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State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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June 15, 2001

Johnny Pappas, Sr. Environmental Engineer
Plateau Mining Corp.
847 Northwest Highway 191
Helper, UT 84526

Re: Water Monitoring Requirements Changes, Plateau Mining Corp., Willow Creek Mine, C/007/038- AM00L-1, Outgoing File

Dear Mr. Pappas:

The above-referenced amendment has been reviewed. There is a deficiency that must be adequately addressed prior to approval. A copy of our Technical Analysis is enclosed for your information. In order for us to continue to process your application, please respond to this deficiency by June 29, 2001.

If you have any questions, please call me at (801) 538-5325 or Mike Suflita at (801) 538-5259.

Sincerely,

Daron R. Haddock
Permit Supervisor

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Enclosure:
cc: Price Field Office
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State of Utah

Utah Oil Gas and Mining

Coal Regulatory Program

Willow Creek Mine
Water Monitoring Changes Application
C/007/038–AM00L-1
Technical Analysis
June 8, 2001

TECHNICAL ANAYLSIS

INTRODUCTION

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. This Technical Memo is in response to that latest submittal. Deficiencies remain and they will have to be corrected.

INTRODUCTION

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 a canyon drainage, Deep Canyon, that is deep enough to separate the subsidence areas and the monitoring points. Therefore, the two monitoring points 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 to be removed from the MRP, it will be necessary to modify Tables 3.7-1 and 4.7-1 to reflect the changes.

Table 4.7-2, Hydrologic Monitoring Program Water Quality Analysis Parameters, has been modified to delete the laboratory analysis of pH and EC, micromhos @25 degrees Celsius. No justification is given. 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 noticeably different in about 10% of the entries.

Criteria to modify the water-monitoring plan are contained in paragraph R645-301-731.224. Certain demonstrations are required in that regulation. Specific examples for this case might include comparison of the EC to Total Dissolved Solids (TDS), which typically have a common ratio to one another. Another possibility would be to relate the EC to Total Cations. Since both TDS and Total Cations are reported, it conceivably might be demonstrated that these would be sufficient. This would have to be done using past collected data, which, as noted above, is deficient. Based on the absence of a justification to eliminate pH and EC, the laboratory tests will have to be continued. The modification to eliminate them cannot be approved.

Table 4.7-2, footnote 3, indicates, "Stream monitoring locations B3N, B5, B6, and B151 will be monitored for dissolved oxygen. Stream monitoring locations B211, 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. Although this site is not currently active, it's not reclaimed and facilities there are being maintained. The potential exists for the site to be used in the future. The Crandall Canyon area potentially can have contact with the mine's operation. As such, these two sites will need to continue monitoring dissolved oxygen.

Criteria to modify the water-monitoring plan are contained in paragraph R645-301-731.224. Certain demonstrations are required in that regulation. The statement that "concentrations of chemicals have remained constant" has not been demonstrated. What chemicals are involved and where have they remained constant? Similarly, the statement that "they do not support fisheries" has not been demonstrated. The streams involved are tributaries to the Price River and Willow Creek, both of which have fish in them. A check with the Utah Division of Wildlife Resources indicates these tributaries would be expected to have fish in them, at least during the spawning season. One possible exception is Sulphur Canyon which may have a falls at the mouth near the Price River which prevents fish from going upstream. In any case, the Division would expect fish surveys that take into account the spawning season that would demonstrate the presence or absence of fish. Macroinvertibrate surveys would also be useful. Other demonstrations as indicated in R645-301-731.224 may prove the ability to eliminate the dissolved oxygen monitoring. Based on the absence of a justification to eliminate dissolved oxygen, the laboratory tests will have to be continued. The modification to eliminate them cannot be approved.

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). There are three proposed changes to this table. It's important to note that the changes are all explained and, to some extent justified, in the cover letter accompanying the submittal. Since this is a change to the MRP, these need to be included in the MRP so future readers will understand the rationale accompanying the changes. The first change is "to use baseline parameters for sampling again in the year 2005 the year prior to our next permit renewal". Comparing the approved baseline monitoring in the MRP table to the baseline revised table shows:

1. **Springs** were monitored for original baseline during the months of April and June. These months no longer have monitoring in the revised table.

2. **Streams** were monitored for original baseline during the months of February, March, April, June, July, September, November, and December. These months no longer have monitoring in the revised table.

3. **Wells** were monitored for the original baseline during the months of February and March. These months no longer have monitoring in the revised table. Monitoring in August is changed to take place in July. Although these two months are in the same quarter, this would make future comparisons invalid when compared to the baseline data.

Taken together, these differences show the revised monitoring to be substantially less than that originally approved in the MRP for baseline monitoring. Criteria to modify the water-monitoring plan are contained in paragraph R645-301-731.224. Certain demonstrations are required in that regulation. No justification is provided for the reduction in monitoring so the change cannot be approved.

The second change to the table: "Operational sampling parameters were used in years 1996 through 1999 and will be used each year in the future, except for the year prior to permit renewal." Comparing the approved operational monitoring in the MRP table to the operational revised table shows:

4. **Springs** were monitored for original operation during the month of April. This month no longer has monitoring in the revised table. The original operation had no monitoring during the month of August. This month is monitored in the revised table.

5. **Streams** were monitored in the original operation during the months of February, March April, June, July, September, November, and December. These months no longer have monitoring in the revised table.

6. **Wells** were monitored in the original operation during the month of March. This month no longer has monitoring in the revised table. Monitoring in August is changed to take place in July. Although these two months are in the same quarter, this would make future comparisons invalid when compared to the baseline data.

Taken together, these differences show the revised monitoring to be substantially less than that originally approved in the MRP for baseline monitoring. Criteria to modify the water-monitoring plan are contained in paragraph R645-301-731.224. Certain demonstrations are required in that regulation. No justification is provided for the reduction in monitoring so the change cannot be approved.

The third change to the table is to eliminate all water monitoring in the first quarter because, historically, there has been no access to the majority of the water monitoring locations for the Willow Creek Mine until April or May (2nd Quarter), due to snow and/or mud. A check of the Division's Water Quality Database showed there are 16 stream monitoring points listed. Since the mine permit was issued in April of 1996 one would expect the amount of stream monitoring access as shown in the following table. The inquiry here is to determine during which quarters the monitoring points were accessible, based on data reported by the mine.

Expected Number of Stream Accesses

Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
1996	None	16	16	16
1997	16	16	16	16
1998	16	16	16	16
1999	16	16	16	16
2000	16	16	16	16
Total	64	80	80	80

Actual Number of Stream Accesses, Database Records

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Accesses	25	30	25	44
Percent of Expected	25/64 = 39%	30/80 = 38%	25/80 = 31%	44/80 = 55%

Given these numbers, there does not appear to be justification for elimination of water monitoring in the first quarter. It could be argued that access in the first quarter is available the second most often of all the quarters.

Another consideration is the access to certain stream monitoring points. Consider that B151, B3N, B5, and B6 are all located immediately adjacent to state highways that are maintained all year long. Nothing prevents access to these points at all times. Also, B22-1, BN221, and B221 are all less than 1,000 feet from highways and can be reasonably accessed also. Springs are not monitored during the first quarter in the approved MRP or in any of the proposed changes, so elimination of first quarter monitoring for springs is a moot point.

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) Modify Tables 3.7-1 and 4.7-1 to reflect removal of monitoring points B131 and B241, 2) Retain laboratory analysis of pH and EC of water samples, or provide adequate justification for their removal, 3) Retain dissolved oxygen monitoring for sites B25 and B26, 4) Provide adequate justification for changing Table 4.7-2 Dissolved Oxygen requirements, or do not make the changes, 5) Provide adequate justification for changing Table 4.7-3, or do not make the changes, 6) Retain all existing first quarter water monitoring, and 7) Number all pages.

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