



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Price Field Office
125 South 600 West
Price, Utah 84501

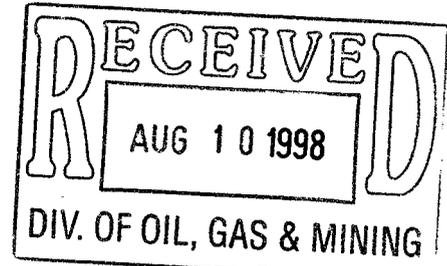
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(UT-066)

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~~ACT 100/006 #2~~

Mr. Art Palm
Acting General Manager
Cyprus Plateau Mining Corporation
P. O. Drawer PMC
Price, Utah 84501



Re: Longwall Equipment Abandonment, Starpoint Mine

Dear Mr. Palm:

On September 22, 1997, Cyprus Plateau Mining Corporation (Cyprus) submitted to the Bureau of Land Management (BLM) items for approval regarding mining operations at the Starpoint Mine. Ongoing resolution of issues with various Federal and state agencies regarding the disposal of materials on Federal coal leases has delayed the BLM acting on your requests, though various verbal authorizations have occurred. This letter is to officially notify Cyprus of the BLM's concurrence with items under our jurisdiction.

Cory Hayman, Area, Joe, Fran (2-sided)

Cyprus requested authorization to leave the longwall machinery in place at panel #42 or 14 Left. A combination of adverse events lead Cyprus to this request. A breakdown of the shear in between crosscuts and adverse loading on the shields from a sandstone channel in the roof were some of the main reasons to abandon the longwall in place. Removing the machinery under the existing conditions would be uneconomical and would pose a safety risk. We have consulted with the Mine Health and Safety Administration (MSHA) and agree with their assessment that the longwall could not be removed without compromising worker safety.

Cyprus has provided certification, which we have verified, that all fluids and oils that could contaminate the underground water have been removed. Other sources and experts have confirmed to us that no adverse effects would occur by leaving the steel longwall equipment underground. Therefore, our concurrence to leave the longwall equipment underground is based on safety concerns, but also this action would have no adverse environmental effects.

Cyprus has also requested approval under the Mineral Leasing Laws to abandon and seal the west area of the Starpoint #2 Mine (sometimes referred to the Castle Valley Ridge Graben coal block) at the rock slopes. We have verified that all remaining recoverable coal has been mined and maximum economic recovery has been achieved. The request is approved, which confirms previous verbal approval for the last longwall mining panel in this area.

If you have any questions or concerns, please contact Stephen Falk of my staff at (435) 636-3600.

Sincerely,

THOMAS E. BACHLUSSEN

Richard L. Manus
Field Office Manager

cc: UT-921, Utah State Office (w/staff report)
Manti-LaSal National Forest (w/staff report)
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Memorandum

To: The Files

From: Mining Engineer

Subject: Staff Report for Cyprus' Request to Leave Longwall Machinery Underground at Starpoint Mine.

This staff report documents the events and evaluation of the subject event at the Starpoint Mine. To start off, a brief history of the mining area needs to be discussed.

Cyprus has been mining in what is called the Castle Valley Ridge Graben area since 1989. This area is the west most property of the Starpoint Mine. Mining has been limited to the Wattis Seam (upper seam) as the lower Hiawatha Seam is only 4 feet thick over the extent of the area. The area is located on Federal coal leases U-13097 and U-64263, covering T. 15 S., R. 7 E., sections 26, 23, 14, and 11. This block of coal is in a long narrow graben formed by the west Pleasant Valley Fault system and another north-south fault on the east that forms a graben 3/4 mile wide. Access to the area from the existing mine to the east was via rock slopes across the east fault zone completed in 1989.

The rock slope accessed the Castle Valley Ridge Graben area at the north end of lease U-13097. East-west longwall panels were planned to be mined in succession starting from the top of the slopes and progressing south in this graben. At the same time, Cyprus applied for the Castle Valley Ridge lease tract adjacent and north of lease U-13097. The lease was issued to Cyprus and permitting the tract occurred about the time mining was completed in the south on lease U-13097. Development began north into the new lease, U-64263. Main entries were driven north near the east fault and longwall panels were developed west to the Pleasant Valley Fault. This is the layout of the area in question.

As mining extended the longwall panels north into lease U-64263, mining conditions slowly became less than ideal. Eight longwall panels were mined north from the graben slopes up to the planned 4 West submains. Just past the 4 West submains, a number of east-west fault/fracture zones were encountered. In addition, a large rock split was encountered in developing the longwall panels to the west which shortened the planned panel lengths to nearly 1/2 the projected length. Four of these short panels were completed with difficulty. Further advance north was stopped by one more east-west fault of large displacement. In addition, each of these last four longwall panels had intermittent channel scouring in the roof which forced the longwall cutting shear to mine rock. All these factors are mentioned to

impress the fact that the reserves in this north area of lease U-64263 were marginal at best. Cyprus reported net losses for the last few months of 1997. Numerous inspections by myself verified these facts and findings.

This lead up to the situation of leaving the longwall equipment in the last panel underground. The last longwall panel (named 14 Left or panel # 42) started up in August of 1997. The coal was thinning to the north and a sandstone channel had scoured out the coal to the west. This panel was only 1200 feet long. As the longwall approached crosscut 9, the planned take out room being crosscut 5, an associated channel scour in the middle of the panel was encountered. The channel had scoured out 3 feet of the coal along the face for 40 to 60 feet wide. Roof conditions were adverse as the sandstone top started to weigh heavily on the shields. Advance rates were slowed as cutting through the sandstone was hard. I had witnessed the problem and gave a tentative ok if Cyprus needed to terminate the panel before crosscut 5 as the mining was adverse and coal quality was below compliance with all the rock cut with the coal. Cyprus said they would have to advance at least to the next crosscut, #6, so that the machine could be pulled out under their approved safety plan. In September, Cyprus reported to me that the gear box on the shear was broke. The longwall then was between crosscut 7 and 6. Cyprus then made the decision to leave the longwall in place after removing all liquids and oils from the machinery. This decision was based on a number of factors.

With the gear box broke on the shear, the longwall could not advance any further, as the shear needs to cut the coal to advance the face, nor could the shear tram up and down the face without the gear box. The estimated repair cost ran over \$80,000. The longwall machine along with the shields were very old and well past salvage value other than scrap metal. Standard longwall removal requires on open crosscut to extract machinery practically and safely. The longwall would need to advance another 60 feet which it could not do without repair. No take out procedures had been started such as wire meshing the roof and installing extra bolts and cribs. Cyprus would have to modify their extraction plan with Mine Safety and Health Administration (MSHA). After consultation with this agency (James Kirk, Price Field Office, MSHA), we are in agreement that trying to remove the machinery from the current place would be a major safety concern and any new extraction plans to MSHA would not meet safety standards. The sandstone channel rock was weighing heavily on the shields and I noted that several shields were at their load capacity. The sandstone was braking at the face and around the shields and would fall in as the shields were moved. The safety concerns of the longwall were the overriding factor in the decision to leave the machine in the mine but was coupled with the economics and practicality of the situation.

Cyprus formally requested to leave the longwall in place by letter to the BLM Area Manager dated September 22, 1997. A copy was also sent to the Manti-LaSal National Forest. The Forest Service responded back to Cyprus dated October 28, 1997, with concerns of leaving the longwall underground. Cyprus has since provide further information with two letters dated October 29 and December 1, 1997 and faxed information dated October 6, 1997.

Cyprus' situation is unique and one that could not be avoided. Situations arose that could not be controlled or planned. Cyprus considered other options but the conditions (broken shear, bad roof conditions, no move preparation) forced the issue. Cyprus supplied the information

and mitigated as many aspects as possible in leaving the longwall underground. These specific abandonment measures by Cyprus will be looked at next in this report. However, it is my opinion that unforeseen events and conditions beyond any control have dictated that the longwall could not be removed under any practical or safe conditions and would have to be abandoned in place. In so doing it is also my opinion that no adverse impacts to the environment (ground or surface water quality and quantity) will occur in this case, the reasons follow.

Leaving longwall machinery underground raises some environmental concerns. Most of the concern is the potential to contaminate the ground water. If this being the case, would this in turn contaminate surface waters fed by ground water?

Issue # 1 - The longwall equipment contains some hazardous materials, namely fluids, oils and grease.- In Cyprus's case, these fluids were removed and drained. In the initial request, Cyprus committed to remove and drain all hazardous fluids. This was followed up with a listing of the fluids in the longwall machine and the Material Safety Data Sheets for the longwall shield hydraulic emulsion fluid. The emulsion fluid used was biodegradable and completely non toxic. Cyprus ran water through the shields for the last three days to flush the system of the emulsion fluid. Finally, an independent inspector (Joy Manufacturing rep.) verified that the fluids were drained as detailed in his report. In the Cyprus case, the longwall is devoid of any hazardous fluids or wastes left in the machine. Any residual grease and oils will be absorbed into the surrounding coal seam as coal is a hydrocarbon also and would act as a filter. Water contamination is not applicable in this specific case. The longwall is far up dip and away from any potential of being under water. A report from Hansen, Allen and Luce (report attached) came up to the same conclusion that contamination of the ground water will not happen. For future events, such as the Cyprus longwall, longwall machinery contains hazardous fluids, usually in the form of petroleum based fluids. However, if properly drained, little risk remains for hazardous fluids contaminating ground water.

Issue # 2 - The longwall machine may contain metals that in a free state could be classified as toxic which could degrade into the ground water. - We have contacted the University of Utah Metallurgical Department (Dr. Free and Dr. Miller) and they have concluded that deterioration of the metal is not a concern. The metals on a longwall (in fact most mining equipment) are high tensile metal alloys which are made to resist corrosion. Normal rates of corrosion are extremely slow, in the magnitude of 1000's of years. The exact metallurgy of the components of the longwall are trade secrets. However, the only potentially hazardous non-iron metal of any significant amount is chromium. According to the metallurgists, to have chromium leach out of the metal alloy, one would have to have the metal ground up to particle size to have a chemical release. Also, there needs to be a set environment to facilitate rapid corrosion (high humidity, acidic water, etc.) which is not the case at the Starpoint Mine. All the experts were in agreement that the situation at the Starpoint Mine could not contaminate the ground water from the metals in the longwall. The consultant report came to the same conclusion. They are also of the opinion that Utah coal mines in general could not have a situation where corrosion of metals from left equipment underground would be at a rate to contaminate the ground water.

Issue # 3. - Leaving the longwall underground would constitute a solid waste disposal site. -

After discussions with the EPA (Janice Pearson, Denver Region) and Utah Department of Environmental Quality (Ralph Bohn, DEQ, Salt Lake City), both agencies agreed that leaving incidental equipment and machinery underground would not constitute a solid waste disposal site unless materials were intended to be disposed there or if materials were hauled into the mine for disposal. EPA classifies old mining equipment as scrap and not solid waste (verbal conversation with Ms. Pearson, EPA, Denver). Though the regulations and definitions are vague, both agencies agreed that they would be hard pressed to permit an underground mine as a solid waste disposal site unless materials were purposely hauled into the mine to be disposed of. The problem I see that our agencies face is the vagueness of our definitions of terms. Large quantities of materials are left in underground mines, a large part being roof support materials such as roof bolts, steel arches, metal overcasts, etc. It was suggested that we could differentiate between structures left in the mine for support and equipment. Equipment would have to be removed but structures that are part of the mine could remain. This is not workable or defensible in my opinion. The whole reason for not leaving items underground is to prevent those items from contaminating the ground water. But if we say that steel roof bolts are ok it leave but steel longwall shields (with fluids removed) are not ok, we are being arbitrary and inconsistent since both items are made of essentially the same material. How can we make a decision which items can or cannot be left in the mine when those items are made of the same material and the purpose is to prevent contamination of the water from that material or metal? The amount of metal in all mining equipment in a mine would still only be a small percentage of the total metal left in the form of roof support materials. This problem seems to make classifying underground mining sites as solid waste disposal sites out of the question too. Every mine leaves large quantities of steel underground in the form of roof support materials. Again to make a determination that steel left for roof support is not a solid waste and steel equipment not used for roof support is a solid waste is indefensible. The two agencies in charge of solid waste disposal sites voiced their position that they could not regulate an underground mine as a disposal site unless there was clear use and intent to haul and dispose of solid waste underground.

Issue # 4. Leaving equipment underground is contrary to lease stipulations. The lease terms in my opinion, refer primarily to outside structures and equipment. Again, to define "support facilities, structures, equipment, and similar developments" as materials that should not be left underground would include all the items used for roof support and are used in the process of caving as the coal is mined out. We must go back to the purpose for not wanting items left underground, which is to prevent contamination of the ground water. It is unworkable to require removal of all underground items under the authority of lease stipulations as the terms in the stipulations are undefined and vague.

What should be the requirements of the Federal government? For common sense, no one wants things left underground for no reason. Casual disposing of materials in an underground mine could be a solid waste disposal site and could be regulated. A policy to not leave removable items underground without reason should be adopted. However, in the Cyprus case, overwhelming reasons exist. Laws to prevent the contamination of ground water are in place. If certain precautions are taken, materials and equipment used in mining can be made nearly inert to comply with the law. I do feel that the lease terms are vague and need to be reworded. However, I'm not so sure that the lease is where we want to address compliance with hazardous wastes. Those fall under an existing agency and duplication is not necessary.

Regulation of clean water and waste disposal laws, in my opinion, is rightly vested in the agency that has the authority to grant mining, the Utah Division of Oil Gas and Mining. To allow other agencies such as the BLM and the Forest Service to regulate disposal through lease terms is a duplication of regulations and counter-productive. To further address the situation via the NEPA process is also counter-productive and questionable if necessary. This is my recommendation, but is beyond this level of management.

Under the adverse conditions Cyprus found itself, they made a reasonable decision to leave the longwall underground. It is doubtful that anyone could have ordered the removal of the longwall, even right after the shear broke, due to safety concerns. But this incident raises questions. Can the agencies respond in a timely matter to make decisions that could be very time dependent? Coal operators need to be made aware of our policy, if we have one or agree on a new policy, and that leaving items that are normally not left in the mine can only be left for good cause and that any hazardous materials such as petroleum fluids be removed. This new awareness should be stressed to the operators but the agencies must have legal and united consensus on this and also a program to administer. Compliance checks will be difficult as only the BLM has underground inspectors with limited time and means to inspect.

My final conclusions are that materials that are not normally left in coal mines should be removed. Exceptions can be granted for reason and if normal hazardous materials are removed. Most solid materials in the mine under most conditions will not jeopardize the ground water regime. Finally, management of all agencies need to check their authorities and come to consensus for a workable and non-duplicate program that can be enforced and is very timely.

This is my report on the situation. I am currently on a team with DOGM and Forest Service to come to look into this problem. This report will be used for some basis for the team but is not a final recommendation from the team.

Stephen W Falk

Enclosures:

1. MSDS sheets for longwall emulsion
2. Cyprus submissions
3. Hansen Allen and Luce report