

**From:** April Abate  
**To:** kit@emerytelcom.net  
**CC:** OGMCOAL@utah.gov  
**Date:** 8/10/2011 2:36 PM  
**Subject:** Horizon MRP Page 7-32  
**Attachments:** 20110810152749.pdf; April Abate.vcf

Hi Kit,

I left you a voice mail regarding this issue. You submitted page 7-32 in response to our letter on June 28, 2011 discussing the 2010 Annual Report findings.

This page does not match up with the paragraph on the previous page. I am attaching page 7-31 from our copy of the MRP and page 7-32 that you sent in so that you can compare the two pages. Can you please send me a corrected copy of page 7-32 via email? Also, the date in the upper right corner needs to be changed as well.

Thanks for your help.  
Sincerely,

April Abate

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meter/guage is installed. Refer to Section 7.2.3.2 for a discussion of temporary mine water discharge monitoring. A continuous flow meter was installed in 2001 and has been used to report mine discharge quantities since that time.

Each of the springs to be monitored issue from portions of the Blackhawk Formation which are stratigraphically higher than the Hiawatha coal seam. Therefore, data collected from the springs will allow quantification of potential impacts to perched aquifers within the permit and adjacent areas of both the initial permit term and future permit terms. Spring SP-2 is within approximately 400 feet of the initial planned workings and in an area which overlies future workings (see Plate 3-3). Springs SP-1, SP-4, and GV-70 are in an area which lies within 200 to 700 feet of proposed future workings. These distances are all within the zone of potential subsidence as defined in Section 3.4.8.5. Hence, data collected from these springs will assist in determining the impacts of subsidence on the groundwater resources of the Blackhawk Formation.

Springs SP-9 and 2-6-W lie approximately 1800 feet and 4900 feet southwest of the proposed future mine workings. As a result, they are in areas which will not likely be impacted by subsidence effects (see Section 3.4.8.5). Hence, these springs will be monitored to provide background data on groundwater conditions within the Blackhawk Formation in areas that will not likely be impacted by mining.

During the operational and reclamation phases of the mine, the above-noted springs will be monitored once each calendar quarter when the springs are accessible. The data to be collected from these springs are listed in Table 7-2. Monitoring data will be reported to the Division on a quarterly basis.

Sampling of springs CC-5 and MC-4 will begin in 1997 and continue through 1999. If requested by UDOGM the sampling may continue beyond 1999. CC-5 and MC-4 will be sampled quarterly and analyzed for calcium, magnesium, sodium, potassium, carbonate, TDS, sulfate, and chloride. Flow, pH and conductivity data will also be collect for springs CC-5 and MC-4. The data from the analyses will be included in Appendix 7-2.

Data collected from mine inflows will allow impacts to be quantified to all hydrologic resources that are affected by mine dewatering. Changes in the quantity and quality of mine inflows will be evaluated with the additional groundwater data to assess the overall hydrologic impacts of the mining operation.

Data collected from the HZ wells will allow quantification of potential impacts to the regional groundwater system. Specifically, data collected from wells HZ-95-1 and HZ-95-1S will assist in evaluating the impacts of mine dewatering on the quantity of groundwater in the Blackhawk Formation and the underlying Spring Canyon tongue. This will be particularly helpful in estimating potential future impacts as the mining operation expands to the northwest beneath Beaver Creek.

Data collected from HZ-95-2 will allow quantification of impacts to groundwater in the Spring Canyon tongue outside of the assumed adjacent area. Furthermore, if impacts are noted to water levels at the location of HZ-95-2, these data may provide information regarding the extent of the hydraulic connection across the northeast boundary fault. Finally, since HZ-95-3 is located near

well for future use and should not be permanently closed until final reclamation of the site takes place. In waiting until final reclamation of the site takes place to seal the well, we are sure to avoid damages that will be caused during the process. Monitoring well HZ-95-3 will be maintained for the purpose of ventilation, shaft, and other underground mining related projects. It is therefore a desire to keep maintaining monitoring well HZ-95-3. Monitoring well HZ-95-3 has been mined into by previous mining. However, it is believed that the well can still be considered a monitoring well for future use and should not be permanently closed until final reclamation of the site takes place. In waiting until final reclamation of the site takes place to seal the well, we are sure to avoid damages that will be caused during the process. Monitoring well HZ-95-3 will be maintained for the purpose of ventilation, shaft, and other underground mining related projects. It is therefore a desire to keep maintaining monitoring well HZ-95-3.

Monitoring Well HZ-01-06-1 was installed in November 2001 to monitor the effects of mining on the potentiometric surface in the Spring Canyon Sandstone at the northern extents of the permit area.

Representative points of inflow will then be selected based on the source or the areal zone, and samples will be collected from those representative points for analyses in accordance with Table 7-2. The sampling will continue once each quarter as long as the inflow point remains accessible during mining operations or until the flow diminishes. Data will be collected as close to the point of issuance as possible to prevent contamination by mining operations.

Sampling information for in-mine water flow was collected at the locations noted on Plate A, Appendix 7-2, Attachment A and Plate 7-1. The analysis associated with the samples is included in Appendix 7-2, Attachment A. Additional sampling for TSS was requested by Utah Division of Water Quality, these analyzes are also included in Attachment A.

The in-mine water pumped and discharged to the surface was measured daily when personnel were at the mine (Appendix 7-2, Attachment A, Horizon In-Mine Water Log, 1998 - 1999). Other days, such as weekends and holidays the flow was estimated. The flow was measured as the water exited through a pipe or a weir and collected in a bucket.

The Horizon In-Mine Water Log, 1998 - 1999 shows the flow in gallons per minute. Empty boxes in the chart signify no discharge of in-mine water. See annual reports for additional pumping data.

Discharge water from the mine will be treated in underground sumps, to meet effluent limitations. Discharged water will be monitored as described above and in accordance with the discharge permit issued by the Division of Water Quality (Appendix 3-6).

While sampling the HZ wells immediately after drilling, each well was pumped for a period of 2 to 4 weeks, during which time the wells were repeatedly pumped dry and allowed to recover. The samples were collected at the end of the above periods. Given the fact that the wells still appeared to be influenced by foam drilling fluids when sampled (based on pH, discoloration, etc) and the fact that sampling required an extended period of time due to the low yield of the wells, future sampling of the wells for water-quality analyses is not proposed. Rather, data collected from the wells in the future will consist solely of water-level information. Springs and mine-water inflows will be used to monitor changes in water quality within the permit and adjacent areas.