

Paris Canyon Mine
Preliminary Assessment Report Addendum
December 2009

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Bear Lake County
State of Idaho



Department of Environmental Quality

August 2008

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1. Introduction

Preliminary Assessments (PA) of the Paris Canyon Mine were conducted in 2002 (DEQ, 2004a) and November 2007 (DEQ, 2007) to ensure all historic mining sites within the Idaho Phosphate Mining Resource Area have been inspected and evaluated in accordance with the goals and objectives outlined in the *Area Wide Risk Management Plan* (DEQ, 2004b). This addendum to the November 2007 report has been prepared to present the findings of the June 2008 site visit and to refine reclamation recommendations made by the Idaho Department of Environmental Quality (DEQ) in 2007.

3.4. Inspection Findings

The DEQ inspection team visited the Paris Canyon Mine site on June 3, 2008 as a follow-up to the November 2007 PA (DEQ, 2007). No samples were collected during the 2008 site visit. Visual inspection of the site confirmed the 2002 interagency team findings. The south mine portal/adit is partially covered with timbers and brickwork; however, remains accessible to human entry. Concrete foundations, pits, brickwork, and other structures from the mill and tram system are abundant just below the south portal. Many of these structures are obscured from view when approaching the site from Paris Canyon road (down slope) and while traversing the mill site due to the abundant vegetation that has reestablished at the mill site. Many of these structures, along with the south adit, pose physical hazards to anyone entering the site. See photographs 1 through 3 in the Appendix.

The main waste rock dump is located just east of the mill site. Figure 1 shows the location and approximate size of major mine features. The dump is composed of a mixture of waste rock and terminates within a few feet of Paris Creek. The main waste dump covers approximately ½ acre and contains less than 5,000 cubic yards (estimated) of waste rock. The vegetation is very lush on the waste dump and it does not appear likely that this area produces and delivers significant volumes of sediment to Paris Creek (Photo 4).

At the mill site and main waste dump area solid waste such as farm chemical containers, a refrigerator, tree limbs, car batteries, and other house hold items are being illegally dumped (Photos 5 and 6).

Two smaller black shale waste dumps are located approximately 300 feet north of the mill site. The larger of the two waste dumps is located on the south side of Paris Canyon Road, is cut by and eroding into the road. It is approximately 190 feet long, 50 feet wide and 20 feet high and contains less than 3,000 cubic yards (estimated) of waste rock. The north black shale waste dump is located on the north side of the Paris Canyon Road, is conical in shape, approximately 2,600 square feet in area, 15 feet tall, and contains less than 450 cubic yards (estimated) of waste rock. Vegetation is sparse on the south dump and is nearly nonexistent on the north dump (Photographs 7 through 10).

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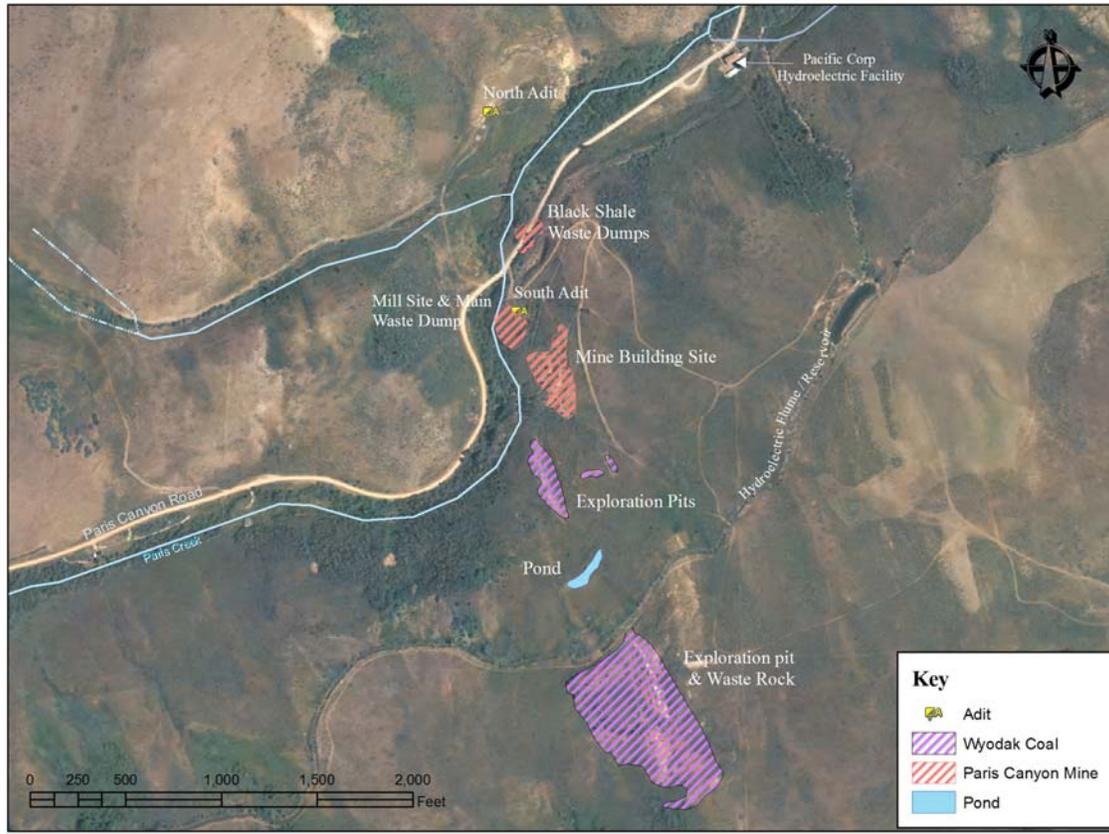


Figure 1. Paris Canyon Mine Site and Wyodak Coal Exploration Pits.

The north adit is located 0.2 mile north of the south adit and mill site, approximately 100 yards up slope from Paris Canyon Creek. The adit is partially collapsed, yet remains easily accessible for human entry. Many of the timbers remain in place at the adit entrance. Concrete foundations, wood, and iron workings are found scattered about the two terraces below the adit. A small black shale waste dump is located about 50 feet northeast of the adit (Photos 11 and 12).

Wyodak Coal and Manufacturing Company purchased or leased approximately 2000 acres of land in 1942 in the Paris-Bloomington area, under contract with Metals Reserve Company, to explore, develop, and operate a vanadium mine in the Phosphoria Formation. As part of the vanadium exploration, Wyodak excavated exploration trenches/pits just south of the Paris Canyon Mine. These trenches/pits were left open and were evaluated as part of this inspection effort.

There is one large (approximately ½ acre) and two small pits just south of the main Waste Dump (Photo 13). Although these midlevel pits break up the landscape, native vegetation appears to have re-colonized and stabilized most of the slopes. Approximately 400 feet south of the midlevel pits is what appears to be a “cat cut” or small pit that was cut parallel to the contours across the ore deposit and water bearing structure (Photo 14). This cat cut was more likely developed as a cattle tank than as a genuine exploration. A surface water sample collected from this pond in

2002 (DEQ, 2004a) had only trace amounts of nickel (0.0013 mg/L), vanadium (0.00089 mg/L), and zinc (0.008). Cadmium, chromium, cobalt, copper, and selenium analysis all resulted in non-detections.

The upper pit is 400 feet south of the pond and on the opposite side of the Pacific Corp hydroelectric flume (Photos 15 through 17). The upper pit walls were sparsely vegetated with significant indications of rapid erosion present, which in turn are indications that there is a significant release of mine wastes to the Pacific Corp flume, and thence down to Paris Creek. However, a sample of pit soils collected and analyzed during the 2002 investigation (DEQ, 2004a) resulted in metal concentrations below the Area Wide action levels.

5.5. Recommendations

The 2002 interagency inspection team and the 2007 PA recommended:

- Observation of erosion from the waste rock dumps to determine the extent of this material, the degree of impact to Paris Canyon road, and whether waste rock has reached Paris Creek.
- Re-contouring and re-vegetating those waste rock dumps where natural vegetation has not established itself and removing waste rock from Paris Canyon road to prevent the spread of potentially contaminated material.
- Continue sampling of Paris Creek adjacent to and down-gradient of the Paris Canyon Mine site to determine potential impacts.

After a review of the prior recommendations and the site visit DEQ has refined the above recommendations to include:

- Restrict public access to the south adit and mill site area to prevent illegal dumping.
- No excavation or foundation removal activities should be performed in the mill site area as removal of established vegetation and mill foundations is likely to result in increased short term erosion of mine wastes to Paris Creek.
- Relocate the black shale waste dumps to the bench south of Paris Canyon Road to prevent the black waste shale from migrating into the road and Paris Creek and limit public access.
- Cap the black shale waste with local soil and plant with native vegetation, once the waste rock has been moved.
- No reclamation work on the midlevel Wyodak exploration pits or pond.
- Regrade and re-vegetate the interior of the southern most Wyodak exploration pit and construct a series of armored retention basins (at least two) down the length of the pit to trap and retain sediment.

References:

- Idaho Department of Environmental Quality, 2004a. Orphan Mine Site Preliminary Assessment Screening Report. Prepared jointly by DEQ, Idaho Department of Lands, U.S. Bureau of Land Management, and the U.S. Forest Service. Available URL: http://giscenter-ims.isu.edu/SISP/Area_Wide_Reports.html
- Idaho Department of Environmental Quality, 2004b. Area Wide Risk Management Plan: Removal Action Goals And Objectives, And Action Levels For Addressing Releases And Impacts From Historic Phosphate Mining Operations In Southeast Idaho. Available URL: http://giscenter-ims.isu.edu/SISP/Area_Wide_Reports.html
- Idaho Department of Environmental Quality, 2007. Paris Canyon Mine Preliminary Assessment Report, Bear Lake County, State of Idaho. Submitted to: U.S. Environmental Protection Agency, Region 10.

Attachment

**Paris Mine and Mill Site
Conditions and Pictures
June 3, 2008**



Photos 1 & 2: The only significant remnants of the mill facilities and southern mine porthole are timbers and concrete foundations. The lush vegetative cover hides many of the physical hazards such as pits inside the facility footprint. There are no indications that significant production and delivery occurs from the mill site to Paris Creek from this location.



Photo 3: Concrete foundations of Paris Mill site probably contribute (somewhat) to the stability of the site. Removal of these structures, however, would likely result in significant disturbance of the soils, and release of residual mine or mill waste. Therefore, removal of the foundations and vegetation not recommended.



Photo 4: The main Waste Dump overlooks the Paris Canyon road and the feedlot which is north across the county road from the mill site. The lower Waste Dump is really a collage of small waste dumps and pits (DEQ 2004). The main waste dump covers approximately 1/2 acre and contains less than 5,000 cubic yards (estimated) of waste rock. The vegetation is very lush on these waste dumps and it does not appear likely that this area produces and delivers significant volumes of sediment to Paris creek. DEQ does not recommend any reclamation work be conducted on this area.



Photo 5: Immediately south of the County Road is the Paris Millsite. The Millsite is overgrown and although it terminates in the Paris Creek, the creek banks in this area are stable and do not need any additional work. There are however, numerous pieces of solid wastes including refrigerators, car batteries, agricultural chemical containers and other trash.



Photo 6: Agricultural chemical container dumped at mill site. Any remedial actions should consider what if anything can be done to restrict public access that results in illegal dumping at the site. Pacific Corp. may support construction of a locked gate adjacent to the county road.



Photos 7 & 8: The south black shale waste dump has some vegetation growing on the top and at locations on the slope. The slope erodes in to the road and is used for off road vehicle recreation. The toe of the dump runs for approximately 190 feet along the broken in places by small stands of trees and brush. It was estimated that the dump contains less than 3,000 cubic yards of waste rock.



Photos 9 and 10: The north black shale waste dump is fenced and surrounded by a thick aspen grove, limiting public access and preventing disturbance by off-road vehicles. Very little to vegetation is found on this waste dump. Paris Creek is located just a few feet north of the dump.



Photos 11 &12: Looking northeast at the north adit of the Paris Canyon Mine. The fenced area currently has livestock. The north adit is partially collapsed and near the left edge of the photo. There is a small waste rock pile in the center of the photo 10. This was the only waste rock observed at this location. Approximate size of the waste rock is 20 to 30 yards, with no signs of the waste rock eroding into the creek bed.



Photo 13: There is one large (approximately 1/2 acre) and two small pits just south of the lower Waste Dump. Although these midlevel pits break up the landscape, native vegetation appears to have recolonized and stabilized most of the slopes. It seems that if an effort was made to regrade these pits and their small waste dumps, the land disturbance would most likely cause a more significant release of mine waste to Paris Creek than presently occurs. IDEQ is recommending no reclamation work for these pits and small waste dumps.



Photo 14: Approximately 400 feet south of the midlevel pits is what appears to be a “cat cut” or small pit the was cut parallel to the contours across the ore deposit and water bearing structure. This cat cut seems like it is more likely that it was developed as a cattle tank than as a genuine exploration. If ground water recharge drove reclamation efforts at the Paris Mine and Mill site this is a location that might bear some consideration. However, it is not likely that this feature could be too much of a driving force for ground water contamination. IDEQ is not recommending that any reclamation or remedial actions are applied to this feature.



Photo 15: The flume (left edge of photo) for Pacific Corp's hydro electric plant runs parallel to the contours just beneath the Upper Pit and Waste Dumps. The pit and waste dumps cover an area approximately 2 acres in size, but collect and funnel the surface waters from a much larger area into the flume.



Photo 16: Looking southward from the "daylight" of the Upper Pit, there appeared to be fairly well vegetated slopes of the pit walls and dump slopes, surrounding a somewhat sparsely vegetated pit floor.



Photo 17: From the up hill boundary of the pit, one looks down the length of the pit towards the “daylight”. From this point, it was noted that the pit walls and dump slopes were not lushly vegetated. On the contrary there are significant indications of rapid erosion present, which in turn are indications that there is a significant release of mine wastes to the Pacific Corp flume, and thence down to Paris Creek. DEQ is recommending that a concerted effort is made to regrade and re-vegetate the interior of the pit, and to construct a series of armored retention basins (at least two) down the length of the pit to trap and retain sediment.