

APPENDIX D
AQUIFER TESTS

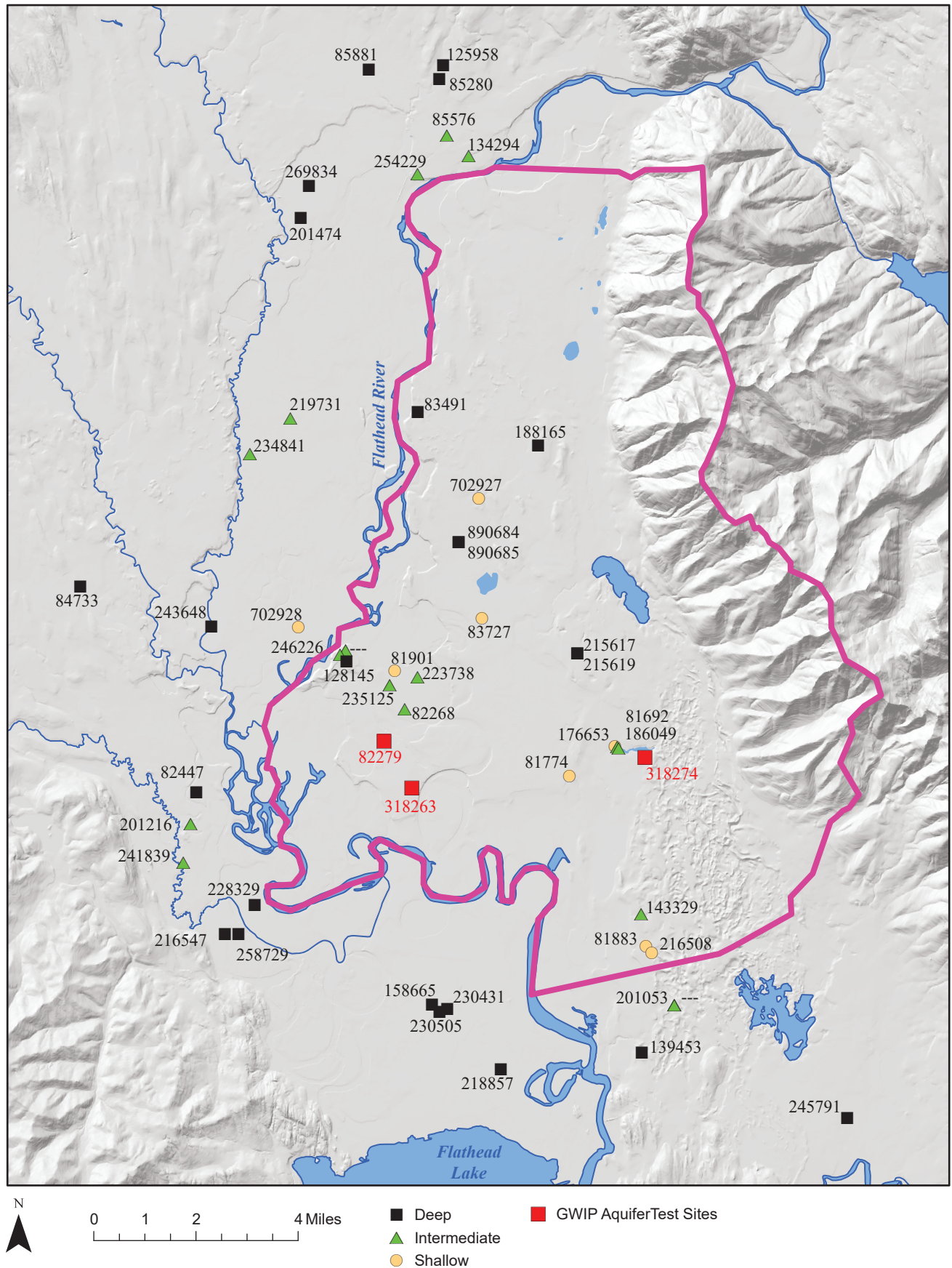


Figure D1. Locations and GWIC IDs of wells with aquifer test information from previous studies, and the locations of aquifer tests by GWIP in the East Flathead study area (Myse and others, 2023). Pink outline shows the East Flathead Study Area.

Table D1. Previous aquifer tests (from DNRC records).

| GWIC ID | Latitude | Longitude | Well Depth (ft) | Screen Length (ft) | Transmissivity (ft ² /d) | Storativity | Hydraulic Conductivity, K (ft/d) | HGU |
|---------|----------|-----------|-----------------|--------------------|-------------------------------------|-------------|----------------------------------|--------------|
| 702928 | 48.2275 | -114.2561 | 100 | 17 | 510 | | 20 | Shallow |
| 81901 | 48.2169 | -114.2141 | 110 | 10 | 48 | | 3.2 | Shallow |
| 81883 | 48.1430 | -114.1005 | 140 | 20 | 14,301 | | 476.7 | Shallow |
| 702927 | 48.2672 | -114.1827 | 142 | 17 | 110 | | 4.3 | Shallow |
| 81774 | 48.1900 | -114.1372 | 163 | 17 | 375 | | 14.7 | Shallow |
| 83727 | 48.2333 | -114.1783 | 195 | 17 | 16,711 | | 655.3 | Shallow |
| 186049 | 48.1991 | -114.1186 | 198 | 17 | 16,000 | | 627.5 | Shallow |
| 216508 | 48.1412 | -114.0978 | 201 | 12 | 1,300 | | 72.2 | Shallow |
| 176653 | 48.1990 | -114.1177 | 202 | 14 | 8,740 | | 416.2 | Intermediate |
| 246226 | 48.2219 | -114.2355 | 207 | 22 | 2,197 | | 66.6 | Intermediate |
| 201216 | 48.1699 | -114.2968 | 216 | 17 | 635 | | 24.9 | Intermediate |
| — | 48.2204 | -114.2377 | 220 | 12 | 2,382 | 2.50E-04 | 132.3 | Intermediate |
| 235125 | 48.2127 | -114.2158 | 222 | 10 | 2,930 | 8.50E-05 | 195.3 | Intermediate |
| 85576 | 48.3697 | -114.2056 | 231 | 35 | 21,200 | | 403.8 | Intermediate |
| 219731 | 48.2866 | -114.2649 | 235 | 80 | 15,551 | 8.19E-03 | 129.6 | Intermediate |
| 143329 | 48.1520 | -114.1033 | 260 | 15 | 649 | | 28.8 | Intermediate |
| 82268 | 48.2061 | -114.2088 | 264 | 16 | 455 | | 19 | Intermediate |
| 254229 | 48.3581 | -114.2170 | 270 | 16 | 22,000 | | 916.7 | Intermediate |
| 223738 | 48.2154 | -114.2042 | 280 | 14 | 8,420 | 1.70E-04 | 401 | Intermediate |
| 201053 | 48.1266 | -114.0869 | 286 | 84 | 18,637 | 1.40E-01 | 147.9 | Intermediate |
| — | 48.1266 | -114.0869 | 286 | 38 | 4,350 | | 76.3 | Intermediate |
| 241839 | 48.1587 | -114.2988 | 287 | 26 | 45,962 | | 1,178.50 | Intermediate |
| 81692 | 48.1986 | -114.1169 | 300 | 131 | 7,273 | 2.60E-03 | 37 | Intermediate |
| 234841 | 48.2758 | -114.2811 | 300 | 10 | 828 | 5.00E-03 | 55.2 | Intermediate |
| 134294 | 48.3642 | -114.1957 | 304 | 65 | 30800 | 4.26E-04 | 315.9 | Intermediate |
| 82447 | 48.1790 | -114.2952 | 306 | 12 | 5,342 | | 296.8 | Deep |
| 139453 | 48.1126 | -114.0995 | 310 | 65 | 49,788 | | 510.6 | Deep |
| 245791 | 48.0974 | -114.0108 | 322 | 54 | 4,500 | 1.20E-03 | 55.6 | Deep |
| 216547 | 48.1392 | -114.2794 | 346 | 82 | 980 | 1.00E-04 | 7.9 | Deep |
| 228329 | 48.1479 | -114.2675 | 350 | 58 | 31,416 | 1.20E-05 | 361.1 | Deep |
| 188165 | 48.2833 | -114.1588 | 356 | 120 | 2,203 | | 12.2 | Deep |
| 85881 | 48.3871 | -114.2406 | 378 | 10 | 62 | 2.50E-05 | 4.2 | Deep |
| 215617 | 48.2248 | -114.1369 | 395 | 39 | 559 | 1.70E-03 | 9.6 | Deep |
| 84733 | 48.2352 | -114.3499 | 400 | 65 | 20,880 | 2.00E-04 | 214.2 | Deep |
| 230505 | 48.1208 | -114.1864 | 400 | 65 | 17,200 | 3.30E-05 | 176.4 | Deep |
| 243648 | 48.2262 | -114.2931 | 420 | 37 | 12,420 | 4.80E-05 | 223.8 | Deep |
| 258729 | 48.1394 | -114.2736 | 421 | 78 | 9,255 | 5.70E-04 | 79.1 | Deep |
| 158665 | 48.1227 | -114.1897 | 448 | 15 | 28,946 | | 1,286.50 | Deep |
| 83491 | 48.2907 | -114.2109 | 454 | 251 | 17,480 | | 46.4 | Deep |
| 128145 | 48.2187 | -114.2348 | 489 | 24 | 2,102 | | 58.4 | Deep |
| 201474 | 48.3438 | -114.2657 | 543 | 78 | 13,100 | 3.50E-03 | 112 | Deep |
| 269834 | 48.3530 | -114.2630 | 602 | 22 | 1,686 | 9.00E-03 | 51.1 | Deep |
| 230431 | 48.1218 | -114.1831 | 640 | 65 | 28,946 | 2.62E-04 | 296.9 | Deep |
| 215619 | 48.2248 | -114.1369 | 654 | 109 | 860 | | 5.3 | Deep |
| 218857 | 48.1055 | -114.1589 | 685 | 17 | 5,331 | | 209.1 | Deep |
| 890684 | 48.2545 | -114.1902 | 690 | 65 | 17300 | | 177.4 | Deep |
| 890685 | 48.2545 | -114.1902 | 690 | 99 | 16,711 | 1.50E-03 | 112.5 | Deep |
| 85280 | 48.3855 | -114.2103 | 734 | 65 | 162 | | 1.7 | Deep |
| 125958 | 48.3896 | -114.2090 | 743 | 23 | 160 | 3.50E-02 | 4.6 | Deep |

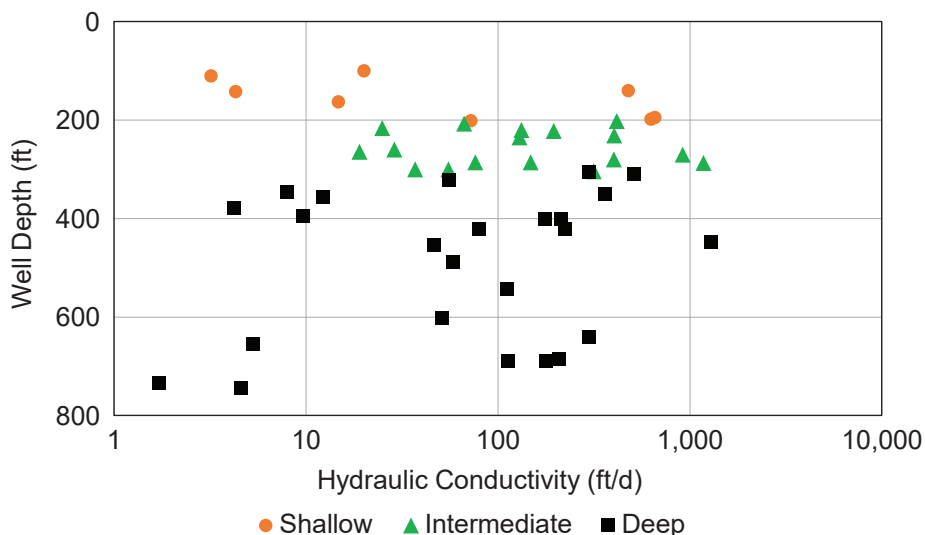


Figure D2. Aquifer test results by well depth and aquifer.

Table D2. Summary of hydraulic conductivity (K) from previous aquifer tests (ft/d)

| HGU | <i>n</i> | Min | Max | 25th Percentile | Median | 75th Percentile | Geometric Mean |
|-----------------------|----------|-----|-------|-----------------|--------|-----------------|----------------|
| Shallow Aquifers | 8 | 3 | 655 | 12 | 46 | 514 | 52 |
| Intermediate Aquifers | 17 | 19 | 1,179 | 55 | 132 | 401 | 135 |
| Deep Aquifer | 24 | 2 | 1,287 | 12 | 96 | 217 | 61 |

Table D3. Wells used for GWIP aquifer tests.

| GWIC ID | Name | Latitude (deg. N) | Longitude (deg. W) | Measuring Point Elevation (ft-amsl) | Total Depth (ft-bgs) | Screen Interval (ft) | Distance from PW (ft) | Comments |
|-------------------------|-------------------------|-------------------|--------------------|-------------------------------------|----------------------|----------------------|-----------------------|-------------------------------|
| Foy's Bend | | | | | | | | |
| 318263 | Quigley Deep | 48.167212 | 114.233313 | 2909.51 | 640 | 610 - 630 | — | Deep Pumping Well |
| 318266 | Quigley Intermediate | 48.167260 | 114.233177 | 2910.55 | 300 | 295 - 300 | 33 | Intermediate Observation Well |
| 318265 | Quigley Shallow | 48.167241 | 114.233235 | 2910.04 | 50 | 40 - 50 | 56 | Shallow Observation Well |
| Jessup Mill Pond | | | | | | | | |
| 318274 | Ottey PW | 48.196797 | 114.105436 | 2987.99 | 300 | 278-298 | — | Deep Pumping Well |
| 304315 | Ottey House Well | 48.196493 | 114.105899 | 2972.10 | 52 | Open Bottom | 188 | Shallow Observation Well |
| 310815 | Ottey 280 | 48.196444 | 114.105578 | 2973.07 | 280 | Open Bottom | 202 | Deep Observation Well |
| 310816 | Ottey 180 | 48.196439 | 114.105584 | 2972.99 | 180 | Open Bottom | 203 | Intermediate Observation Well |
| Jaquette Road | | | | | | | | |
| 82279 | Ken Smith | 48.196594 | 114.216836 | 2950.83 | 486 | 438-478 | — | Deep Pumping Well |
| 262323 | MBMG Intermediate | 48.196536 | 114.216977 | 2948.73 | 217 | Open Bottom | 40 | Top of Deep Observation Well |
| 262324 | MBMG Shallow | 48.196553 | 114.216916 | 2948.46 | 66 | 56-66 | 24 | Shallow Observation Well |
| 262325 | MBMG Deep | 48.196591 | 114.217362 | 2952.02 | 480 | Open Bottom | 128 | Deep Observation Well |
| 128155 | Ken Smith - Domestic | 48.196858 | 114.218400 | 2926.65 | 417 | 363-416 | 393 | Deep Observation Well |
| 197798 | Fairmont Egan School #3 | 48.196995 | 114.221201 | 2941.60 | 298 | Open Bottom | 1,078 | Deep Observation Well |
| 143331 | Bill and Linda Arlint | 48.189944 | 114.219203 | 2951.50 | 200 | Open Bottom | 2,494 | Deep Observation Well |

Note. ft-amsl, feet above mean sea level; ft-bgs, feet below ground surface. Horizontal Datum, NAD83; Vertical Datum, NAVD88.