



Giant Mine Remediation Project

Giant Mine Working Group

10 July 2014 Meeting Summary

26 August 2014



Aboriginal Affairs and
Northern Development Canada

Affaires autochtones et
Développement du Nord Canada



Giant Mine Remediation Project

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1. INTRODUCTION

The Giant Mine Remediation Project (GMRP) Team organized a meeting of the Giant Mine Working Group (GMWG, or simply WG). The meeting was held in the 6th floor Boardroom of Scotia Centre in Yellowknife, NT, and was scheduled from 1:00 pm to 4:00 pm MT on July 10, 2014. The actual meeting time was from 1:00 pm to 4:20 pm MT.

Meeting participants included members of the GMRP team, as well as representatives from the Interested Parties.

Giant Mine Remediation Project Team	Team Member
Aboriginal Affairs and Northern Development Canada (AANDC)	Jane Amphlett Craig Wells (Senior Project Director; on telephone) Katherine Ross (on telephone)
Public Works and Government Services Canada (PWGSC)	Linda Pickett
Government of the Northwest Territories – Environment and Natural Resources (GNWT-ENR)	Erika Nyysönen
GMRP Interested Party	Representative
Environment Canada (EC)	Amy Sparks
City of Yellowknife (City)	Karin Kronstal
Alternatives North (AN)	Kevin O’Reilly Gordon Hamre
North Slave Metis Alliance (NSMA)	Matt Hoover
Yellowknives Dene First Nation (YKDFN)	Todd Slack Joanne Black
Other	Representative
Health Canada (HC)	Asish Mohapatra (on telephone) Ken Law (Environmental Analyst; on telephone)
Bill Slater Environmental Consulting	Bill Slater

*Notes were taken by David Finch, DPRA.



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OBJECTIVES

The intent of this meeting:

- To provide an update on site activities.
- To provide a report on spills on site.
- To receive an update from the City of Yellowknife on Giant Mine related activity.
- To discuss with Bill Slater the Technical Advisor terms of reference and work plan.

MEETING MATERIALS (PROVIDED IN APPENDICES)

- None this month.

PERSONNEL CHANGES

Jane Amphlett (AANDC) introduced Craig Wells (AANDC), the new Senior Project Director for GMRP. Craig is based in the national capital region, and formerly was the project manager at the Goose Bay Remediation Project. Craig replaces Bill Mitchell in the Senior Project Manager role, and also Mike Nahir who was acting following Bill's departure. Mike Nahir has since moved to the Major Project Office (MPO) with AANDC, but he will continue to be involved on GMRP as a technical advisor. Joanna Ankersmit is now the Executive Director of the AANDC Contaminated Sites Program. Issues formerly brought to Joanna can now be brought to Craig, though she too will continue to be involved in the governance of the GMRP at a higher level. Jane indicated that while the names may have changed, the org chart shared in May was still accurate in terms of positions and reporting relationships.

Kevin O'Reilly (AN) commented that one of his first tasks should be to get the AANDC Minister to sign off on the Environmental Assessment. Kevin also noted that positions for project managers were advertised by PWGSC, and inquired about to whom they reported. Jane responded that the positions are through PWGSC (who have a specific service arrangement with AANDC). The positions within PWGSC will report to Henry Westermann (Director) via an ENG-5 in the region. AN requested to see a revised organizational chart reflecting new personnel.

ACTION ITEMS FROM MAY 11 MEETING

Jane ran through the status of action items declared at the previous meeting.

1. Jane will look into the link to the webcam on the AANDC website.

STATUS: Complete. A link to the webcam was provided to the group and a link is available on the AANDC website. A new wireless webcam was installed at the remediation site. Kevin noted that the feed was higher quality than before but took far too long to be set up.

2. Jane will look into the possibility of providing regular one-page high level summaries regarding worker health and safety.

STATUS: In progress. This has been actioned within the team. The anticipated product will be high-level summaries including number of exceedances in the month, rather than being specific in detail to the individual. These could be shared online and/or with the working group. Jane explained that the MVLWB did not want such information in the monthly reports submitted to



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them, but agreed to revisit the issue with the board. Kevin said that the reports would be helpful and should just be incorporated into the monthly reports to the MVLWB, even as an appendix.

3. Linda will look into whether or not the remediation workers are unionized.

STATUS: In progress. Linda Pickett (PWGSC) explained that this is not information that PWGSC collects from its consultants and contractors, nor is it obvious on the Parsons website. Kevin suggested contacting Mike Borden, the mine manager.

4. Jane will provide additional information on the discussions with inspectors and Board on the use of an environmental liner in the Hazardous Storage area.

STATUS: Complete. The information was sent to the working group. Kevin O'Reilly acknowledged its receipt and expressed surprise that much of that information was not on the public registry. There was some confusion over structures originally proposed for the storage of hazardous waste from the roaster and the structure currently onsite used for processing and storing tailings for the underground stabilization. Jane clarified that Sprung buildings were originally evaluated for potential use in the roaster hazardous waste area; however the final decision was to use shipping containers. In the opinion of AN, the decision to store the roaster waste in tarped bags is a compliance issue in the absence of an amendment to the Waste Management Plan. Kevin observed that this highlighted a problem with communications. He stated that when compliance issues arise, the WG should be notified quickly and the reasons explained.

5. Bill Slater will update the terms of reference/scope of work for the technical advisor role/responsibilities.

STATUS: In progress. Bill would provide a more thorough update later in the meeting (see Item 5, below).

6. Bill will draft a work plan (with assumptions re: outcome of the EA).

STATUS: In progress. Bill would provide a more thorough update later in the meeting (see Section 5, below).

7. Jane will send the updated air quality monitoring presentation to the WG.

STATUS: Complete.

8. Asish will send the Health Canada guidelines on Risk Assessment for Carcinogens to the WG.

STATUS: Complete.

9. Jane will provide details on general on-site dust mitigation.

STATUS: In progress. Jane provided additional information in the Site Update (see below).

10. Erika will look into to what extent the GNWT can interact with the media.

STATUS: Complete. Erika Nyysönen (GNWT-ENR) reported that GNWT met with AANDC communications. AANDC is the lead on all GMRP-related communications. GNWT air quality specialists may attend any AANDC media events and provide technical information. They will need to attend media training, and will be supported by a GNWT-produced handout of what is being done and linkages between programs.



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Gordon Hamre (AN) noted that this issue came up due to the desire to respond promptly to media requests. Kevin observed the numerous hurdles between the GMRP team and media, and asked if Craig would be handling media requests from Ottawa. Jane responded that communications should be regional. She also noted that these perceived barriers to communication were systemic to government, not just the project, so few models were available to improve the matter. Todd Slack (YKDFN) asked if other media were more appropriate, such as social networking sites. Jane replied that social media has been investigated by the project team, and AANDC maintains a presence on Twitter. Bill Slater stated that no matter the medium, challenges always arise when a crisis occurs. Karin Kronstal (City) suggested that a regular narrative would be useful for public engagement and setting the context for project activity.

11. Jane will provide air quality report options to the WG.

STATUS: In progress. Jane reported that some changes have been made based on suggestions from the May 21st working group meeting. The AANDC air quality group gave three options for reporting: 1) continue with current reporting methods; 2) move to a weekly short summary and longer monthly report with laboratory data; or 3) produce weekly reports staggered every 2-3 weeks, allowing lab reports to catch up for a more substantial product. Jane committed to send the options to the WG for their consideration via email.

There followed a discussion of air quality monitoring being affected by the smoke from forest fires drifting into the area. Jane noted that the air quality monitors were being triggered daily as a consequence of the smoke, which was being addressed by increased vigilance in on-site visual inspections. Amy Sparks (EC) suggested that downwind monitoring be conducted to help narrow down the origin of alerts. Jane indicated that this is already done, and background levels are supplemented and confirmed by visual inspections. Kevin suggested that analysis of monitoring should be conducted around events (i.e., be associated with qualitative information), and that observations should include more detail such as describing the type of activity on site. The reporting at the end of Year 2 could focus on the events and mitigation, not simply risk-based assessment.

12. Jane will send out an availability calendar for the June site visit.

STATUS: Done. The site visit was held in June. Kevin extended his thanks for the opportunity to visit the site, but stated that it could be improved by a more formal, focused approach with commentary and explanation at each site, followed by questions and answers and then informal discussion.

Kevin said that it was helpful to review action items from past meetings, but preferred that the meeting minutes/summary should come back to the WG for approval. This would allow sign-off on items, and keep their memory fresh in the minds of WG members.



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2. UPDATE ON SITE ACTIVITIES

Jane provided an overview of recent activities at the Giant Mine site:

- Dry conditions continue on site (including low levels in groundwater, tailings pond, and Baker Creek). Discharge from treatment plant will start this week so levels will increase in Baker Creek. The expected treated water volume for this year will be about 200,000-300,000 m³. Last year's treated water volume was approximately 300,000 m³; the year prior was about 600,000 m³.
- The last water licence inspection was June 5, following the small water treatment spill reported from the roaster. The report is not yet available. There was also an inspection conducted in March 2014, though Kevin pointed out that the online registry shows the most recent inspection report filed on the public registry is dated January 2014.
- There have been some security incidents on site, including cyclists attempting to use the old highway that runs through site. A gate station has been constructed but is not yet powered. Erika said that she understood that the new Ingraham Trail route will be chipsealed by the end of this summer. Jane noted that the old highway is deteriorating quickly now that it is no longer maintained. There have also been some break-ins in the Giant town site, and regular security inspections are ongoing. Erika was going to confirm paving schedule with DOT.
- Geotechnical drilling is slated to resume in a few weeks. 3 or 4 surface holes are planned, and about 12 subsurface will be ongoing.
 - Jane explained that the timing of the drilling was related to contract details and not budget shortfalls.
 - Jane would request confirmation of whether drilling would occur at B1-18 (i.e., confirmatory drilling on Phase 1 areas).
 - Todd requested plain-language clarification on the after report of the field program with respect to criteria and measures of success. Katherine Ross (AANDC) will follow up with the AANDC Project Lead as to whether stabilization criteria were met at the end of the previous drilling contract.
- The C-shaft headframe is deteriorating. AECOM has been tasked to address it. The wood sections of the shaft will need to be removed. Work is starting this year, including developing a specification for removal, due to safety concerns; however the schedule for onsite demolition is still TBD and this may occur in the spring of 2015. Shaft access will continue. A-shaft is also in poor condition.
- Work continues on the removal of contents and washing down of the roaster. Currently 60-65 people are working on it, and a potential night shift will be set up in July to maintain the schedule.
- An emergency drill was held on June 16 with the City of Yellowknife Fire Division including ambulance response. It was based on a scenario of someone being injured in containment. A lessons-learned report is being generated from the exercise. Kevin asked that a copy of this report be provided to the Working Group.



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- The Parsons website contains some photos from inside the roaster. See <http://www.parsons.com/projects/Pages/giant-mine-roaster-complex.aspx>.

Kevin asked if the Niven Lake air quality monitoring station was operational. Erika responded that it is in the works. In the meantime, public opinion will be solicited on the station's stylistic elements (e.g., fenced or not, information required). This topic precipitated a discussion of zoning and application for a permit variance. Karin said she would inquire internally with the City.

3. CITY UPDATE

Karin Kronstal (City of Yellowknife) reported on future land use engagement re: Project Development Permit. Initiation of the engagement strategy, prepared by the City and the Project Team, has been halted for the time being. Assumptions regarding the delineation and levels of soil contamination are being expanded and updated continuously by sampling carried out in the summer of 2014, so it did not make sense to continue engaging directly on the issue. However, work could continue on developing the engagement model, including sessions in the community. More information should be available on site constraints within 6 months which would permit more robust community engagement.

DISCUSSION OF SOIL SAMPLING ON DISTURBED AND UNDISTURBED AREAS

Karin commented that it was previously thought that undisturbed areas had minimal arsenic contamination, but that it is now known to be possible. Jane commented that this reflected previous focus on sampling disturbed areas. She noted that soil sampling is being conducted this year to characterize undisturbed areas within the lease. It does not follow a systematic sampling grid. Kevin requested a copy of the sampling design and locations. Jane replied that terms of reference are being issued for a call up through PWGSC.

A discussion followed of the relative costs and risks of remediating undisturbed areas which many be contaminated. Jane indicated that remediation of these areas would be complicated by the need for delineation and by the physical characteristics of many of these areas (e.g., vegetation, topography). In contrast to the disturbed areas, which are delineated and have known soil volume numbers, the undisturbed areas are less well understood. Amy pointed out that this focus on undisturbed areas was not specifically anticipated by the EA, and Jane agreed that the remediation focus is on disturbed areas. However, these areas will continue to be sampled as the data contributes to the human health assessment component of the EA. Erika said that the information will also tie into the ecological risk assessment. Kevin requested access to this data as they are necessary to determine the associated risk. He agreed that remediating the undisturbed areas would be difficult, and risk management alternatives may be considered in the context of trade-offs (e.g., excavation of areas versus fencing them off).

Matt Hoover (NSMA) asked about the degree of coordination of soil sampling methodology on and off the lease. From the perspective of the people living in the area, they were the same. Erika responded that no agency is specifically responsible for off-site sampling. Ultimately it would be a territorial



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responsibility, but the GMRP is specific to the Giant lease area. She agreed that a standardized approach between the two areas would be helpful and that the idea was 'on the radar'. Erika said that she would liaise with Mike Palmer at NWT CIMP and share with the WG where they were sampling. GNWT was also supporting researchers from Wilfrid Laurier University who will be doing vegetation surveys along Baker Creek in August and examining potential linkages to contaminants.

On the issue of historical data sets, Kevin noted that Royal Roads conducted testing for Yellowknife Arsenic Soils Remediation Committee (YSARC) in the 1990s and early 2000s. Maps that compiled the data showed no areas in the built up part of Yellowknife exceeded the residential remediation guideline of 160 µg, which seemed unusual to him. Risk assessment was conducted as part of this work.

There followed a discussion of risk assessment and arsenic levels in undisturbed areas. Amy indicated that arsenic bioavailability would enter into risk assessment, whereas speciation would not be as useful an indicator. Jane suggested that bioavailability could be considered in the human health assessment, but Amy pointed out that it is not currently covered in the EA and a site-specific guideline would need to be created to suit it¹. Jane opened this topic for discussion, asking if GMRP should stick with the EA numbers, or set them aside and use a different process. It otherwise sounded as if the project was locked in to excavating contaminated areas. Kevin pointed out that soil remediation measures were outside the scope of the EA aside from the context of land use and human health. He stated that any change would require collaboration between the groups on the WG, rather than relying on standards set unilaterally by AANDC. Jane agreed and said that a collaborative risk assessment process would be conducted. Amy suggested that a decision on conducting a risk assessment could be made once arsenic levels in undisturbed areas were better understood. Bill agreed and said that it was logical to obtain a greater understanding of soil and vegetation conditions to inform the ecological and human health assessments. Some possible post-remediation land uses may need to be reconsidered in context of new information. Sharing the rationale for soil sampling locations would be worthwhile. Todd indicated that options were not limited to excavation, but also to fencing off contaminated areas. Jane agreed and said that information could be shared when a consultant comes on, possibly in time for the August WG meeting.

In response to a question from Bill on the scope of the RFP for the sampling, Jane said that it focuses on soil. Other work on terrestrial vegetation is planned but not part of this program. The terms of reference were complete, but the RFP has not yet been issued. Kevin said that it would be helpful for the WG to meet with the successful proponent and evaluate the proposed work. Amy recommended that soil sample analysis include a density study of soil invertebrates.

¹ Ashish later commented that the teleconference line was very bad that day and as such he was not able to hear some discussions - specifically, when the potential application of "bio-availability" tools was being discussed. He further stated that, if required, HC can provide guidance and additional information resources related to this topic.



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4. SPILL REPORTING

A spill occurred on June 20, 2014, from the roaster Material Storage Area (MSA), involving material leaking from a shipping container. The material was treated as hazardous waste and treated accordingly. Jane stated that additional investigation was required on the root cause of the spill. AANDC just awarded a contract to move additional shipping containers to the location of the spill, so an assessment of the spill would be made shortly.

- Kevin requested that information on the spill be presented to the WG.
- No similar spills were seen in tarped material. Jane indicated that some material is still wet when placed into the storage bags since the roaster contractor has to use water to keep dust down in the buildings. This material is stored in metre bags that are double lined.

Erika stated that the project is committed to getting spill reports out as quickly as possible. Compiling information takes some time, but she committed to responding to answering WG email questions as quickly as possible. Kevin stated that acknowledgement of the questions is appreciated, just to ensure that they have not been missed.

ON-SITE STORAGE

- New specifications for containers used on site to hold waste material include the requirement that they be water-tight. Shipping containers (i.e., sea cans) are not normally water tight, but moving forward these can and will be requested. Retrofitting existing containers will not occur, though liners and sealants are being investigated. Current practices limit leaks and the containers are intended for several years of use.
 - Kevin pointed out that containers would have to last several years before being moved underground. If containers were experiencing failures now, then this presented a risk to site operations in the middle-term.
 - Bill pointed out that installing liners in each seacan would require removing container contents, which bears risk of exposure.
 - Jane noted that another option is to place a liner under the whole facility, which is being investigated by Parsons and AECOM. However, it is noted that the MSA is located in the tailings pond and therefore all material is contained there and runoff is treated in the water treatment plant. Kevin asked what implications that might have for materials in storage, and whether it was appropriate for Parsons to be investigating options given the container failure. Jane clarified that the intent of the MSA is that Parsons is responsible for moving material, though ongoing maintenance will be carried out by a separate contractor.



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5. TECHNICAL ADVISOR UPDATE

In advance of the Meeting, Bill Slater circulated a slightly revised draft of the work plan and terms of reference for the independent investigator. He acknowledged comments received from Kevin and Joanne.

TERMS OF REFERENCE

Bill walked the group through various minor changes to the Terms of Reference (ToR). The major change reflects wording suggested by Kevin, clarifying the WG function and stating that AANDC and GNWT will keep the WG informed of activities. The new draft also provides some guiding principles and spells out the role and limits of the Technical Advisor. The draft also includes a provision for the WG to review the suitability and performance of the Technical Advisor and the adequacy of the Terms of Reference after approximately 6 months. The WG agreed that this review should be planned for January 2015. Jane suggested that the Administration section of the ToR should note that the Project has contractual responsibility. Contract changes and actions with budget implications would require contract approval to proceed.

- Matt suggested that the Review in Section 6 of the ToR could include a review of the WG and the effectiveness of communications. Bill responded that such reviews would be ongoing, and this section was a more formal process review occurring perhaps six months after the ToR was implemented.

WORK PLAN

Bill reported that the work plan for the independent investigator was based in part on discussions held with the WG in May 2014, and he acknowledged comments on the recent draft by Kevin and Joanne. He attempted to quantify tasks that may occur in the second quarter of 2014. In contrast to the ToR, the work plan was more difficult to define in the absence of the EA decision from the Minister of AANDC. The EA was anticipated in August 2014, but extensions by the Minister and federal cabinet colleagues could conceivably delay a decision until the end of 2014. The work plan might need to be reconsidered once an EA decision arrived.

- Joanne stressed the importance of completing work plans, as they help to determine priorities for the Giant Mine Advisory Committee (GMAC).
- Kevin suggested that a consolidated work plan be drafted that includes AANDC and GNWT actions. This information would assist Bill, GMAC and others in understanding project activity, as well as contribute to public reporting. Jane and Erika responded that the different work plans function at different levels and some actions are independent of the EA. Kevin suggested in turn a high-level consolidation of relevant major activities, such as a Gantt chart detailing contract activity for the next year. Bill and Jane agreed that a summary work plan was sufficient.
- Task 4: Jane and Asish expressed difficulty in following work plan tasks 4 and 4a. Bill agreed to clarify these entries and to move them to the white section of the work plan, which are EA



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dependent and can be moved. Kevin suggested relabeling Task 4 as Review of Current Monitoring Programs in anticipation of later monitoring work.

- Task 6: Bill asked if the WG wished to respond to the underground stabilization program per the actions in this task. Kevin replied that the deadline for comments was July 8. Bill agreed to remove the task as it was no longer relevant. Kevin informed the WG that they had two opportunities to comment on the issue, once when it was brought to the attention of the WG, and again when submitted to the land and water board. He advised that review is best done on the first pass, to obtain feedback before making a regulatory submission.

Bill said that he would make the changes suggested and finalize the work plan for the WG.

6. OTHER ISSUES

AIR QUALITY MONITORING

Linda reported that DCNJV's SOP on dust management is pending and it should be available in August in time for the next WG meeting.

WATER MONITORING

Erika reported that GNWT will be deploying water sampling equipment at the tip of N'dilo during the week of July 21-25. They are also working with EC to include other sampling locations for CIMP and YKDFN. The sampling will take place in August and will examine water quality and sediment load.

CLOSURE CRITERIA

Todd Slack expressed his desire that closure criteria be written into Giant Mine's future water licence application. Jane said that these could be looked at once the EA is complete and some design components had been established. She agreed with Todd that closure criteria should be kept in mind and not left to the last minute.

Meeting adjourned at 4:20 pm.



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7. NEXT MEETING

The next WG meeting is tentatively planned for August 14, 2014

ACTION ITEMS

1. Jane will revisit with MVLWB the matter of incorporating summaries of the worker human health monitoring program into LWB reports.
2. Jane will provide organizational chart reflecting new personnel
3. Jane will send to the WG the three options for air quality reports.
4. Erika will provide an update on highway schedule.
5. Jane will share WG meeting summary notes with WG for review and the minutes will be approved at the next meeting.
6. Katherine will confirm whether stabilization criteria were met at end of last drilling contract.
7. Karin will investigate permit variances for Erika in regards to the Niven Lake monitoring station.
8. Erika will confirm sampling locations of Wilfrid Laurier researchers and share with WG.
9. Jane committed to developing a collaborative risk assessment process in regards to soil sampling analysis in undisturbed areas of the lease.
10. Erika will send out revised closure objectives with WG for potential discussion at next meeting.
11. Jane will communicate to WG the results of the investigation into the June 20, 2014 spill at the MSA.
12. Jane and Erika will look into developing high-level summary work plans and/or contract schedules to inform Bill's work plan and identifying priorities for WG members.
13. Jane will obtain a report on the June 16 emergency drill held on site when it becomes available and share it with the WG.