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DIVISION OF OIL, GAS AND MINING

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TO: Internal File
FROM: Dana Dean, Reclamation Specialist 
RE Reduce Water Monitoring Requirements, Plateau Mining Corporation, Star Point Mine, C007/006-AM02A

SUMMARY:

On January 18, 2002 the Division received a request to amend the Mining and Reclamation Plan (MRP) to reduce water-monitoring requirements at the Star Point Mine. There are currently 41 sampling sites at the Star Point Mine. Of these, 26 are springs, 12 are streams, and 3 are wells. Mining operations ceased in February of 2000. After recovery of equipment, the portals were sealed in December 2000. Based on water quality and quantity information gathered over the past 20 years, Star Point would like to reduce monitoring to two stream locations, 10-1 and ST-1.

TECHNICAL ANALYSIS:

RECLAMATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Analysis:

General

Rules 645-301-731.214 and 645-301-731.224 state that ground- and surface-water monitoring will continue during reclamation until bond release, but that monitoring requirements including parameters and frequency may be modified by the Division if the operator demonstrates that:

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The coal mining and reclamation operation has minimized disturbance to the prevailing hydrologic balance in the permit and adjacent areas and prevented material damage to the hydrologic balance outside the permit area; water quantity and quality are suitable to support approved postmining land uses and the coal mining and reclamation activity has protected or replaced the water rights of other users; or

Monitoring is no longer necessary to achieve the purposes set forth in the monitoring plan approved under R645-301-731.211.

In this case the operator has presented evidence in the form of a study completed by EarthFax Engineering, Inc. to support its conclusion that disturbance to the hydrologic balance has been minimized during mining.

This technical analysis is based on the EarthFax report and an independent look at the water monitoring data available in the DOGM electronic database.

Ground-water monitoring

Star Point currently monitors 26 springs and 3 wells. These sites have been active between 6 and 22 years, most being 13 years old. There is sufficient data available to analyze flow and quality patterns at most of the sites.

A review of the quantity data shows that with the exception of S18-2 and Birch Spring, all springs follow seasonal and/or climatic trends.

S18-2 followed seasonal and climatic trends until 1990. Since 1990 only two non-zero flows have been registered and flow has been zero since 1998. However, there are no water rights associated with S18-2 and nearby springs (232, 238, 492, 753, 978) which were also undermined and do not seem to have been impacted.

Birch Spring shows diminished flows from March of 1998 to March of 2000 but has since recovered.

Well 86-26-6 shows a slight initial impact due to mining, but has since recovered. Well 86-35-2-3 shows significantly diminished flows in response to mine dewatering, but has recovered.

Piper diagrams show that quality data is well clustered. Rare non-clustered values do not show a temporal trend. Temporal plots show seasonal and climatic trends.

On August 19, 1998 the Division received a citizen's complaint regarding Spring 971. The complaint alleged that the spring had dried up due to mining activity at the Star Point Mine.

Subsequent field visits and meetings were held where representatives of the mine and the concerned parties were present. It was not determined whether or not mining activity was the actual cause of the decreased flow due to the lack of baseline data. However, the operator committed to the following:

- Work with the water users to maintain/redevelop the spring.
- If unsuccessful, construct a livestock, wildlife water reservoir in the same spring service area.
- Clean an existing reservoir fed by a spring.

The current monitoring record shows that the spring does not discharge and has only done so in sufficient quantities to measure flow and collect water samples once since monitoring began in 1989. As discussed in the field evaluation of September 9, 1998, any discharge quantities are unknown and undocumented. Because of the concern over Spring 971, the above commitments made by the operator should be reviewed and acted upon before monitoring is discontinued.

Surface-water monitoring

Star Point currently monitors 12 stream sites. These sites have been active between 9 and 22 years, most being more than 20 years. There is sufficient data available to analyze flow and quality patterns at most of the sites.

A review of the quantity data shows that with the exception of M-8, all streams follow seasonal and/or climatic trends.

M-8 has followed seasonal and climatic trends except between the years of 1990 and 1993. During that period flows were significantly diminished. Current flow rates are in-line with pre-mining values.

Piper diagrams show that quality data is well clustered and rare non-clustered values do not show a temporal trend. Temporal plots show seasonal and climatic trends.

Sites ST-1 and 10-1 both lie downstream of the current reclamation working areas and will allow DOGM to continue monitoring any impacts reclamation efforts may have on the surface water system.

Findings:

The plan meets the minimum regulatory requirements for this section.

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RECCOMENDATIONS:

It is recommended that the proposed amendment be approved for incorporation into the plan with the exception of monitoring at Spring 971. Spring 971 should continue to be monitored until commitments made by the mine to the water users are fulfilled.

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