

4.8.5.2 Ground-Water Monitoring

Map M52 shows the locations of the ground-water monitoring sites. The current list of ground-water parameters to be monitored is given in Table 4.8-13. The current ground-water monitoring schedule is summarized in Table 4.8-13a. Table 4.8-13a was changed in PR-3 (permit term 1993-1997) in order to accommodate a more clearly understandable and user friendly monitoring schedule format. In Technical Revision TR-93, the Division and Trapper Mining Inc. agreed that well GP-9 is the point of compliance for the Basic Standard for Ground Water for the Third White sandstone. In Technical Revision TR-96, the Division and Trapper Mining Inc. agreed that the Coy well is the point of compliance for the Basic Standards for Ground Water for the Flume Gulch alluvium.

Three lists of ground-water parameters are sampled as outlined in Table 4.8-13, according to the schedule presented in Table 4.8-13a. The hydrologic data derived from this monitoring program is submitted to the Division on an annual basis by March 15 of each year. The first Annual Hydrologic Report was submitted to the Division in January, 1983.

LIST B in Table 4.8-13 gives the parameters to be sampled on an annual basis during third quarter of each year. LIST C and LIST D are sampled during the second quarter of each year. LIST C is used to sample operational wells which monitor the effects of mining in areas not associated with utility wastes disposal. LIST D is used for wells to monitor the effects of utility wastes disposal. With regard to LIST D, actual installation of wells in the backfilled pits will be dependent upon whether or not utility wastes are disposed upgradient from the proposed monitoring sites. Proposed wells in the undisturbed aquifers downgradient of utility wastes disposal sites will be installed as waste disposal progresses and as needed. List E was used for monitoring the LUX-1 well. List E was removed from Table 4.8-13 in PR-6 because the LUX-1 well was sealed and abandoned in 2006 as a result of the approval of final bond release application SL-7.

Historical information on well completion information and lithologic logs for monitoring wells are included in various sections of the permit application. Appendix H, Radian Report Tech. Note 280-311-02-03 lists information for monitoring well series GF, GBB, and GZ. Section 2.7.7.3 (p 2-539) of the permit application provides information on lithologic logs for monitoring wells F-1, F-2, P-1, P-3, P-5, and P-8. A well construction diagram is provided in Appendix V. Appendix V also provides lithologic logs and monitoring well completion information for wells GA-1, GA-2, GB-1, GB-2, GB-5, GC-1, GC-3, GE-1, GE-2, GE-3, GD-1, GD-1(2), GLEV-1, GLEV-2, GLEV-3, CY-A, CY-1, CY-2, CY-3 and Empire Well 81-03A.

Mercury, silver and zinc are not included in LIST B because their concentrations in historic samples were very low and because it is unlikely they would occur in significant concentrations in any potential leachate from utility wastes (refer to Section 4.3.4.6). Iron was removed from List C as the definition of variations in iron concentrations is not very useful since the range in this parameter has been defined. TDS was added to List C until a good correlation between TDS and conductivity can be established. Carbonate was added to list B and is used for situations when the pH is greater than 8.3.