	Fracture Discontinuous Hairline-fracture
231.1	N156	34	Primary-structure Planar Bedding
232.1	N147	32	Primary-structure Planar Bedding
233.4	N149	31	Primary-structure Planar Bedding
235.7	N151	31	Primary-structure Planar Bedding
235.8	N336	73	Fracture Discontinuous Hairline-fracture
236.8	N141	34	Primary-structure Planar Bedding
237.4	N145	29	Primary-structure Planar Bedding
238.2	N144	30	Primary-structure Planar Bedding
238.3	N331	51	Fracture Discontinuous Hairline-fracture
238.6	N152	31	Primary-structure Planar Bedding
239.7	N149	31	Primary-structure Planar Bedding
240.3	N144	30	Primary-structure Planar Bedding
241.5	N142	37	Primary-structure Planar Bedding
242.4	N158	32	Primary-structure Planar Bedding
242.6	N280	76	Fracture Discontinuous Hairline-fracture

Depth (feet)	Dip azimuth	Dip	Structure description
243.4	N154	30	Fracture Planar Open-fracture
244.1	N153	29	Primary-structure Planar Bedding
244.7	N160	32	Primary-structure Planar Bedding
246.4	N154	36	Primary-structure Planar Bedding
247.2	N159	63	Fracture Planar Hairline-fracture
248.1	N150	37	Primary-structure Planar Bedding
248.3	N141	78	Fracture Planar Hairline-fracture
248.6	N157	41	Fracture Planar Hairline-fracture
248.9	N336	44	Fracture Irregular Open-fracture
249.5	N154	33	Primary-structure Planar Bedding
250.4	N337	75	Fracture Irregular Hairline-fracture
251.3	N156	48	Fracture Planar Hairline-fracture
258.2	N162	41	Primary-structure Planar Bedding
258.9	N163	39	Primary-structure Planar Bedding
259.1	N338	55	Fracture Discontinuous Hairline-fracture
259.7	N346	48	Fracture Discontinuous Hairline-fracture
260.4	N341	59	Fracture Discontinuous Hairline-fracture
261.3	N351	66	Fracture Discontinuous Hairline-fracture
262.4	N160	36	Primary-structure Planar Bedding
264.6	N151	30	Primary-structure Planar Bedding
265.7	N002	57	Fracture Discontinuous Hairline-fracture
266.8	N152	32	Primary-structure Planar Bedding
267.8	N157	30	Primary-structure Planar Bedding
268.6	N151	29	Primary-structure Planar Bedding
269.1	N154	31	Primary-structure Planar Bedding
270.0	N173	35	Primary-structure Planar Bedding
271.1	N164	43	Primary-structure Planar Bedding
272.5	N156	40	Primary-structure Planar Bedding
273.4	N156	27	Primary-structure Planar Bedding
275.0	N152	36	Primary-structure Planar Bedding
276.0	N164	35	Primary-structure Planar Bedding
277.1	N169	64	Fracture Irregular Hairline-fracture
280.2	N174	58	Fracture Discontinuous Hairline-fracture
280.9	N147	66	Fracture Discontinuous Hairline-fracture
284.1	N159	30	Primary-structure Planar Bedding
284.7	N339	54	Fracture Irregular Hairline-fracture
285.9	N154	36	Primary-structure Planar Bedding
287.3	N151	35	Primary-structure Planar Bedding
287.7	N151	64	Fracture Discontinuous Hairline-fracture

Depth (feet)	Dip azimuth	Dip	Structure description
288.0	N153	37	Primary-structure Planar Bedding
288.6	N331	67	Fracture Discontinuous Hairline-fracture
288.8	N160	33	Primary-structure Planar Bedding
289.6	N160	29	Primary-structure Planar Bedding
289.8	N170	39	Primary-structure Planar Bedding
291.0	N146	31	Primary-structure Planar Bedding
292.0	N154	33	Primary-structure Planar Bedding
293.2	N152	32	Fracture Planar Hairline-fracture
294.1	N150	33	Primary-structure Planar Bedding
295.6	N159	34	Primary-structure Planar Bedding
303.7	N160	31	Primary-structure Planar Bedding
309.9	N148	33	Primary-structure Planar Bedding
310.8	N123	30	Primary-structure Planar Bedding
311.0	N148	33	Primary-structure Planar Bedding
311.6	N163	32	Primary-structure Planar Bedding
312.6	N149	35	Primary-structure Planar Bedding
313.7	N154	32	Primary-structure Planar Bedding
314.7	N155	28	Primary-structure Planar Bedding
316.2	N174	36	Primary-structure Planar Bedding
316.5	N151	29	Primary-structure Planar Bedding
317.0	N152	31	Primary-structure Planar Bedding
317.1	N324	72	Fracture Discontinuous Hairline-fracture
317.5	N155	31	Primary-structure Planar Bedding
318.1	N147	33	Primary-structure Planar Bedding
319.4	N162	28	Primary-structure Planar Bedding
331.1	N152	40	Primary-structure Planar Bedding
347.6	N336	49	Fracture Planar Hairline-fracture
353.5	N155	35	Primary-structure Planar Bedding
364.3	N165	27	Primary-structure Irregular Bedding
365.8	N149	23	Primary-structure Irregular Bedding
368.7	N173	33	Primary-structure Planar Bedding
370.6	N167	34	Primary-structure Irregular Bedding
373.0	N165	29	Primary-structure Irregular Bedding
376.9	N326	51	Fracture Planar Hairline-fracture
384.3	N144	30	Primary-structure Irregular Bedding
387.9	N162	26	Primary-structure Irregular Bedding
390.5	N167	39	Primary-structure Irregular Bedding
392.4	N171	23	Primary-structure Irregular Bedding
397.5	N152	30	Primary-structure Irregular Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
403.6	N152	38	Primary-structure Planar Bedding
410.8	N144	33	Primary-structure Planar Bedding
411.8	N322	55	Fracture Planar Hairline-fracture
412.7	N161	29	Primary-structure Planar Bedding
418.1	N168	34	Primary-structure Planar Bedding
418.6	N335	63	Fracture Discontinuous Hairline-fracture
428.2	N160	32	Primary-structure Planar Bedding
456.2	N145	38	Primary-structure Planar Bedding
463.7	N332	64	Fracture Planar Hairline-fracture
474.8	N155	31	Primary-structure Planar Bedding
475.5	N147	31	Primary-structure Planar Bedding
479.5	N156	32	Primary-structure Planar Bedding
486.6	N329	61	Fracture Discontinuous Hairline-fracture
489.5	N154	32	Primary-structure Planar Bedding
509.7	N330	57	Fracture Discontinuous Hairline-fracture
510.0	N343	68	Fracture Planar Hairline-fracture
511.2	N326	61	Fracture Planar Hairline-fracture
511.9	N151	32	Primary-structure Planar Bedding
513.5	N150	26	Primary-structure Planar Bedding
514.0	N144	32	Primary-structure Planar Bedding
515.2	N147	38	Primary-structure Planar Bedding
515.5	N335	56	Fracture Planar Hairline-fracture
518.0	N150	30	Primary-structure Planar Bedding
527.7	N331	61	Fracture Planar Hairline-fracture
535.6	N141	29	Primary-structure Planar Bedding
536.4	N314	56	Fracture Discontinuous Hairline-fracture
536.9	N159	29	Primary-structure Planar Bedding
537.1	N151	28	Primary-structure Planar Bedding

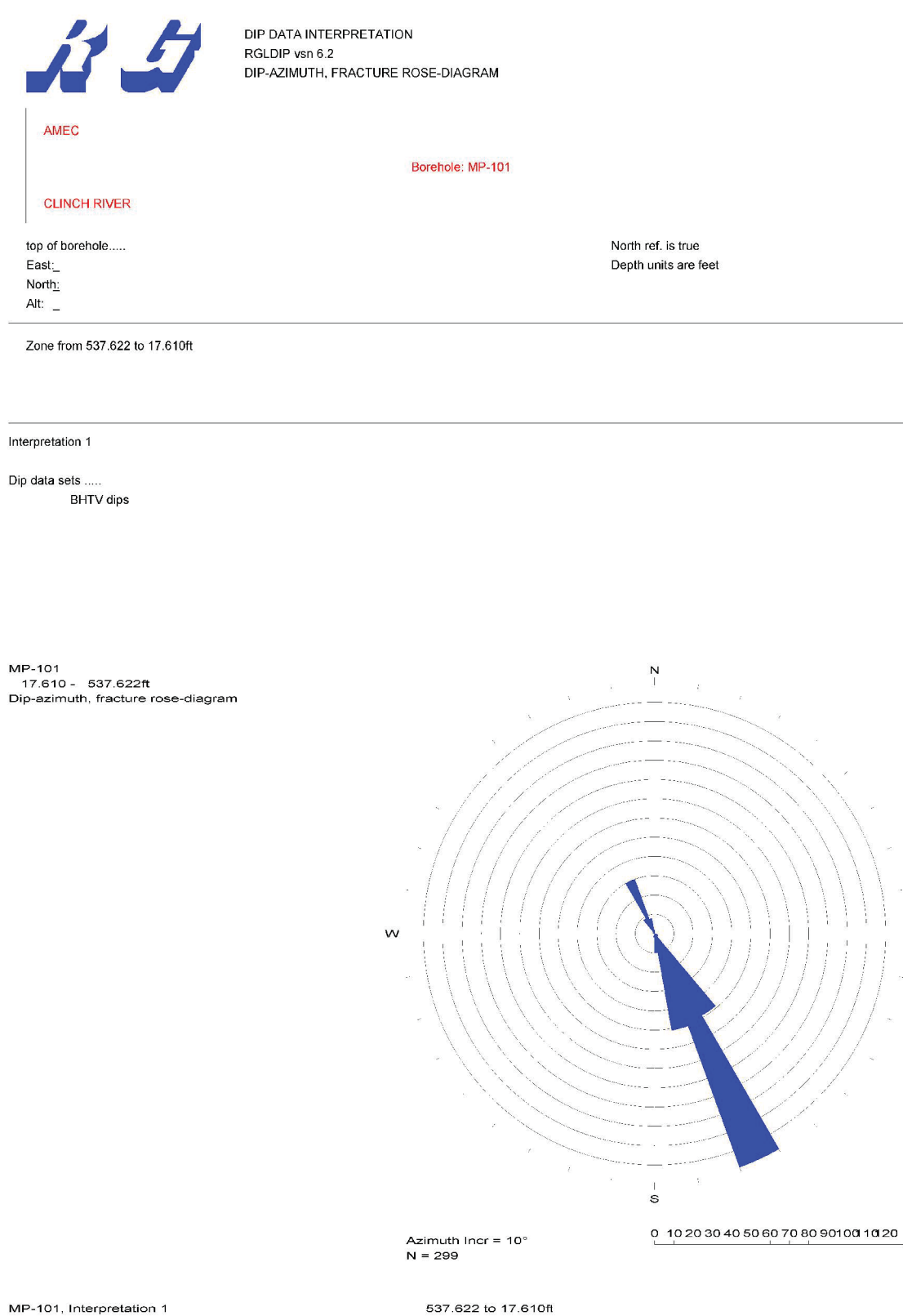


Figure 7. Boring MP-101, Rose Diagram

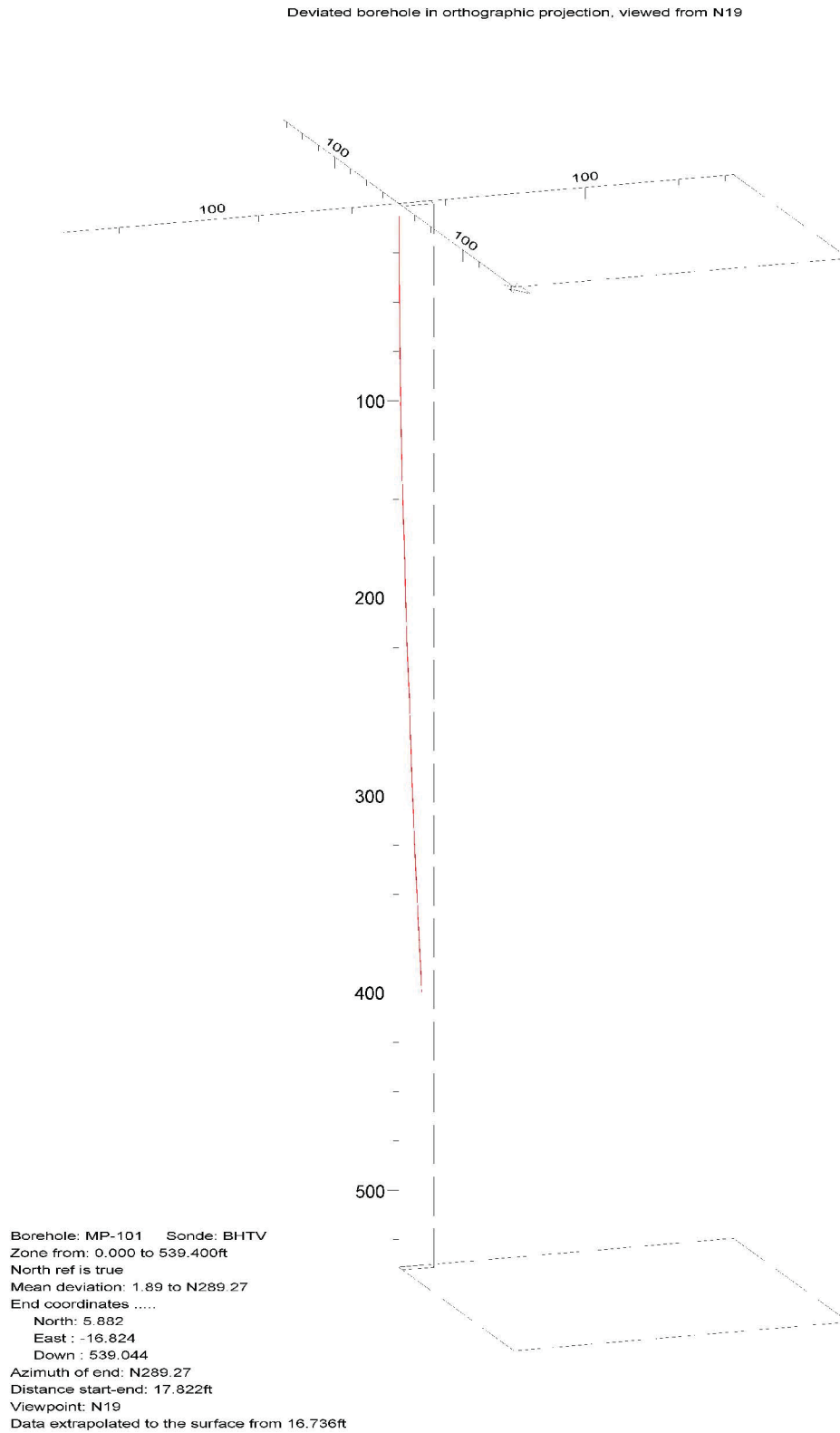


Figure 8. Boring MP-101, Up Deviation Projection

CLINCH RIVER SMR PROJECT BOREHOLE MP-102 Receiver to Receiver V_s and V_p Analysis

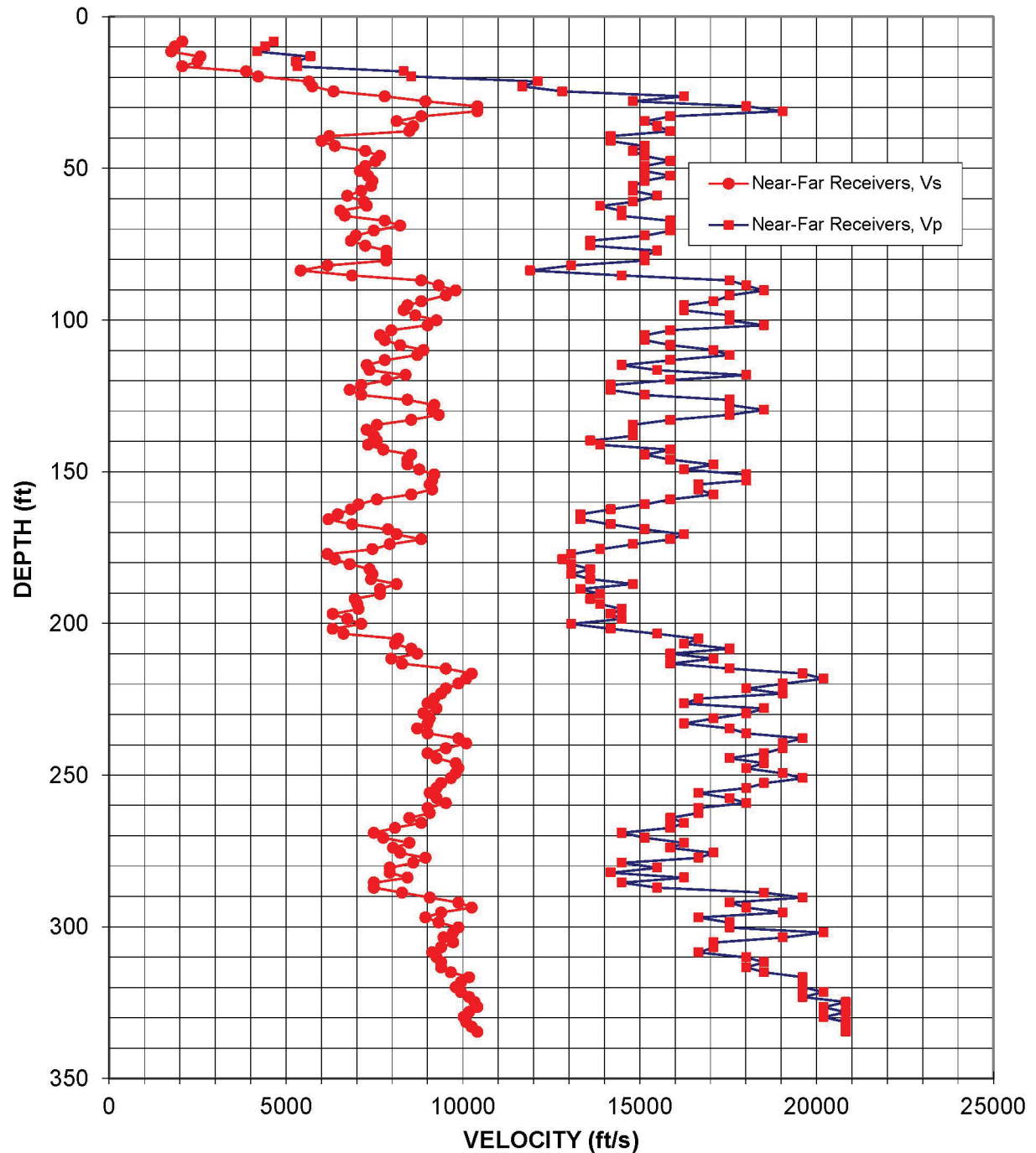


Figure 9: Boring MP-102, Suspension R1-R2 P- and S_H -wave velocities

Table 7. Boring MP-102, Suspension R1-R2 depths and P- and S_H-wave velocities

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-102**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
8.2	2070	4660	0.38	2.5	630	1420	0.38
9.8	1860	4420	0.39	3.0	570	1350	0.39
11.5	1760	4190	0.39	3.5	540	1280	0.39
13.1	2580	5700	0.37	4.0	790	1740	0.37
14.8	2510	5290	0.36	4.5	760	1610	0.36
16.4	2070	5330	0.41	5.0	630	1630	0.41
18.0	3880	8330	0.36	5.5	1180	2540	0.36
19.7	4220	8550	0.34	6.0	1290	2610	0.34
21.3	5650	12120	0.36	6.5	1720	3690	0.36
23.0	5750	11700	0.34	7.0	1750	3560	0.34
24.6	6350	12820	0.34	7.5	1940	3910	0.34
26.3	7800	16260	0.35	8.0	2380	4960	0.35
27.9	8950	14810	0.21	8.5	2730	4520	0.21
29.5	10420	18020	0.25	9.0	3180	5490	0.25
31.2	10420	19050	0.29	9.5	3180	5810	0.29
32.8	8830	15870	0.28	10.0	2690	4840	0.28
34.5	8130	15150	0.30	10.5	2480	4620	0.30
36.1	8600	15500	0.28	11.0	2620	4730	0.28
37.7	8490	15870	0.30	11.5	2590	4840	0.30
39.4	6230	14180	0.38	12.0	1900	4320	0.38
41.0	6010	14180	0.39	12.5	1830	4320	0.39
42.7	6380	15150	0.39	13.0	1940	4620	0.39
44.3	7250	14810	0.34	13.5	2210	4520	0.34
45.9	7660	15150	0.33	14.0	2340	4620	0.33
47.6	7530	15870	0.35	14.5	2300	4840	0.35
49.2	7250	15150	0.35	15.0	2210	4620	0.35
50.9	7090	15150	0.36	15.5	2160	4620	0.36
52.5	7330	15870	0.36	16.0	2230	4840	0.36
54.1	7450	15150	0.34	16.5	2270	4620	0.34
55.8	7410	14810	0.33	17.0	2260	4520	0.33
57.4	7130	14810	0.35	17.5	2170	4520	0.35
59.1	6730	15500	0.38	18.0	2050	4730	0.38
61.0	7210	14810	0.34	18.6	2200	4520	0.34
62.3	7290	13890	0.31	19.0	2220	4230	0.31
64.0	6540	14490	0.37	19.5	1990	4420	0.37
65.6	6670	14490	0.37	20.0	2030	4420	0.37
67.3	7800	15870	0.34	20.5	2380	4840	0.34

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-102**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
68.9	8230	15870	0.32	21.0	2510	4840	0.32
70.5	7490	15870	0.36	21.5	2280	4840	0.36
72.2	6980	15150	0.37	22.0	2130	4620	0.37
73.8	6840	13610	0.33	22.5	2080	4150	0.33
75.5	7250	13610	0.30	23.0	2210	4150	0.30
77.1	7840	15500	0.33	23.5	2390	4730	0.33
78.7	7840	15150	0.32	24.0	2390	4620	0.32
80.4	7840	15150	0.32	24.5	2390	4620	0.32
82.0	6170	13070	0.36	25.0	1880	3980	0.36
83.7	5420	11900	0.37	25.5	1650	3630	0.37
85.3	6870	14490	0.35	26.0	2090	4420	0.35
86.9	8830	17540	0.33	26.5	2690	5350	0.33
88.6	9320	18020	0.32	27.0	2840	5490	0.32
90.2	9800	18520	0.31	27.5	2990	5640	0.31
91.9	9520	17540	0.29	28.0	2900	5350	0.29
93.8	8830	17090	0.32	28.6	2690	5210	0.32
95.1	8440	16260	0.32	29.0	2570	4960	0.32
96.8	8330	16260	0.32	29.5	2540	4960	0.32
98.4	8660	17540	0.34	30.0	2640	5350	0.34
100.1	9260	17540	0.31	30.5	2820	5350	0.31
101.7	9010	18520	0.34	31.0	2750	5640	0.34
103.4	7980	15870	0.33	31.5	2430	4840	0.33
105.0	7660	15150	0.33	32.0	2340	4620	0.33
106.6	7800	15150	0.32	32.5	2380	4620	0.32
108.3	8230	15870	0.32	33.0	2510	4840	0.32
109.9	8890	17090	0.31	33.5	2710	5210	0.31
111.6	8710	17540	0.34	34.0	2660	5350	0.34
113.2	7800	15870	0.34	34.5	2380	4840	0.34
114.8	7290	14490	0.33	35.0	2220	4420	0.33
116.5	7370	15500	0.35	35.5	2250	4730	0.35
118.1	8390	18020	0.36	36.0	2560	5490	0.36
119.8	7840	15870	0.34	36.5	2390	4840	0.34
121.4	7130	14180	0.33	37.0	2170	4320	0.33
123.0	6800	14180	0.35	37.5	2070	4320	0.35
124.7	7130	15150	0.36	38.0	2170	4620	0.36
126.3	8440	17540	0.35	38.5	2570	5350	0.35
128.0	9200	17540	0.31	39.0	2800	5350	0.31
129.6	9130	18520	0.34	39.5	2780	5640	0.34
131.2	9320	17540	0.30	40.0	2840	5350	0.30

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-102**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
132.9	8550	15870	0.30	40.5	2610	4840	0.30
134.5	7580	14810	0.32	41.0	2310	4520	0.32
136.2	7290	14810	0.34	41.5	2220	4520	0.34
138.1	7490	14810	0.33	42.1	2280	4520	0.33
139.8	7580	13610	0.28	42.6	2310	4150	0.28
141.1	7330	13890	0.31	43.0	2230	4230	0.31
142.7	7750	15870	0.34	43.5	2360	4840	0.34
144.4	8550	15150	0.27	44.0	2610	4620	0.27
146.0	8440	15870	0.30	44.5	2570	4840	0.30
147.6	8440	17090	0.34	45.0	2570	5210	0.34
149.3	8770	16260	0.29	45.5	2670	4960	0.29
150.9	9200	18020	0.32	46.0	2800	5490	0.32
152.9	9130	18020	0.33	46.6	2780	5490	0.33
154.2	9070	16670	0.29	47.0	2760	5080	0.29
155.8	9130	16670	0.29	47.5	2780	5080	0.29
157.5	8550	17090	0.33	48.0	2610	5210	0.33
159.1	7580	15870	0.35	48.5	2310	4840	0.35
160.8	7050	15150	0.36	49.0	2150	4620	0.36
162.4	6840	14180	0.35	49.5	2080	4320	0.35
164.0	6470	13330	0.35	50.0	1970	4060	0.35
165.7	6200	13330	0.36	50.5	1890	4060	0.36
167.3	6870	14180	0.35	51.0	2090	4320	0.35
169.0	7890	15150	0.31	51.5	2400	4620	0.31
170.6	8130	16260	0.33	52.0	2480	4960	0.33
172.2	8830	15870	0.28	52.5	2690	4840	0.28
173.9	7940	14810	0.30	53.0	2420	4520	0.30
175.5	7450	13890	0.30	53.5	2270	4230	0.30
177.2	6170	13070	0.36	54.0	1880	3980	0.36
178.8	6380	12820	0.34	54.5	1940	3910	0.34
180.5	6800	13070	0.31	55.0	2070	3980	0.31
182.1	7370	13610	0.29	55.5	2250	4150	0.29
183.7	7450	13070	0.26	56.0	2270	3980	0.26
185.4	7410	13610	0.29	56.5	2260	4150	0.29
187.0	8130	14810	0.28	57.0	2480	4520	0.28
188.7	7660	13330	0.25	57.5	2340	4060	0.25
190.3	7660	13890	0.28	58.0	2340	4230	0.28
191.9	6940	13610	0.32	58.5	2120	4150	0.32
193.6	7020	13890	0.33	59.0	2140	4230	0.33
195.2	7050	14490	0.34	59.5	2150	4420	0.34

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-102**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
196.9	6320	14180	0.38	60.0	1930	4320	0.38
198.5	6730	14490	0.36	60.5	2050	4420	0.36
200.1	7130	13070	0.29	61.0	2170	3980	0.29
201.8	6320	14180	0.38	61.5	1930	4320	0.38
203.4	6630	15500	0.39	62.0	2020	4730	0.39
205.1	8180	16670	0.34	62.5	2490	5080	0.34
206.7	8080	16260	0.34	63.0	2460	4960	0.34
208.3	8550	17540	0.34	63.5	2610	5350	0.34
210.0	8710	15870	0.28	64.0	2660	4840	0.28
211.6	7980	17090	0.36	64.5	2430	5210	0.36
213.3	8280	15870	0.31	65.0	2520	4840	0.31
214.9	9520	17540	0.29	65.5	2900	5350	0.29
216.5	10260	19610	0.31	66.0	3130	5980	0.31
218.2	10100	20200	0.33	66.5	3080	6160	0.33
219.8	9880	19050	0.32	67.0	3010	5810	0.32
221.5	9520	18020	0.31	67.5	2900	5490	0.31
223.1	9390	19050	0.34	68.0	2860	5810	0.34
224.7	9200	16670	0.28	68.5	2800	5080	0.28
226.4	9010	16260	0.28	69.0	2750	4960	0.28
228.0	9260	18520	0.33	69.5	2820	5640	0.33
229.7	8890	18020	0.34	70.0	2710	5490	0.34
231.3	9070	17090	0.30	70.5	2760	5210	0.30
232.9	9010	16260	0.28	71.0	2750	4960	0.28
234.6	8710	17540	0.34	71.5	2660	5350	0.34
236.2	9010	18020	0.33	72.0	2750	5490	0.33
237.9	9880	19610	0.33	72.5	3010	5980	0.33
239.5	10100	19050	0.30	73.0	3080	5810	0.30
241.1	9520	19050	0.33	73.5	2900	5810	0.33
242.8	9010	18520	0.34	74.0	2750	5640	0.34
244.4	9260	17540	0.31	74.5	2820	5350	0.31
246.1	9800	18520	0.31	75.0	2990	5640	0.31
247.7	9880	18020	0.29	75.5	3010	5490	0.29
249.3	9800	19050	0.32	76.0	2990	5810	0.32
251.0	9660	19610	0.34	76.5	2940	5980	0.34
252.6	9390	18520	0.33	77.0	2860	5640	0.33
254.3	9260	18020	0.32	77.5	2820	5490	0.32
255.9	9070	16670	0.29	78.0	2760	5080	0.29
257.6	9260	17540	0.31	78.5	2820	5350	0.31
259.2	9520	18020	0.31	79.0	2900	5490	0.31

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-102**

American Units				Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio	Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p			V _s	V _p	
(ft)	(ft/s)	(ft/s)		(m)	(m/s)	(m/s)	
260.8	9010	16670	0.29	79.5	2750	5080	0.29
262.5	9070	16670	0.29	80.0	2760	5080	0.29
264.1	8490	15870	0.30	80.5	2590	4840	0.30
265.8	8830	16260	0.29	81.0	2690	4960	0.29
267.4	8080	15870	0.33	81.5	2460	4840	0.33
269.0	7490	14490	0.32	82.0	2280	4420	0.32
270.7	7750	15150	0.32	82.5	2360	4620	0.32
272.3	8490	16260	0.31	83.0	2590	4960	0.31
274.0	8030	15870	0.33	83.5	2450	4840	0.33
275.6	8230	17090	0.35	84.0	2510	5210	0.35
277.2	8950	16670	0.30	84.5	2730	5080	0.30
278.9	8600	14490	0.23	85.0	2620	4420	0.23
280.5	7940	15500	0.32	85.5	2420	4730	0.32
282.2	7940	14180	0.27	86.0	2420	4320	0.27
283.8	8440	16260	0.32	86.5	2570	4960	0.32
285.4	7490	14490	0.32	87.0	2280	4420	0.32
287.1	7490	15500	0.35	87.5	2280	4730	0.35
288.7	8280	18520	0.38	88.0	2520	5640	0.38
290.4	9070	19610	0.36	88.5	2760	5980	0.36
292.0	9880	17540	0.27	89.0	3010	5350	0.27
293.6	10260	18020	0.26	89.5	3130	5490	0.26
295.3	9390	19050	0.34	90.0	2860	5810	0.34
296.9	8950	16670	0.30	90.5	2730	5080	0.30
298.6	9320	17540	0.30	91.0	2840	5350	0.30
300.2	9880	17540	0.27	91.5	3010	5350	0.27
301.8	9730	20200	0.35	92.0	2970	6160	0.35
303.5	9460	19050	0.34	92.5	2880	5810	0.34
305.1	9730	17090	0.26	93.0	2970	5210	0.26
306.8	9390	17090	0.28	93.5	2860	5210	0.28
308.4	9130	16670	0.29	94.0	2780	5080	0.29
310.0	9260	18020	0.32	94.5	2820	5490	0.32
311.7	9390	18520	0.33	95.0	2860	5640	0.33
313.3	9390	18020	0.31	95.5	2860	5490	0.31
315.0	9660	18520	0.31	96.0	2940	5640	0.31
316.6	10180	19610	0.32	96.5	3100	5980	0.32
318.2	9950	19610	0.33	97.0	3030	5980	0.33
319.9	9800	19610	0.33	97.5	2990	5980	0.33
321.5	9950	20200	0.34	98.0	3030	6160	0.34
323.2	10180	19610	0.32	98.5	3100	5980	0.32

**Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio
Based on Receiver-to-Receiver Travel Time Data - Borehole MP-102**

American Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p	
(ft)	(ft/s)	(ft/s)	
324.8	10340	20830	0.34
326.4	10420	20200	0.32
328.1	10180	20830	0.34
329.7	10030	20200	0.34
331.4	10100	20830	0.35
333.0	10260	20830	0.34
334.7	10420	20830	0.33

Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V _s	V _p	
(m)	(m/s)	(m/s)	
99.0	3150	6350	0.34
99.5	3180	6160	0.32
100.0	3100	6350	0.34
100.5	3060	6160	0.34
101.0	3080	6350	0.35
101.5	3130	6350	0.34
102.0	3180	6350	0.33

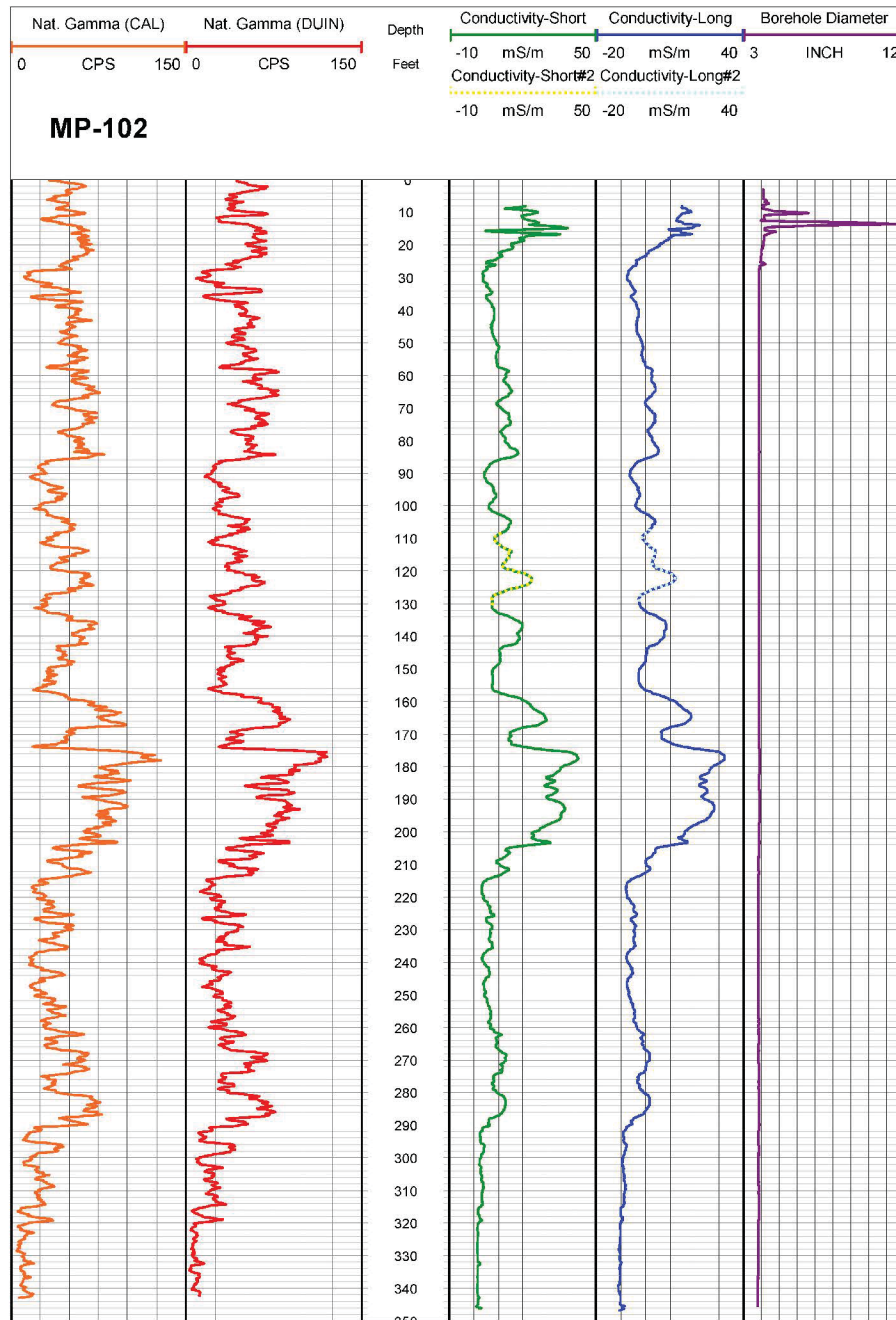


Figure 10. Boring MP-102, Induction, Natural Gamma and Caliper logs

Table 8. Boring MP-102, Acoustic Televiewer Feature depth, dip azimuth, dip and description

Depth (feet)	Dip azimuth	Dip	Structure description
6.2	N100	42	Fracture Planar Open-fracture
6.4	N105	37	Fracture Planar Open-fracture
6.9	N115	42	Fracture Planar Open-fracture
7.2	N120	42	Fracture Planar Open-fracture
7.9	N105	34	Fracture Planar Open-fracture
7.9	N309	56	Fracture Discontinuous Open-fracture
8.4	N131	33	Primary-structure Planar Bedding
9.0	N130	32	Fracture Planar Open-fracture
9.6	N113	42	Fracture Planar Open-fracture
10.3	N112	42	Fracture Planar Open-fracture
11.0	N154	24	Primary-structure Planar Bedding
12.0	N145	33	Primary-structure Planar Bedding
12.2	N160	36	Primary-structure Planar Bedding
12.5	N101	1	Fracture Planar Open-fracture
12.8	N341	77	Fracture Planar Open-fracture
14.3	N159	40	Primary-structure Planar Bedding
14.9	N156	29	Primary-structure Planar Bedding
15.5	N178	25	Fracture Planar Open-fracture
15.8	N112	66	Fracture Planar Open-fracture
16.1	N168	42	Fracture Planar Open-fracture
16.7	N136	34	Fracture Planar Open-fracture
17.0	N157	37	Primary-structure Planar Bedding
17.7	N149	36	Primary-structure Planar Bedding
18.2	N147	34	Primary-structure Planar Bedding
18.9	N151	35	Primary-structure Planar Bedding
19.3	N157	36	Primary-structure Planar Bedding
19.7	N342	57	Fracture Discontinuous Hairline-fracture
20.0	N156	36	Primary-structure Planar Bedding
20.5	N149	35	Fracture Planar Open-fracture
20.6	N152	37	Primary-structure Planar Bedding
21.2	N149	36	Primary-structure Planar Bedding
21.8	N153	35	Primary-structure Planar Bedding
22.7	N154	39	Fracture Planar Open-fracture
23.3	N145	35	Primary-structure Planar Bedding
24.5	N161	33	Primary-structure Planar Bedding
25.2	N158	33	Primary-structure Planar Bedding
25.6	N158	32	Fracture Planar Open-fracture

Depth (feet)	Dip azimuth	Dip	Structure description
25.9	N154	29	Fracture Planar Open-fracture
26.6	N326	68	Fracture Irregular Hairline-fracture
27.0	N329	56	Fracture Discontinuous Hairline-fracture
27.1	N332	43	Fracture Discontinuous Hairline-fracture
27.3	N150	29	Primary-structure Planar Bedding
28.2	N162	30	Primary-structure Planar Bedding
28.9	N147	33	Primary-structure Planar Bedding
29.1	N160	33	Primary-structure Planar Bedding
29.8	N152	32	Primary-structure Planar Bedding
30.3	N170	34	Primary-structure Planar Bedding
30.6	N152	31	Primary-structure Planar Bedding
30.8	N168	20	Primary-structure Planar Bedding
31.4	N155	24	Primary-structure Planar Bedding
31.9	N166	30	Primary-structure Planar Bedding
31.9	N334	73	Fracture Discontinuous Hairline-fracture
32.6	N330	56	Fracture Discontinuous Hairline-fracture
32.8	N153	31	Primary-structure Planar Bedding
34.6	N156	31	Primary-structure Planar Bedding
35.0	N343	52	Fracture Planar Hairline-fracture
35.3	N152	39	Primary-structure Planar Bedding
35.5	N154	36	Primary-structure Planar Bedding
35.6	N150	29	Primary-structure Planar Bedding
36.4	N165	48	Primary-structure Planar Bedding
36.8	N154	39	Primary-structure Planar Bedding
37.1	N326	60	Fracture Planar Hairline-fracture
37.9	N158	27	Primary-structure Planar Bedding
38.9	N152	29	Primary-structure Planar Bedding
40.3	N156	29	Primary-structure Planar Bedding
41.1	N151	34	Primary-structure Planar Bedding
41.8	N336	69	Fracture Discontinuous Hairline-fracture
42.8	N153	30	Primary-structure Planar Bedding
43.4	N159	32	Primary-structure Planar Bedding
44.5	N156	32	Primary-structure Planar Bedding
45.4	N157	33	Primary-structure Planar Bedding
46.1	N162	30	Primary-structure Planar Bedding
46.8	N150	37	Primary-structure Planar Bedding
47.8	N160	30	Primary-structure Planar Bedding
48.2	N166	33	Primary-structure Planar Bedding
48.9	N155	30	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
50.0	N158	27	Primary-structure Planar Bedding
50.5	N347	61	Fracture Discontinuous Hairline-fracture
50.9	N154	32	Primary-structure Planar Bedding
51.3	N153	27	Primary-structure Planar Bedding
51.9	N152	32	Primary-structure Planar Bedding
52.6	N165	31	Primary-structure Planar Bedding
53.5	N163	26	Primary-structure Planar Bedding
53.9	N340	68	Fracture Discontinuous Hairline-fracture
55.1	N162	30	Primary-structure Planar Bedding
56.4	N158	29	Primary-structure Planar Bedding
56.8	N324	50	Fracture Planar Hairline-fracture
56.9	N324	66	Fracture Discontinuous Hairline-fracture
57.3	N164	29	Primary-structure Planar Bedding
58.4	N157	29	Primary-structure Planar Bedding
60.2	N157	31	Primary-structure Planar Bedding
61.7	N340	67	Fracture Discontinuous Hairline-fracture
62.7	N154	28	Primary-structure Planar Bedding
63.3	N156	28	Primary-structure Planar Bedding
64.2	N152	28	Primary-structure Planar Bedding
66.0	N147	31	Primary-structure Planar Bedding
67.2	N160	25	Primary-structure Planar Bedding
68.5	N328	58	Fracture Discontinuous Hairline-fracture
68.8	N151	27	Primary-structure Planar Bedding
69.7	N153	28	Primary-structure Planar Bedding
71.5	N162	30	Primary-structure Planar Bedding
72.9	N159	36	Primary-structure Planar Bedding
74.4	N154	27	Primary-structure Planar Bedding
75.8	N152	29	Primary-structure Planar Bedding
76.4	N319	58	Fracture Discontinuous Hairline-fracture
76.8	N155	30	Primary-structure Planar Bedding
77.1	N308	60	Fracture Discontinuous Hairline-fracture
78.6	N155	30	Primary-structure Planar Bedding
80.3	N151	29	Primary-structure Planar Bedding
81.8	N152	30	Primary-structure Planar Bedding
83.1	N155	28	Primary-structure Planar Bedding
84.2	N157	26	Primary-structure Planar Bedding
85.1	N141	31	Primary-structure Planar Bedding
87.1	N156	28	Primary-structure Planar Bedding
89.9	N163	32	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
92.0	N141	31	Primary-structure Planar Bedding
94.3	N156	29	Primary-structure Planar Bedding
95.7	N147	31	Primary-structure Planar Bedding
96.5	N154	26	Primary-structure Planar Bedding
98.4	N148	26	Primary-structure Planar Bedding
99.2	N143	28	Primary-structure Planar Bedding
99.5	N325	52	Fracture Planar Hairline-fracture
100.7	N150	29	Primary-structure Planar Bedding
102.5	N158	33	Primary-structure Planar Bedding
103.6	N152	28	Primary-structure Planar Bedding
104.5	N146	33	Primary-structure Planar Bedding
105.5	N154	33	Primary-structure Planar Bedding
106.1	N141	29	Primary-structure Planar Bedding
106.7	N155	30	Primary-structure Planar Bedding
107.1	N156	28	Primary-structure Planar Bedding
108.0	N147	33	Primary-structure Planar Bedding
110.1	N149	31	Primary-structure Planar Bedding
114.2	N145	30	Primary-structure Planar Bedding
115.4	N152	35	Primary-structure Planar Bedding
117.1	N147	34	Primary-structure Planar Bedding
120.8	N141	28	Primary-structure Planar Bedding
122.6	N154	27	Primary-structure Planar Bedding
123.3	N155	31	Primary-structure Planar Bedding
125.1	N151	34	Primary-structure Planar Bedding
135.5	N159	30	Primary-structure Planar Bedding
142.0	N165	29	Primary-structure Planar Bedding
142.5	N323	70	Fracture Discontinuous Hairline-fracture
146.6	N152	33	Primary-structure Planar Bedding
155.0	N322	53	Fracture Planar Hairline-fracture
157.8	N161	30	Primary-structure Planar Bedding
158.6	N153	30	Primary-structure Planar Bedding
159.6	N160	27	Primary-structure Planar Bedding
160.9	N153	29	Primary-structure Planar Bedding
161.9	N154	30	Primary-structure Planar Bedding
162.4	N160	31	Primary-structure Planar Bedding
163.8	N152	27	Primary-structure Planar Bedding
164.5	N166	25	Primary-structure Planar Bedding
164.8	N345	74	Fracture Discontinuous Hairline-fracture
166.7	N152	31	Primary-structure Planar Bedding

Depth (feet)	Dip azimuth	Dip	Structure description
169.6	N164	27	Primary-structure Planar Bedding
171.3	N154	25	Primary-structure Planar Bedding
173.1	N328	51	Fracture Planar Hairline-fracture
175.3	N156	28	Primary-structure Planar Bedding
184.1	N151	32	Primary-structure Planar Bedding
186.4	N149	29	Primary-structure Planar Bedding
187.5	N149	25	Primary-structure Planar Bedding
190.0	N155	29	Primary-structure Planar Bedding
190.6	N153	28	Primary-structure Planar Bedding
192.4	N141	33	Primary-structure Planar Bedding
194.8	N152	33	Primary-structure Planar Bedding
195.7	N150	30	Primary-structure Planar Bedding
196.7	N152	26	Primary-structure Planar Bedding
198.2	N143	29	Primary-structure Planar Bedding
199.5	N160	26	Primary-structure Planar Bedding
203.0	N153	31	Primary-structure Planar Bedding
203.3	N148	30	Primary-structure Planar Bedding
208.1	N159	33	Primary-structure Planar Bedding
211.3	N145	26	Primary-structure Planar Bedding
213.5	N150	26	Primary-structure Planar Bedding
219.5	N156	36	Primary-structure Planar Bedding
221.1	N141	32	Primary-structure Planar Bedding
224.2	N156	28	Primary-structure Planar Bedding
224.8	N162	31	Primary-structure Planar Bedding
225.2	N166	30	Primary-structure Planar Bedding
228.4	N159	31	Primary-structure Planar Bedding
230.5	N153	31	Primary-structure Planar Bedding
231.3	N161	32	Primary-structure Planar Bedding
232.8	N156	29	Primary-structure Planar Bedding
236.7	N161	28	Primary-structure Planar Bedding
238.4	N319	61	Fracture Irregular Hairline-fracture
246.8	N164	31	Primary-structure Planar Bedding
247.2	N350	44	Fracture Discontinuous Hairline-fracture
248.0	N168	35	Primary-structure Planar Bedding
250.8	N141	32	Primary-structure Planar Bedding
254.0	N158	30	Primary-structure Planar Bedding
256.1	N156	38	Primary-structure Planar Bedding
259.4	N163	35	Primary-structure Planar Bedding
260.3	N150	32	Primary-structure Planar Bedding