MEETING SUMMARY
New World Annual Technical Meeting
New World Winter Public Meeting
New World Mining District Response And Restoration Project
Best Western GranTree Inn, Bozeman, Montana
January 23 and 24, 2002

The USDA Forest Service hosted the annual New World Mining District Response and Restoration Project technical meeting on January 23, 2002, and the annual winter public meeting on January 24. The purpose of the technical and public meeting was to summarize data collected in 2001, to discuss the response action proposed for the McLaren Pit, to discuss the evaluation of potential response actions that should be evaluated for the Glengarry/Como Basin, and to discuss proposed activities for 2002.

Attendees at the technical meeting included representatives of the USDA Forest Service - Gallatin and Custer National Forests, USDA Office of the General Council, USEPA, US Fish and Wildlife Service, Montana Department of Environmental Quality, USGS, National Park Service, and Maxim Technologies. For the public meeting, representatives from the Beartooth Alliance, Greater Yellowstone Coalition, Montana Wilderness Association, Center for Science in Public Participation, Park County Environmental Council, University of California Santa Barbara, and Hallin and Associates attended, along with many of the agency personnel that attended the technical meeting.

The agendas and attendance lists are attached. Highlights of the meetings are summarized below.

TECHNICAL MEETING

Opening Remarks and Project Update

Mary Beth Marks provided the opening remarks and updated the group on project status. There were no questions, but one suggestion to add the project contact list to the web site.

McLaren Pit Design Concepts

Bill Bucher summarized the current design concepts for construction of a geomembrane cap on the consolidated McLaren Pit wastes. Questions and discussion that were brought up during the presentation follow:

- There was a question from John Koerth on the realignment of the county road and whether the county road would be placed on top of the capped wastes. The answer was yes. There was another question on the roadbed thickness over the cap and whether the county was involved with the road realignment. The answer given was the roadbed would be thicker than the average three feet used for the cap; the answer to the second question was the county is being consulted on the road design.

- Nancy Curriden asked several questions on what wastes would be consolidated and whether any consideration was given to partial removal of the multicolor dump and spoils to another location. The answer given was that the same protectiveness would be provided by consolidation and capping on-site as removal to another site and capping. A separate partial removal alternative for the multicolor dump was considered for the Selective Source Response Action but was dropped because the public and

others felt it would be more efficient to deal with the McLaren Pit and other like wastes in the Daisy Creek drainage in the same manner and location.

- Pete Penoyer asked whether there was a reason to believe that the coefficient of friction between the geocomposite and geomembrane would change over time. Bill Bucher said no.

- Mike Wireman asked a question whether the highwall should be stabilized. The general consensus was that it was fairly stable in its current condition and the only real option for reducing the highwall was blasting, which didn't gain much in terms of stability.

- There was a question on the routing of drainage off the cap. The answer given was that the drainage net feeds into the benches on the cap and is then routed to the edges of the cap. The collected drainage is split up into several existing drainages downgradient of the pit.

- There were several questions on the long-term performance of the cap and whether slope creep due to freeze-thaw or depth of frost were considered for the design. Also, whether drainage pipes might freeze. The answer given was that frost depth on a worse-case basis was thought to be about three feet; by oversizing drainage features, the cap should be dry with the onset of winter and therefore, freeze-thaw should not be an issue. The slope stability evaluation was done for saturated conditions and showed the cap to be stable.

- Pete Penoyer wondered if meteoric water is susceptible to becoming acid, and whether there might be a cheap way to add alkalinity to surface water draining the capped area. This option isn't currently being evaluated but, adding alkalinity may be considered if monitoring indicates there is a problem with acid drainage of surface water.

- The question was asked whether an operations and maintenance budget would be in place following implementation of the remedy. The answer was we recognize the need for this budget and are working through the details.

- There was some discussion on the potential for groundwater to rise from bedrock into the waste. The group acknowledged that the potential was there, but that infiltration of precipitation was a larger component of the seasonal saturation of waste. David Nimick did not think the cap would preclude saturation of the waste. Pete Penoyer asked whether we had a good handle on the pieziometric surface in the Daisy Creek headwaters. Mike Wireman thought that we did have a good idea and that there is one shown in the Start report.

- There was some concern by David Nimick that we had missed the plume in the wells drilled below the pit, and that it would be important to find the plume below the pit if it exists. The group felt that the piezometers that are to be installed below the pit would serve this purpose.

Como Raise Rehabilitation

Henry Bogert gave a summary of the work done in the Como Raise in 2001 and the results of the water quality sampling in the Glengarry underground. Questions and discussion that were brought up during the presentation follow:

- Mike Wireman asked about water movement out of the Meagher Formation. Pump tests in the

Meagher show low permeability and indicate that the Meagher is tight.

Glengarry/Como EE/CA

Allan Kirk presented a summary of our current knowledge of the hydrogeologic relationships in the Glengarry/Como/Upper Fisher Creek area, and gave a brief outline of what will be included in the Engineering Evaluation for upper Fisher Creek. Questions and discussion that were brought up during the presentation follow:

- There was a question on the Como Basin and whether the material there should be considered waste rock. Allan said it was material disturbed by mining activities, mainly road building and exploration, but not truly a waste rock. The disturbed material will be considered in the EE/CA.

- Mike Wireman wondered what would be done with the Spalding discharge. The answer given was that the Spalding discharge now flows into a percolation basin and discharges below the surface. This temporary closure will be reevaluated in the Adit Discharge EE/CA in 2004 and either a response action will be performed or the percolation basin will be considered a permanent closure.
- A question was asked whether the Spalding was part of the wetland replacement done in 2001. The answer given was no, the Rommel tailings was a stream replacement, but no wetlands were replaced as part of the Selective Source Response Action.

- A rhetorical question was asked by David Nimick on how much the exploratory drilling in the Como Basin increased permeability in the Meagher.

Glengarry Closure Alternatives

Henry Bogert presented seven options that will be considered in the EE/CA for closure of the Glengarry workings. The seven options could be done singly or in concert with one or more options. The total estimated cost to implement all the options is about $2.5 million. Questions and discussion that were brought up during the presentation follow:

- Pete Penoyer asked how you ensure there is communication between grout curtain holes. Henry answered that you monitor the raise for visible signs of grout. Secondary or tertiary holes may be needed to meet goal of cementing the colluvium around the raise.

- Mike Wireman asked a question on whether there was anything more we could do to investigate conditions in the short raise above the bulkhead. Initial speculation was that the first raise beyond the "Y" in the Glengarry was connected to the second raise by horizontal workings. The rehabilitation work in the second raise proved that there was no connection within at least the top 215 feet of the second raise. A. Kirk and H. Bogert climbed a short distance up into the orepasses to visually determine the vertical extent of the first raise. Bulkheads of six to eight inch diameter logs were seen approximately 40 feet above each of the ore chutes. Due to debris and the absence of ladders, the center compartment could not be entered. Pony Mining Contractors was contracted to remove debris and install temporary ladders up the middle compartment. The purpose of this work was to determine whether the top of the raise was open or if it extended beyond the 50 feet shown on the 1930's map. Debris were removed, and aluminum ladders were nailed in place extending approximately 25 feet up the center compartment. From there a round timber bulkhead was seen at the same elevation as the other two bulkheads in the adjacent compartments. Removing the bulkheads to determine what was

above them or to identify the source of the water inflow was considered too dangerous to pursue. Henry Bogert believes based on available evidence that the short raise does not extend an appreciable distance above the bulkhead.

- On the plugging option for the Glengarry tunnel, several questions were asked. Could the plug handle the head that will build up? Answer, yes, as the head would likely be less than 100 psi and plugs are able to withstand heads of greater than several thousand psi. Are the plugs concrete? Answer, they can be made with several types of materials including concrete and bentonite. Is there a problem with acid water and its potential effect on concrete? Answer, yes, which is why we may want to use a bentonite plug.

- For the backfill option, how much of the Glengarry dump would be needed and, do you wait for compressive strength in the cement to reach a certain point before you put in bentonite? Answer, about 28% of the material in the Glengarry Dump is suitable for use as backfill, and would allow filling 1200 feet of tunnel. On waiting on the concrete's compressive strength, this would be considered during design process.

- John Koerth wondered whether you would want to backfill the entire workings. Henry responded that once you backfill the dripping intrusive portion of the tunnel, the remainder of the workings (about 900 feet) is fairly dry and stable.

- What is the likely sequencing of a closure? Answer, you could grout the collar first, grout the 1050 fracture, and grout the short raise in one season. The second season the raise would be filled and the tunnel backfilled. A two-season phase-in allows you to determine the success of the first phase of work.

- Mike Wireman commented that there is a huge technology transfer opportunity if we proceed with plugging and backfilling the Glengarry workings.

- Henry Bogert wondered whether the side adit adjacent to the Glengarry Adit (F-8) should be included in the closure. The general consensus was that it should.

Proposed 2002 Activities

Mike Cormier gave a presentation on proposed 2002 activities. Questions and discussion that were brought up during the presentation follow:

- A question was asked about how many people attend the public meetings in Cooke. The answer given was 30; 5 to 6 people attend meetings held elsewhere (i.e. Gardiner, Mammoth, Bozeman).

- For characterizing wetlands, streambeds, and sediments, we should involve interested members in a technical group to assist in planning this activity.

- On the temporary standards review, John Koerth suggested that we rerun the statistics on the water quality data to determine if the temporary standards are still accurate. He also said that the report that goes to DEQ first goes to the Water Pollution Control Advisory Committee.

- Need to add monitoring of the repository site to surface water and groundwater monitoring task. Also,

the long-term monitoring plan should be reevaluated to determine if it still meets project objectives and consider which sites to drop and which sites to add.

- Monitoring wells that will no longer be needed should be plugged and abandoned.

- Natural resource damage (NRD) activities should be added to the project schedule. Also, the language in the Consent Decree needs to be reviewed from a legal perspective to see if there are any restrictions on NRD work (i.e. can NRD work be done on non-District Property).

- Scott Shuler has some ideas on how to assess sediment. He also stated that macroinvertebrate sampling could wait until 2004 before monitoring should resume.

- There was a question for John Koerth on the status of TMDL. He said that all the streams in the District were 303d listed and that a public draft of the Restoration Plan for the Cooke City area is now available for comment.

- Several people brought up the idea that monitoring piezometers should be installed in the Como Basin in 2002 to determine water levels in the shallow colluvium. This task will be added to the tasks proposed in the draft 2002 Work Plan. Allan Kirk added that historic drill data available from exploration boreholes could be used to identify the thickness of colluvium in the basin.

- John Koerth suggested that bench testing be done on lime amended Como Basin wastes to see if arsenic would be a concern in leachate. He said perhaps something as simple as bottle rolls could be used for this testing.

- Mike Wireman suggested that formal criteria be developed for monitoring the McLaren Pit cap and determining its success. This will be an item for discussion during the next Hydrogeology Group meeting. This meeting has not yet been scheduled, but a one day meeting will likely be proposed to convene during the 2002 field season.

PUBLIC MEETING

The same agenda items and presentations were given to the public on Thursday as that given to the technical group on Wednesday. The only change between the content at the two meetings was that presentations were abbreviated. Questions and discussion that were brought up during the public meeting follow:

- There was a question on the financial status of the IT payment. Frank Ehernberger provided status.

- A suggestion was made that the avalanche folks be consulted about the McLaren Pit county road realignment. Don Bachman was concerned about snowmobile use below the highwall. Allan Kirk replied that the road completely drifts over and the main snowmobile route from Daisy Pass travels down into the valley and not along the road.

- There was a question on the Spalding and Tredennic adit closures, and whether these were temporary or permanent. The answer given was the Spalding and Tredennic discharges now flow into percolation basins and discharge below the surface. These are considered temporary closures that will be

reevaluated in the Adit Discharge EE/CA in 2004; either a response action will be performed at the sites or the percolation basins will be considered permanent closures.

- There was a question on the capacity of the repository site. A rough estimate of 80,000 cubic meters was given for the total capacity, with about 55,000 cubic meters remaining capacity.

- A suggestion was made to add revegetation monitoring to the 2002 activities. Also, Don Bachman wondered if Mike Amacher was involved in revegetation planning. The answer was that the prescriptions for revegetation outlined by Dr. Ray Brown and Mike Amacher were being followed for all revegetation planning.

- On the Como raise reopening, a question was asked about whether the excavation that exposed the raise was in undisturbed material. The answer was yes.

- A question arose on how much backfill would be needed to fill the raise. An estimate of 1,100 cubic yards was given.

- Mike Whittington indicated that it would be neat to preserve the buildings at the Gold Dust. Allan Kirk said that the portal building is partially collapsed. There was also a question on the length of the Gold Dust workings. The answer given was about 2,500 feet.

- Mike Whittington suggested that we make available to the general public an updated map of the McLaren Pit design showing some of the details presented at the meeting.

- Don Bachman had a question on the EIS process for the road system analysis. Mike Whittington emphasized that it would be good if the Forest Service could involve the public this summer when the seasonal residents are in town.

- Don Bachman asked a question on the staging area for the McLaren Pit. The answer given was the repository site would provide some staging and the rest would be done at the McLaren.

- A general question was asked on what the cost would be to cleanup all the sites on District Property. The following estimate was given:

Selective Source Response Action --	$2.2 million
McLaren Pit Response Action --	$4.2 million
Glengarry Closure --	$2.5 million
Como Basin Closure --	$2.0 million
Disposal of remaining Dumps --	$2.0 million
TOTAL	$12.9 million

  Remaining funds could be used for adit discharges, NRD, Miller Creek, and other responses at the forenamed sites.

- Don Bachman requested that the communication schedule be updated in the 2002 Work Plan. Mike Whittington requested that the summer meeting be held in Cooke City in late June. Both agreed that there will be a higher level of interest now that the cleanup work is going forward.

- There was a question on the public access over Daisy Pass during the McLaren work. Mary Beth answered that they would be considering options with the public in mind. Mike Whittington said that as long as the Lulu Pass road is open and allows traffic to the Lake Abundance road, the public may not mind if the road is closed at Daisy Pass. He also said that it would be a good idea to plow the drifts along the Lulu Pass road early in the year so that the road has a chance to dry out before the public uses the road.

- Don Bachman wanted to pass along to IT that they did a great job in accommodating local traffic last summer.

AGENDA
AGENCY TECHNICAL MEETING
New World Response And Restoration Project
2001 Assessment Results and 2002 Proposed Activities
January 23, 2002

Hylite Room, Best Western GranTree
1325 N. 7th Ave
Bozeman, Montana

WEDNESDAY, JANUARY 23		
10:00 - 10:10	Opening Comments/Meeting Objectives	Mary Beth Marks On-Scene Coordinator - USFS
10:10 - 10:25	Update on Project Status	Mary Beth Marks On-Scene Coordinator - USFS
10:25 - 11:15	McLaren Pit Design Concepts	Bill Bucher Maxim Technologies
11:15 – 11:30	McLaren Pit Monitoring Program	Bill Bucher Maxim Technologies
11:30 – 12:30	Lunch Break	On Your Own
12:30 – 12:50	Glengarry 2001 Update Como Raise Reopening and Water Quality Results	Henry Bogert Maxim Technologies
12:50 – 1:50	Glengarry and Como Basin EE/CA	Allan Kirk Maxim Technologies
1:50 - 2:20	Glengarry Closure Alternative	Henry Bogert Maxim Technologies
2:20 – 2:35	Break	
2:35 - 3:05	2002 Work Plan Activities	Michael Cormier Maxim Technologies
3:05 – 4:45	Open Discussion	Group Discussion
4:45 – 5:00	Closing Remarks	Mary Beth Marks On-Scene Coordinator - USFS

AGENDA
PUBLIC MEETING
New World Response And Restoration Project
2001 Assessment Results and 2002 Proposed Activities
January 24, 2002

Hylite Room, Best Western GranTree
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Bozeman, Montana

THURSDAY, JANUARY 24		
8:30 - 8:40	Opening Comments	Mary Beth Marks On-Scene Coordinator - USFS
8:40 - 9:10	Update on Project Status	Mary Beth Marks On-Scene Coordinator - USFS
9:10 - 9:35	McLaren Pit Design Concepts	Michael Cormier Maxim Technologies
9:35 – 10:00	Glengarry 2001 Update Como Raise Reopening and Water Quality Results	Allan Kirk and Henry Bogert Maxim Technologies
10:00 – 10:15	Break	Bring Your Own Coffee!!
10:15 – 10:45	Glengarry Closure Alternatives	Allan Kirk and Henry Bogert Maxim Technologies
10:45 - 11:00	2002 Work Plan Activities	Michael Cormier Maxim Technologies
11:00 – 11:15	Financial Status	Mary Beth Marks On-Scene Coordinator - USFS
11:15 – 11:45	Question and Answer Session	Mary Beth Marks On-Scene Coordinator - USFS
11:45 – 12:00	Closing Remarks	Mary Beth Marks On-Scene Coordinator - USFS

New World Technical Meeting

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New World Technical Meeting

January 23, 2002

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DATE 1/23/2012

JOB TITLE New World Response & Restoration JOB NUMBER

SUBJECT January Technical Meeting

SHEET 1

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New World Public Meeting
Bozeman, MT

January 24, 2002
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New World Public Meeting
Bozeman, MT

January 24, 2002

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