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TO: Internal File

FROM: Michael J. Suflita, Senior Reclamation Specialist MJS

RE: Water Monitoring Requirements Change, Plateau Mining Corp., Willow Creek Mine, C/007/038-AM00L-2

SUMMARY:

Proposed changes to the water-monitoring plan for Willow Creek Mine were received on November 17, 2000. The Division returned a Technical Analysis on January 12, 2001 in which there were deficiencies. The Operator submitted a response that was received by the Division on April 16, 2001. On July 27, 2001 the Division received a response to the TA. This Technical Memo is in response to that latest submittal. There are two deficiencies that need correction.

TECHNICAL ANAYLSIS:

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Ground-water monitoring and Surface-water monitoring

The amendment proposes elimination of one stream monitoring point, B131, and one spring monitoring point, B241. The justification for eliminating these points is found on page

4.7-12 where it's noted that they are some distance from the projected mine workings and are, "outside the realm of impact from mining associated with the Willow Creek Mine". Further, B131 does not drain any land from the permit area and B241 will not be undermined.

While researching the request to eliminate the monitoring points it was evident from the regulations that the Division should make a finding as to whether the points were "reasonably necessary" for the permit to be maintained. The following permit drawings were reviewed: Maps 12, 14E, 15, 19B, and 19D. From them it was determined that the expected subsidence areas of the A and K seams were the only ones close enough to possibly impact the recharge area to the spring and the drainage area of the stream monitoring points. The subsidence areas for both seams are not close enough to impact the spring or the stream. There is also about 3,000 feet of overburden in the mined area, which would have little subsidence. Further, there is canyon drainage, Deep Canyon that is deep enough to separate the subsidence areas and the monitoring points. Therefore, the two monitoring points, B131 and B241, do not appear to be needed and they can be eliminated from the monitoring plan. They are not reasonably necessary to monitor possible mining impacts to the hydrologic regime. Since sites B131 and B241 are removed from the MRP, Tables 3.7-1 and 4.7-1 have been modified by crossing out the sites to reflect the changes. However, the sites are left on the table to show readers that historical data exists for the sites.

Table 4.7-2, Hydrologic Monitoring Program Water Quality Analysis Parameters, has been modified to delete the requirement for laboratory analysis of pH and EC, micromhos @25 degrees Celsius. Using the Division's Water Quality Database, the field and laboratory pH and EC were compared. While all sites reporting these parameters were reviewed, not all the individual reporting sites were evaluated. First, it was noted that field analysis of both parameters was present for 100% of the entries. By contrast, lab pH was reported only 32% of the time and lab EC was reported only 42% of the time. Second, a quick visual inspection showed the field and laboratory EC were different in about 10% of the entries. This demonstrates that field parameters are reported all the time as compared to the lab analysis which is reported only about 1/3 of the time. Further, in 90% of the cases the field and lab EC were consistent 90 % of the time. These comparisons provide justification for removing laboratory analysis of pH and EC.

Table 4.7-2, footnote 3, indicates, "Stream monitoring locations B3N, B5, B6, and B151 will be monitored for dissolved oxygen. Stream monitoring locations B25, B26, B263, B353, BN221 will not be monitored for dissolved oxygen, because these sites do not have direct contact with the mine's operation, the concentrations of chemicals have remained constant and they do not support fisheries." First, sites B25 and B26 are located above and below the disturbed area in Crandall Canyon. This is an ephemeral stream. Further, dissolved oxygen, DO, is monitored to determine quality of fish habitat. There are no fish in Crandall Canyon since there's a 12 foot water fall at the mouth of the canyon that prevents fish from ever migrating up the stream. Removal of the requirement to monitor DO at B25 and B26 is justified.

B263 is in the upper reach of Deep Canyon which is also an ephemeral stream which has no fish in it. BN221 is at the mouth of Sulphur Canyon which is also an ephemeral stream and has a falls at the mouth of the stream which prevents fish from going upstream. Removal of the requirement to monitor DO at B263 and B221 is justified.

B353 is located in Mathis Canyon which is fed by Mathis Spring. Thus the upper reaches are ephemeral while the lower half is spring-fed. A fish survey was performed by the mine in cooperation with the Utah Division of Wildlife Resources, DWR. "No fish were found." is the conclusion of the survey as documented in a September 6, 2001 letter from DWR to DOGM. They also "noted the presence of barriers to upstream fish migration". Since DO is monitored to determine quality of fish habitat, and since there are no fish in the stream, the removal of the requirement to monitor DO at B353 is justified. The DWR letter needs to be included in the amendment submittal to become part of the MRP.

Four new pages in Exhibit 19, Chapter 7, Hydrology are included in the submittal. Included are the cover page, page 7-iv,7-57, and the last page of Table 4.7-3. These are to add historical perspective to the separation of the old Castle Gate Mine, Mining and Reclamation Plan from the new Willow Creek Mine, MRP.

The last proposed modifications to the water monitoring plan are contained in Table 4.7-3 which contains both the Willow Creek Operational Water Sampling Schedule, which is used during the Operational Phase of mining and the Willow Creek Baseline Water Sampling Schedule to be used for Monitoring in 2005 (year prior to permit renewal).

The revised Willow Creek Operational Water Sampling Schedule and the Willow Creek Baseline Water Sampling Schedule shows monitoring in all four quarters of the year as required by regulations. This is true for all springs, streams, and wells. The revised monitoring is considerably simpler than the original one and still satisfies regulations. Further, the field and operational monitoring is scheduled for the last month of the first quarter and the first month of the last quarter, which has greater assurance of being performed during those winter months. There is, however, one unexplained discrepancy for both parts of the table. That is, the third quarter monitoring for all springs and streams has NO operational parameters being measured. All the other quarters of the year have operational monitoring and there's no reason not to do so in the third quarter. Third quarter operational monitoring requirements must be included in the mine's monitoring program.

Findings:

Information provided in the proposed amendment is not considered adequate to meet the requirement of this section. Prior to approval, the Permittee must provide the following in accordance with:

R645-301-731, 1) Restore Operational monitoring to springs and streams during the third quarter for both Willow Creek Operational Water Sampling Schedule, which is used during the Operational Phase of mining and the Willow Creek Baseline Water Sampling Schedule to be used for Monitoring in 2005 (year prior to permit renewal). **2)** Include the DWR letter as part of the amendment to become part of the MRP.

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