

June 12, 2013

Ms. Jennifer Winsor, P.Eng.
Environmental Approvals Branch
Manitoba Conservation and Water Stewardship
123 Main Street, Suite 160, Union Station
Winnipeg, Manitoba
R3C 1A5

Dear Ms. Winsor,

Re: Hudson Bay Mining and Smelting Co., Limited – Reed Mine *Environment Act* Proposal
Your File Number: 5621.00
TAC Response Submission

Thank you for forwarding the comments provided by your Technical Advisory Committee (TAC) concerning our *Environment Act* Proposal for Reed Mine. The following further information is submitted in response to the TAC comments. We have reviewed each of the TAC submissions and attempted to consolidate the comments by subject area. Where like comments have been submitted by two or more reviewers, we have consolidated them and address them as one response.

1. Ore and Waste Rock Management

Letter from Manitoba Conservation and Water Stewardship, Water Quality Management Section – Kevin Jacobs, February 22, 2013

Based upon the mineralization of initial drill cores taken from the site can any estimation be made regarding potential for acid or alkali generation? For example has any acid/base accounting occurred?

Yes, acid base accounting (ABA) is being conducted, and the methodology and results are provided in the attached memo *Reed Waste Rock Sampling Program*. To summarize this information, during early exploration (spring 2011) core samples were collected close to the ore body. Based on the analysis of these core samples, it was determined that this rock has low acid generating potential (Table 3 in the *Reed Waste Rock Sampling Program* memo). The percent sulphur level was measured to be 0.3% which is very low, indicating that it would take a very long time for exposed rock to generate acid drainage.

Since the start of the Advanced Exploration Project, tests of the rock collected from the decline (670 m in length and 60 m in vertical depth) have all indicated that the rock extracted can be classified as non-acid generating. Please refer to Table 1 and Table 2 in the *Reed Waste Rock Sampling Program* memo. This non-acid generating rock has been used to form the base and

first two lifts on the waste rock storage pad (See the attached memo *Reed Waste Rock Sampling PAG* for details).

Testing of waste rock will continue throughout development of the decline. As the project progresses toward and enters the mining stage, it is expected that some rock will have the potential to be slightly acid generating. However, less rock will be coming to the surface during the mining stage as it will be required as backfill. Rock not used immediately as backfill will eventually be returned underground and will only be stored temporarily (2 to 3 years) on surface. As this rock is only stored temporarily on surface, it would in any case have little time to become acid generating.

It is noted the proposed ore storage pad will be lined with an impermeable liner to prevent potential drainage from running off site. We would suggest that the waste rock pad also be lined to prevent runoff of any potential contaminants off site.

The waste rock pad was constructed as part of the Reed Copper Advanced Exploration Project (AEP) and is already in operation. No impermeable liner was used or is required because the waste rock storage pad is used to store only rock that is expected to be primarily non-acid generating.

In the absence of a liner, other measures of protection against the impact of potential acid rock drainage have been implemented at the waste rock storage pad. The pad has been constructed of limestone boulders that act as a level base, which is then in-filled with approximately 500 mm of sand and cobble, and 300 mm of crushed limestone (see Figure 9 in the EAP, copy attached). The sand and limestone layers will filter and neutralize any potentially acidic runoff generated by the stockpile. In addition, as waste rock is generated it will be placed on the stockpile in lifts (layers), with each lift 3 to 4 m high with a 300 mm of crushed limestone layer between two lifts, which will aid to further filter and neutralize any acid generated at the storage pad. To date the first two layers of the waste rock storage pad have been tested and have been found to be non-acid generating.

As stated previously, any acid generation occurring at the waste rock storage pad is expected to be minimal, if any, as rock will only be stored temporarily on surface (2-3 years), it would have little time to become acid generating. It is expected that any rock that is potentially acid generated will be confined to the top of the storage pad, which will be the first rock placed back underground and therefore subject to the shortest exposure to air and precipitation.

What is the capacity of the limestone in the waste rock storage pad to treat potential acid mine drainage?

Based on the assays of the local crushed limestone and results of ABA testing, the acid neutralization potential has been calculated to be a minimum of 94 kg of H₂SO₄ per tonne of crushed limestone, which is judged to be highly protective.

The use of waste rock as backfill should mitigate against long term storage requirements of waste rock. It is noted that rock will be backhauled from Flin Flon to supplement

backfill requirements. No wasterock should be backhauled that is determined to be acid generating, or having a chemistry that could adversely affect water quality.

The proponent respectfully submits that placement of potentially acid generating waste rock underground is an appropriate mitigation and management measure, regardless of the origin or such rock. During mine operation, storage underground minimizes exposure of the rock to water and substantially minimizes acid formation. Any runoff from waste rock stored underground is eventually pumped to the surface, where it is tested and subject to treatment.

It should also be noted that mines must always meet the backfill requirements in order to conduct mining safely and efficiently. As noted in the EAP, the backfill requirement for Reed Mine cannot be met by rock generated on site. Nor can the backfill requirement be met through the use of non-acid generating waste rock from elsewhere as there is no sufficient source. A constraint on the use of PAG rock would effectively prevent safe operation of the mine, or result in the development of a new rock quarry within the Grass River Provincial Park.

It is our experience that storage of waste rock underground at mine closure appropriately addresses the potential for the formation and migration of acid rock drainage or metal leaching: firstly, storage underground minimizes exposure to air as during closure mine underground workings flood and creates an anaerobic environment which prevents acid formation. Secondly, even if ARD does occur, it is confined to the deep areas of the mine where it is isolated from surface water and groundwater migration due to the equilibrium of water pressure during mine flooding.

HBMS intends to meet the backfill requirements at the Reed Mine with potentially acid generating rock from the Reed Site, as well as from potentially acid generating rock obtained from other mining facilities in the area, including Flin Flon.

How will runoff from storage pads of waste rock and ore be managed? For example, will it be directed to the polishing pond?

Waste Rock Storage Pad

As noted above, the waste rock storage pad has been constructed and is in operation. Our operational experience with this storage pad and others in the region (Flin Flon and Snow Lake) is that little drainage occurs off the rock piles. Snow melt occurs quickly and runs off the outside of the pile as opposed to permeating through the pile. Rainfall is generally absorbed or will quickly evaporate, and very little, if any, will permeate through the rock piles.

Any such runoff is collected in a perimeter ditch, where it is reabsorbed into the surrounding soil. Although the waste rock storage pad will be used to store rock that is expected to be primarily non-acid generating, some material placed on the pad as the project progresses toward mining has the potential to be acid generating. As stated above, to mitigate the effects of acid rock drainage, any water that permeates into the pad will pass through layers composed of limestone boulders, sand and cobble, and crushed limestone which will filter and neutralize any potentially

acidic runoff generated by the stockpile. This neutralized runoff will then be absorbed by the soil and wetlands surrounding the waste rock storage pad.

To further facilitate acid neutralization, the waste rock will be placed on the stockpile in lifts (layers), with each lift 3 to 4 m high with a layer of crushed limestone and sand between two lifts. Very little runoff is expected to flow through the rock piles as the fine material in the layers will absorb moisture.

As a final measure of protection, HBMS will conduct regular monitoring of the stockpile and the area immediately surrounding the stockpile for any signs of potential ARD.

Ore Storage Pad

Runoff from the ore storage pad will be collected in a surface sump (see Figure 8 in the EAP), and pumped to one of the underground sumps which collects seepage and process water. From there, it will be discharged to the polishing pond. Water quality in the polishing pond is measured weekly and treated, when required, to meet the applicable Tier 1 criteria set out in Manitoba Water Quality Standards, Objectives and Guideline.

Letter from Manitoba Conservation and Water Stewardship, Lands Branch – Adara Kaita, March 1, 2013

In Figure 8, the illustration shows a collection area but there was no indication in the EAP as to where accumulated runoff would be directed to and if it would be tested prior to release. It is required that the accumulate runoff location/direction be shown within the EAP and that it be tested by the proponent prior to release.

Email from Manitoba Conservation and Water Stewardship, Fisheries Branch – Laureen Janusz, February 20, 2013

In Figure 8, the illustration shows a collection area but there was no indication in the proposal as to where accumulated runoff would be directed to and if it would be tested prior to release. We would appreciate knowing this information.

As stated above, runoff from the ore storage pad will be collected in a surface sump (see Figure 8 in the EAP), and pumped to one of the underground sumps which collects seepage and process water. From there it will be discharged to the polishing pond, which (as described below) is subject to weekly water quality testing.

2. Groundwater

Letter from Manitoba Conservation and Water Stewardship, Water Quality Management Section – Kevin Jacobs, February 22, 2013

We recommend a license requirement for the polishing pond include having a maximum hydraulic conductivity of 1×10^{-7} cm/s or less

The polishing pond was constructed during development of the AEP and is currently in operation. To prevent leakage it has been equipped with a non-permeable geosynthetic liner which by definition does not have a permeability factor. Any permeability that may occur would be along the seams of adjacent liners. Based on the specification of the liner used, the permeability along these seams is rated at 1×10^{-8} cm/sec, which exceeds the standard of protection requested. Please refer to the attached *Construction Guidance Specifications* for details on the construction of the polishing pond.

3. Surface Water

Surface Water Flow Offsite

Letter from Manitoba Conservation and Water Stewardship, Water Quality Management Section – Kevin Jacobs, February 22, 2013

The proposed polishing pond will discharge to a marsh area and then un-named water body identified as Lake 3. While it is noted Lake 3 and Unnamed Lake 1 are both lakes characterized by depressional lows, where there is no clearly defined inflow or outflow, further work may be required to differentiate the potential flow pathway. It is anticipated flow will eventually occur to Whitehouse Creek, the Grass River, and Reed Lake.

Although the field studies and assessment conducted to date indicate that water from the site will flow towards Unnamed Lake 3 and Whitehouse Creek, in May 2013 AECOM initiated a follow-up study designed to further characterize water flow within the wetlands and water bodies located downstream of the polishing pond discharge location. The area included in this field study is illustrated in the attached figure titled *Proposed Downstream Effect Monitoring Locations*.

It was observed that water released from the polishing pond enters Unnamed Lake 3 after 190 m at a poorly defined channel with no visible flow velocity.

Water exiting Unnamed Lake 3 then passes down gradient through approximately 750 m of string bog with no visible surface flow or defined channel. The first visible channel of surface runoff downstream of Unnamed Lake 3 begins at the edge of the string bog, approximately 380 m upstream of its eventual connection with Unnamed Lake 2. This meandering channel has minor increases in width and flow as it approaches Unnamed Lake 2. Any runoff from Unnamed Lake 3 will, according to topography, eventually report to this drainage feature. A surficial water sampling point was identified on this channel which could be used in any proposed long-term monitoring program to identify if there are any surface water impacts from the Reed Mine that are flowing downstream to Unnamed Lake 2.

Unnamed Lake 2 has an intermittent 150 m connection to Whitehouse Creek that has been observed in previous studies to become dry during the late summer months. From Whitehouse Creek, it is a further 8.3 km downstream to the Grass River and a further 2.3 km downstream to Reed Lake.

Effluent Quality

Letter from Manitoba Conservation and Water Stewardship, Water Quality Management Section
– Kevin Jacobs, February 22, 2013

We recommend a license condition include a clause stating that the Licencee shall not release any effluent from a final discharge point if the effluent quality is acutely toxic or resulting in, or is likely to direct or cumulatively result in, a downstream degradation of the water quality within Whitehouse Creek, the Grass River, and Reed Lake, relative to the Manitoba Water Quality Standards, Objectives and Guidelines developed by Manitoba Conservation and Water Stewardship.

HBMS agrees that any effluent discharged from the polishing pond should not directly or cumulatively result in downstream degradation of the water quality within Whitehouse Creek, the Grass River, or Reed Lake. This will be confirmed through weekly monitoring of the polishing pond and, if necessary, treatment to meet the applicable Tier 1 criteria set out in Manitoba Water Quality Standards, Objectives and Guideline. Results of the water quality analysis will be reported to Manitoba Conservation and Water Stewardship as may be required.

As the polishing pond will be subject to chemical testing, HBMS is of the view that testing for acute toxicity is not required as a matter of course. However, in the unlikely event that water quality from the polishing pond consistently exceeds the Tier 1 criteria, acute toxicity testing may be used to assess whether such exceedance is likely to result in the potential degradation of water quality downstream of the Reed Mine. As further assurance, as proposed below, these downstream waterbodies will be subject to water quality monitoring programs.

The proposal states that polishing pond contents will be compared with Tier 1 Manitoba Water Quality Standards and appropriate treatment applied if necessary. Some contingency plan should be provided in the event that water quality does not meet expectations. As noted in the Manitoba Water Quality Standards, Objectives and [Guidelines] (the “Standard”) use of best available treatment technologies is required.

In the event that water quality does not meet expectations, HBMS will implement chemical treatment (addition of flocculant, lime injection) and pH adjustment of water within the existing polishing pond in order to facilitate the removal of suspended solids and metals from the discharge water, and provide pH control. In addition, HBMS plans on constructing a second polishing pond in an area adjacent to the existing pond to facilitate more effective water treatment, and, should this prove necessary, HBMS would also consider the use of a portable water treatment system, which would be designed to meet the water conditions specific to the Reed Mine. HBMS is of the view that this meets the Standard. We enclose the draft *Reed Copper Project Water Quality Management Contingency Plan* for your review.

Surface Water Quality and Monitoring Programs

Letter from Manitoba Conservation and Water Stewardship, Water Quality Management Section
– Kevin Jacobs, February 22, 2013

The proposal states “To ensure that there will be no adverse impact to surface water as a result of mining activities, it is recommended that a water quality monitoring program be developed and implemented for the polishing pond and any other potential source of surface water discharge”. We concur with this statement. No details on a proposed monitoring program are provided. We recommend a water quality monitoring program be developed and submitted by the proponent for approval by the Department.

Analysis should include a complete scan of total and dissolved metals and metalloids, and general chemistry including pH, conductivity, ammonia, nitrates, total dissolved nitrogen, Total Kjeldahl Nitrogen, total phosphorus, total dissolved and suspended solids, sulphate, dissolved oxygen, turbidity and hardness. Detection limits should be commensurate with comparison to Tier III Water Quality Guidelines.

We attach for your review the *Reed Mine Water Sampling Matrix*, which details the proposed water quality monitoring program to be undertaken for the polishing pond. Please note that the analytes and detection limits in the monitoring program will be commensurate with the Tier I Water Quality Guidelines.

Apart from the polishing pond, HBMS is not aware of any potential source of surface water discharge at the Reed Mine.

Additional water quality monitoring of Lake 3, [Whitehouse] Creek and Un-named [Lake] 2 is recommended.

HBMS agrees to the development and implementation of a water quality monitoring program at locations downstream of the polishing pond discharge point. We attach for your review the proposed *Reed Mine Downstream Effects Monitoring Matrix*, which details the proposed water quality monitoring program for Unnamed Lake 3, a creek/wetland monitoring location, and Whitehouse Creek. Although quarterly sampling is normally preferred, due to conditions of the proposed sampling locations during winter months (water depth, accessibility) we propose sampling at these locations three times per year (spring, summer, and fall).

Letter from Manitoba Conservation and Water Stewardship, Lands Branch – Adara Kaita, March 1, 2013

It is required that an ongoing water quality testing/monitoring program be developed and implemented by HBM&S for Reed Lake, [Grass] River, and Whitehouse Creek through the duration of the Reed Mine lifespan and up to at least 5 years after decommissioning of the mine site.

As stated above, a water quality testing/monitoring program for the Unnamed Lake 3, a creek/wetland monitoring location and Whitehouse Creek has been developed and is enclosed for your review (Proposed *Reed Mine Downstream Effects Monitoring Matrix*). This program will be implemented by HBMS throughout the duration of mine life and for 5 years following the decommissioning of the mine site.

Ongoing monitoring of the Grass River and Reed Lake is not considered to be beneficial because of the distance of these waterbodies from the Reed Mine site and because of the nature of the separation between them and the Reed Mine site (see attached Figure *Site Location*). The Grass River and Reed Lake are located approximately 13 km downstream from the Reed Mine, and are separated from Reed Mine by Unnamed Lake 3, a string bog, Unnamed Lake 2, and intermittent channel and Whitehouse Creek. There is no year-round surface connection between Unnamed Lake 3 and Unnamed Lake 2, and Unnamed Lake 2 is intermittently connected to Whitehouse Creek during brief periods during the year (such as spring freshet). As a result, there is no potential for the migration of runoff from the Reed Mine and Unnamed Lake 3 to the Grass River and Reed Lake.

Furthermore, any potential sampling locations on Grass River are isolated and not accessible by road, trail or boat. They are located along a reach of the river that is very fast flowing and which contains a series of rapids and elevation changes. These conditions pose an unacceptable risk to the safety of individuals who would have to collect water samples.

Wetland Sampling

Letter from Manitoba Conservation and Water Stewardship, Water Quality Management Section – Kevin Jacobs, February 22, 2013

It is required that the EAP include a sampling site within the wetland complex, particularly if it becomes evident that there is difficulty in complying.

Email from Manitoba Conservation and Water Stewardship, Fisheries Branch – Lauren Janusz, February 20, 2013

HBMS indicated monitoring water quality to ensure compliance with the guidelines. While we defer to our colleagues in Water Science Management on this, given the high “shallow” groundwater table associated with the surrounding wetlands it might be beneficial to include a sampling site within the wetland complex, particularly if it becomes evident that there is difficulty in complying.

It is our opinion that there is no benefit in monitoring the water quality within the wetland complex, as the water collected during sampling would comprise of surface water and not be representative of the “groundwater” conditions at the site. However, HBMS has identified a sampling location to assess water quality in the wetland complex in the event that additional monitoring is required. The proposed monitoring site, located between Unnamed Lake 3 and Unnamed Lake 2, is identified in the attached figure titled *Proposed Downstream Effect Monitoring Locations*. In the event that groundwater quality monitoring is required, parameters and frequency of monitoring will be developed with support from Conservation and Water Stewardship-Northwest Region – Water Science and Management Branch and Fisheries Branch.

Drinking Water Supply

Email from James Sibbard – Manitoba Water Stewardship, February 15, 2013

The EAP noted that no adverse effects upon surface [water] are anticipated and, while it noted communities, lodges, etc. in the project area, it did not specifically state the water sources for them. Based solely upon this ODW cannot state whether we have any direct concerns with the EAP or proposed development respecting drinking water safety.

There are no communities, lodges, homes, cottages or campgrounds located in the Project Area. The closest water users are located at Peterson's Reed Lake Lodge located on Fourmile Island in Reed Lake and the Grass River Lodge located on the south shore of Reed Lake. These lodges obtain their water supply from Reed or use bottled water for drinking. Discharge water from the polishing pond and runoff water from the mine site would flow overland then through a wetland into Unnamed Lake 3, travel through a string bog and overland to Unnamed Lake 2, then through an intermittent stream to Whitehouse Creek, then north to the Grass River which flows into Reed Lake. The total distance any potential contaminants from discharge water or a potential spill would need to migrate in order to reach the Reed Lake is approximately 13 km (see attached Figure *Site Location*). Any contamination resulting from mine discharge or potential spill or accident released into a surface water body would be mitigated or naturally attenuated prior to reaching Reed Lake and would have no impact on drinking water.

Wastewater Management

Letter from Manitoba Conservation and Water Stewardship, Water Quality Management Section – Kevin Jacobs, February 22, 2013

The proponent should provide verification that a licensed wastewater treatment facility is willing to accept and has adequate capacity to treat wastewater from this development. It is advised that wastewater be transported and treated outside the watershed to prevent nutrient loading to Grass River.

The contractor commissioned by HBMS to haul sewage from the Reed Mine, Ouellet's Septic, has obtained approval from the R.M. of Kelsey/Local Urban District of Cranberry Portage to transport up to 16,000 gallons of sewage per week to their lagoon located in Cranberry Portage, Manitoba. This volume exceeds the requirement for Reed Mine as outlined in Section 2.4.6 of the EAP. A copy of the approval letter, dated May 13, 2013, from the R.M. of Kelsey/Local Urban District of Cranberry Portage is attached.

4. Protected and Other Fauna

Wildlife

Letter from Manitoba Conservation and Water Stewardship, Wildlife Branch – James Duncan, March 4, 2013

Mr. Duncan's comments relate to the description of the terrestrial environment contained in Section 4 of the EAP and the Environmental Effects Assessment and Mitigation Measures Pertaining to Wildlife set out in Section 5 of the EAP. We note that Mr. Duncan likely did not have the *Reed Mine Environmental Baseline Assessment* before him at the time of his review.

We apologize for failing to include this document with our submission at the time we filed the EAP. The information included in Section 4 of the EAP was intended to be a brief summary of the detailed environmental baseline studies conducted for the Reed project, and therefore many of the details required for Mr. Duncan to complete his review may not have been apparent to him at the time of his review.

A wildlife inventory study was not conducted as part of the assessment. Although, the project footprint is small, and is largely confined to a previous disturbed site, the absence of effort to collect wildlife information creates challenges in evaluating a project in this region. This is a gap in the environmental assessment. (This comment relates to the description of the terrestrial environment).

Although a wildlife inventory was not conducted for this project, a terrestrial survey of the area was conducted over two seasons to assess local floral communities, wildlife, and the potential for the occurrence of rare and endangered species within the vicinity of the Reed Mine site. Detailed methodology and observations from the terrestrial survey have been documented in the *Reed Mine Environmental Baseline Assessment*, provided to Manitoba Conservation and Water Stewardship as a supplemental document on February 28, 2012, following the initiation of the TAC review.

The initial survey was conducted on August 24, 2010 and a supplemental terrestrial survey was conducted the following spring on June 3, 2011 to search for early flowering plants and nesting migratory songbirds that may not have been recorded in the fall 2010 survey.

The Project Region, including the Project Area, was flown by helicopter for an initial aerial survey to allow photography and GPS mapping of points of interest followed by a ground survey. The Project Area was further surveyed by random walk for early flowering plant species and evidence of wildlife use and nesting by migratory songbirds. Primary among the survey goals was revealing any local habitats that may harbor rare and endangered species. The survey focused on plant community types in the development area, looking for local floral associations that might indicate species of concern. Wildlife occurrence was recorded through tracks and sign, and direct observation and photographs were collected. The results of this work are set out in detail in the *Reed Mine Environmental Baseline Assessment*, which we feel should address Mr. Duncan's concerns.

Letter from Manitoba Conservation and Water Stewardship, Wildlife Branch – James Duncan, March 4, 2013

A very limited description of wildlife effects and mitigation measures was included in this assessment. The information that was provided was specific to the Virginia rail, monarch butterfly and woodland caribou. This is a narrow review on effects to wildlife, and overlooks many of the environmental species that are important to the region. The absence of wildlife effects information creates challenges in evaluating the project.

A broad review of potential wildlife occurring within the Project Area was included within the terrestrial assessments that are described in the *Reed Mine Environmental Baseline*

Assessment. For example, in conducting the work associated with the baseline assessment moose were identified as being fairly common in the area, especially along waterways, as are the White-tailed deer that have moved into the region from the south. It was noted that wolf packs roam through various sections of Grass River Provincial Park and other predators such as lynx, marten, fisher and wolverine were identified as being found in varying numbers throughout the Region. It was also noted that mink and otter are common in the lakes and rivers, and colonial nesting birds such as double-crested cormorants, great blue herons, white pelicans, gulls and terns can be seen on the lakes.

A listing potential wildlife species that are known to occur in the region are presented in Appendix B Table – 07 of the *Reed Mine Environmental Baseline Assessment*. This list was used as a reference by field teams conducting the surveys in the Project Area, and any wildlife observed during the terrestrial surveys would have been documented. Field observations confirmed that the wildlife habitats within the Project Area are typical for the region, with no unique or rare habitats encountered. In addition, no protected species were observed during the terrestrial surveys conducted for the project. Based on the field observations during the two terrestrial surveys, it was concluded that there was no critical wildlife value in the Project Area.

The three species discussed in Section 5 of the EAP were selected because, based on the assessment, they were the species that were considered to be potentially impacted by this type of project.

Caribou

HBMS appreciates the additional information, comments and recommendations provided by Ms. Kaita and Mr. Duncan with respect to caribou. These comments and additional information have been noted. This section addresses the specific questions and recommendations offered in the TAC comments concerning caribou and caribou habitat.

Letter from Manitoba Conservation and Water Stewardship, Wildlife Branch – James Duncan, March 4, 2013

Letter from Manitoba Conservation and Water Stewardship, Lands Branch – Adara Kaita, March 1, 2013

While possible effects on caribou from the project are considered minor, ongoing monitoring of caribou in the vicinity [of Reed Mine] should continue [in order to verify continuance of normal use patterns and enable adaptive management]. [The proponent should] work with the Northwest Region Woodland Caribou Research and Management Committee and Conservation and Water Stewardship Staff] to develop, fund, and implement an ongoing environmental monitoring plan. [The components of the plan should include, but not be limited to] ongoing monitoring of islands, to ensure continued use, supplemental collaring of caribou, recruitment surveys, winter highway track counts, onsite record keeping of caribou observations (tracks and animals), interpretive signing outlining forms of mitigation employed by the proponent to avoid disturbance.

HBMS accepts this recommendation in its entirety.

HBMS has implemented a number of initiatives focused on monitoring caribou use and movements in the area and minimizing impact to caribou and caribou habitat.

HBMS participates in Manitoba Conservation's ongoing large-scale caribou study in Northern Manitoba, including the Reed Mine Project Region, which contributes information used in Manitoba's Conservation and Recovery Strategy for Boreal Woodland Caribou. The Strategy document groups caribou ranges as Low, Medium or High risk, based on levels of disturbance and various other threats for each range. (Government of Manitoba 2005). In 2009 and 2010, the Northwest Region Woodland Caribou Research and Management Committee, with funding from HBMS, collared female Boreal Woodland Caribou on islands of Reed Lake to document areas of use (travel corridors, rutting areas and calving sites). Ongoing monitoring of caribou deaths will continue to contribute to assessment of herd stability.

HBMS is committed to continuing with the ongoing monitoring of caribou in the vicinity through continued involvement and participation with the Northwest Region Woodland Caribou Research and Management Committee. HBMS has made a commitment through funding additional research efforts in 2012 through 2014, which has already resulted in the collaring of 14 additional caribou in the Naosap/Reed range. HBMS is interested in supporting additional studies by Manitoba Conservation targeted at monitoring caribou use and movement within the vicinity of the Reed Mine, which could include supplemental collaring, monitoring caribou use on known calving islands located within Reed Lake, recruitment surveys and winter highway track counts. These programs will be discussed with the Manitoba Conservation Water Stewardship-Northwest Region.

In addition, HBMS will implement a program at the site of the Reed Mine for documenting and reporting caribou observations with direction provided by Manitoba Conservation Water Stewardship-Northwest Region, HBMS will fund and implement the installation of interpretive signing at the Reed Mine site. HBMS also will implement a driver education program to inform HBMS employees and contractors about the hazards associated with wildlife and provide information on how to reduce the potential for accidents with wildlife on roads and highways within the area of the Reed Mine.

Letter from Manitoba Conservation and Water Stewardship, Lands Branch – Adara Kaita, March 1, 2013

It is required that the proponent provide maps of the Reed [Lake] caribou range as well as maps of areas of high density use and travel corridors as attachments to the Environment Act Proposal Report to illustrate spatial use by caribou in relation to the project area.

We attach Maps prepared by Manitoba Conservation Water Stewardship-Northwest Region showing caribou tracking data from 2009 to 2012. These seven maps include areas of high density use, winter and summering areas, calving areas, rutting areas and travel corridors.

Email from Manitoba Conservation and Water Stewardship, Parks and Natural Areas Branch – Jessica Elliott, February 22, 2013

In addition to the mitigation measures being proposed by HudBay, the Branch requests that HudBay educate their drivers about the potential for conflicts with wildlife and instruct them in ways to reduce conflicts.

As noted above, HBMS will implement a driver education program to inform HBMS employees and contractors about the hazards associated with wildlife and provide information on how to reduce the potential for accidents with wildlife on roads and highways within the area of the Reed Mine.

5. Land and Resource Use

Letter from Manitoba Conservation and Water Stewardship, Wildlife Branch – James Duncan, March 4, 2013

Wildlife Branch would like assurances that construction workers and employees are not permitted to hunt or shoot wildlife at or around the project site.

In accordance with the 2012 Manitoba Hunting Guide (Manitoba Conservation and Water Stewardship 2012), hunting in provincial parks is subject to specific regulations, designed to ensure human safety. The guidelines indicate that “persons may not hunt, possess a loaded firearm, or discharge a firearm within 300 m of recreation areas, cottages, dumps, roads and prescribed trails.” Since the Project Site falls within 300 m of PTH 39, hunting is not allowed within the boundaries of the Project Site. All HBMS employees and contractors will comply with the hunting restrictions and will not be permitted to hunt or shoot wildlife on the property.

6. Accidents and Malfunctions

Email from Manitoba Conservation and Water Stewardship, Parks and Natural Areas Branch – Jessica Elliott, February 22, 2013

As stated in the proposal, the presence of mechanical equipment, fuels and explosives on-site creates a potential for fires and explosions. If a fire does occur and spread into the surrounding forest the nearest district office of Manitoba Conservation and Water Stewardship is to be notified immediately so that support of the Manitoba Fire Program can be given if necessary.

We attach the HBMS *Reed Copper Project Surface Emergency Response Procedure* (Form Number RMP-101), which details various activities and procedures that should be followed in the event of an emergency at the site of the Reed Mine. This includes evacuation procedures and contact procedures. The nearest district offices of Manitoba Conservation and Water Stewardship (Snow Lake and Cranberry Portage) have been included in the contact list.

HBMS also wishes to express appreciation for the additional information provided by Ms. Elliott concerning Grass River Provincial Park and mining within the Park.

Email from James Sibbard – Manitoba Water Stewardship, February 15, 2013

The EAP did note that significant amounts of Diesel fuel will be stored on the mine site. As such, ODW would recommend that emergency response plans for the mine include contact information for the drinking water systems downstream of the mine site and a requirement that, if a major spill of fuel or any other substance into the surrounding surface water systems occur, the downstream users should be notified.

All fuel tanks on site will be equipped with self-containment (SCAT) and placed on sand, gravel or concrete pads. As an additional measure of protection, the two diesel tanks that supply the generators are equipped with containment berms. Given this level of spill prevention and the remoteness of the site from drinking water sources, the potential for impacting any water supply as a result of fuel spills is assessed to be extremely remote. However, HBMS will include contact information for any drinking water users located in the Project Region. If a major spill of fuel or any other substance occurs at the Reed Mine, all downstream water users will be notified.

7. Permits and Leases

Letter from Manitoba Conservation and Water Stewardship, Lands Branch – Adara Kaita, March 1, 2013

Any further development or expansion within Lease area #66082, requires approval through the Conservation and Water Stewardship-Northwest Region.

Any further development or expansion outside of Lease area #66082, requires an application and approval by Conservation and Water Stewardship-Parks Branch, prior to development.

HBMS will obtain all necessary approvals. HBMS is aware that any further development or expansion outside Lease Area #66082 will require an application and approval by Manitoba Conservation and Water Stewardship – Parks Branch, prior to development.

A work permit is required from Conservation and Water Stewardship-Northwest Region by the proponent working on the lease area, which has the potential to alter or affect the land. Work permits are also required year around under the Wildfires Act for industrial operations in the burning permit area.

HBMS will obtain any necessary work permits.

Email from Manitoba Conservation and Water Stewardship, Parks and Natural Areas Branch – Jessica Elliott, February 22, 2013

The current Parks lease held by Hudson Bay Mining and Smelting Ltd. (HudBay) at the proposed Reed Mine site was issued only to permit their advanced exploration project (AEP). Upon issuance of an Environment Act license Hudbay will be required to obtain a new Parks lease.

HBMS understands that before converting the use of the site from exploration to production, it must obtain a new Parks lease from Manitoba Conservation and Water Stewardship, Parks and Natural Areas Branch.

Letter from Ryan Coulter - Manitoba Infrastructure and Transportation, Environmental Services Section, February 14, 2013

Please advise the proponent that the MIT Northern Regional Operations would like to see a separate application for the access on to PTH 39

The application process for the access road has already been completed by HBMS. We enclose a copy of the Highway Traffic Board Permit, dated March 22, 2012.

8. Closure Planning

Email from Cal Liske – Manitoba Innovation, Energy and Mines, February 19, 2013

Submit a Closure Plan for the proposed Reed Mine on or before September 30th, 2014.

By September 30, 2014, HBMS will submit a Closure Plan for the Reed Mine. This submission will update, and will be intended to replace, the existing Closure Plan for the Reed Copper AEP.

We would be pleased to provide any other information that you may require. Thank you very much for your kind attention to this application.

Sincerely,



Stephen West, P.Eng.
Superintendent, Environment Control

List of Attachments

1. Memo - Reed Waste Rock Sampling
2. Memo - Waste Rock Sampling PAG
3. Figure – Cross-Section – Waste Rock Storage Pad
4. Figure – Cross-Section – Ore Storage Pad
5. Construction Guidance Specifications
6. Figure – Proposed Downstream Effect Monitoring Locations
7. Reed Copper Project Water Quality Management Contingency Plan
8. Reed Mine Water Sampling Matrix
9. Proposed Reed Mine Downstream Effects Monitoring Matrix
10. Figure – Site Location
11. Ouellet's Septic Approval Letter
12. Figures – Caribou Tracking Data (7 Figures)
13. Reed Copper Project Surface Emergency Procedures
14. Highway Traffic Board Permit

Memo

To Jay Cooper
From Heather Brickner
Date June 12, 2013
Subject **Reed waste rock sampling program**

A rock sampling program has been implemented at Reed Copper Project to monitor the acid generating potential of mine waste rock. The decline is currently under construction, and to date has reached approximately 670m in total length and 60m of vertical depth. All rock from the blasting at the face of the decline is trucked to surface for storage on a limestone-lined waste rock pad, which has been designed with the assumption that all waste rock is potentially acid generating (PAG) and not non-acid generating (NAG). All waste rock at the Reed Copper Project is assumed to be PAG, and handled accordingly.

The waste rock sampling program consists of the following:

- As many as two daily composite waste rock samples are collected from the muck at the face (up to two rounds of decline advancement per day).
- The waste rock is sampled by a mine planner with many years of mining experience, and who is also very familiar with the geology of the mine.
- Samples are shipped to Hudbay's internal assay lab in Flin Flon, Manitoba, for acid-neutralizing potential / acid-generating potential analysis (ANP-AGP).
- The ANP-AGP results can be used to determine what lift on the stockpile PAG material is and approximate volume.

The results of the ANP-AGP analysis from March 27 to April 13, 2013 are included below in Table 1. None of these samples were found to be acid generating. Percent sulfur results for waste rock samples collected from April 17 to May 16, 2013 are included in Table 2. Based on previous ANP-AGP results of the Reed waste rock, these very low percent sulfur results indicate that it is very unlikely that any of these samples are acid generating.

Earlier samples collected from the waste rock pile were also found to be non-acid generating (refer to attached memo *Reed waste rock sampling PAG* dated May 13, 2013). To date the only waste rock

samples that had been found to be slightly acid generating were of drill core samples taken close to the ore body (prior to Advanced Exploration Project); these samples had fairly low percent sulfur content levels. Refer to the attached drawing for the drill core sample locations, and to Table 3 for the ANP-AGP results.

Table 1: ANP-AGP results for the Reed Copper Project waste rock samples from March 27 to April 13, 2013.

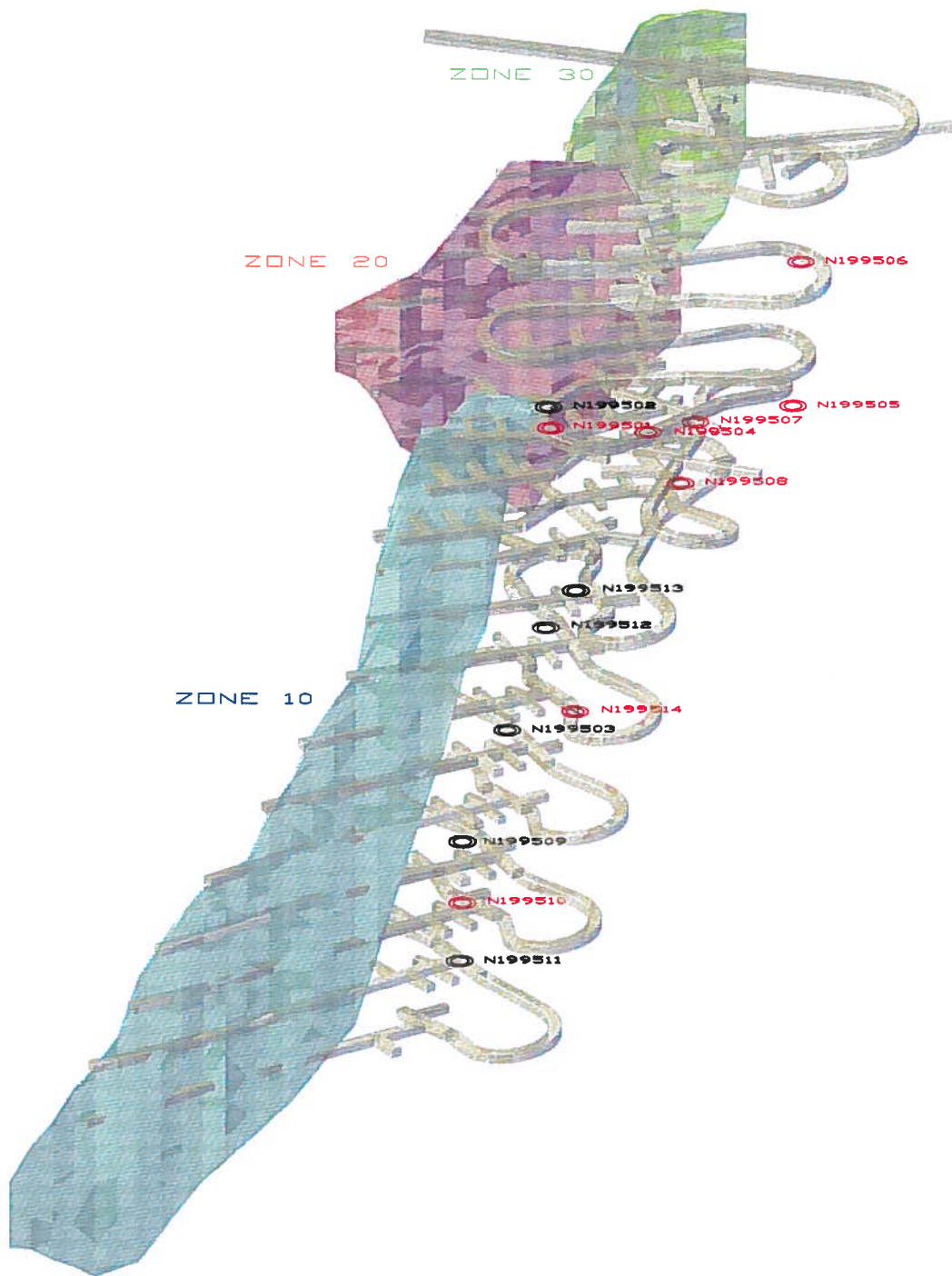
Sample Date	Acid Neutralization Potential (kg CaCO ₃ / t)		Sulfur %	Acid Generation Potential (kg CaCO ₃ / t)	Net Neutralization Potential (kg CaCO ₃ / t)	Ratio ANP : AGP	Comments
27-Mar-13	112.5	56.3	0.02	0.6	55.6	90.0 : 1.0	non-acid generating
28-Mar-13	162.2	81.1	0.01	0.3	80.8	259.5 : 1.0	non-acid generating
1-Apr-13	65.3	32.7	0.01	0.3	32.3	104.5 : 1.0	non-acid generating
2-Apr-13	168.3	84.2	0.06	1.9	82.3	44.9 : 1.0	non-acid generating
4-Apr-13	87.6	43.8	0.02	0.6	43.2	70.1 : 1.0	non-acid generating
5-Apr-13	153.4	76.7	0.16	5.0	71.7	15.3 : 1.0	non-acid generating
6-Apr-13	72.4	36.2	0.02	0.6	35.6	57.9 : 1.0	non-acid generating
7-Apr-13	127.8	63.9	0.03	0.9	63.0	68.2 : 1.0	non-acid generating
8-Apr-13	68.5	34.3	0.01	0.3	33.9	109.6 : 1.0	non-acid generating
9-Apr-13	141.4	70.7	0.01	0.3	70.4	226.2 : 1.0	non-acid generating
10-Apr-13	80.8	40.4	0.04	1.3	39.2	32.3 : 1.0	non-acid generating
11-Apr-13	78.7	39.4	0.04	1.3	38.1	31.5 : 1.0	non-acid generating
11-Apr-13	55.3	27.7	0.01	0.3	27.3	88.5 : 1.0	non-acid generating
12-Apr-13	79.4	39.7	0.01	0.3	39.4	127.0 : 1.0	non-acid generating
13-Apr-13	199	99.5	0.01	0.3	99.2	318.4 : 1.0	non-acid generating

Table 2: Percent sulfur results for the Reed Copper Project waste rock samples from April 17 to May 16, 2013.

Sample #	Sample Date	Sulfur (%)
ANP 48022K	17-Apr-13	0.009
ANP 48023K	18-Apr-13	0.005
ANP 48024K	19-Apr-13	0.004
ANP 48025K	22-Apr-13	0.003
ANP 48026K	23-Apr-13	0.003
ANP 48027K	24-Apr-13	0.003
ANP 48028K	25-Apr-13	0.001
ANP 48029K	26-Apr-13	0.002
ANP 48030K	1-May-13	0.006
ANP 48032K	2-May-13	0.006
ANP 48033K	2-May-13	0.004
ANP 48034K	8-May-13	0.004
ANP 48035K	7-May-13	0.003
ANP 48036K	3-May-13	0.003
ANP 48041K	9-May-13	0.006
ANP 48042K	9-May-13	0.004
ANP 48043K	10-May-13	0.003
ANP 48044K	10-May-13	0.002
ANP 48045K	14-May-13	0.049
ANP 48046K	14-May-13	0.003
ANP 48047K	16-May-13	0.004

Table 3: ANP-AGP results from the Reed Copper Project drill core samples, dated June 2011. Sample locations are shown in the drawing on the following page.

Sample Date	Sample #	Acid Neutralization Potential		Sulfur (%)	Acid Generation Potential (kg CaCO ₃ / t)	Net Neutralization Potential (kg CaCO ₃ / t)	Ratio ANP : AGP		Comments
		Lab Result	kg CaCO ₃ / t						
June 2011	N199501	28.16	14.1	0.32	10.0	4.1	1.4	: 1.0	Acid (basalt)
June 2011	N199502	123.53	61.8	0.35	10.9	50.8	5.6	: 1.0	Neutral (basalt)
June 2011	N199503	126.37	63.2	0.31	9.7	53.5	6.5	: 1.0	Neutral (basalt)
June 2011	N199504	53.78	26.9	0.3	9.4	17.5	2.9	: 1.0	Acid (basalt)
June 2011	N199505	29.44	14.7	0.28	8.8	6.0	1.7	: 1.0	Acid (basalt)
June 2011	N199506	73.84	36.9	0.3	9.4	27.5	3.9	: 1.0	Acid (basalt)
June 2011	N199507	27.85	13.9	0.3	9.4	4.6	1.5	: 1.0	Acid (basalt)
June 2011	N199508	38.29	19.1	0.3	9.4	9.8	2.0	: 1.0	Acid (basalt)
June 2011	N199509	108.43	54.2	0.29	9.1	45.2	6.0	: 1.0	Neutral (basalt)
June 2011	N199510	60.29	30.1	0.29	9.1	21.1	3.3	: 1.0	Acid (qtz fsp porphyry)
June 2011	N199511	130.13	65.1	0.33	10.3	54.8	6.3	: 1.0	Neutral (basalt)
June 2011	N199512	162.8	81.4	0.3	9.4	72.0	8.7	: 1.0	Neutral (basalt)
June 2011	N199513	137.22	68.6	0.29	9.1	59.5	7.6	: 1.0	Neutral (basalt)
June 2011	N199514	65.59	32.8	0.52	16.3	16.5	2.0	: 1.0	Acid (basalt)



REVISIONS	No.	DATE	MADE BY	APP BY	DESCRIPTION



Reed Mine		MINE ENGINEERING		DWG. No.	REV.
PAG/NAG SAMPLE LOCATIONS		SCALE: 1:2000		0	
Oblique 3D Sectional View Looking Towards Azimuth 045		LAST EDITED: 2013/04/11		DRAWN BY:	
		CHECKED BY:			
		APPROVED BY:			
		CAD FILE DIR:			

Memo

To Jay Cooper
From Heather Brickner
Date May 13, 2013
Subject Reed waste rock sampling PAG

On March 22, 2013, a site inspection and sample collection of the waste rock stockpile at the Reed Project was completed by Heather Brickner and James Dauk. Eleven (11) waste rock samples were collected from the waste rock stockpile; GPS coordinates were recorded with the handheld GPS unit. The surface area of the waste rock pile was also recorded using GPS coordinates. The locations of the waste rock samples and the area of the pile are shown below in Figure 1. The total surface area of the stockpile is 4317 m² or 0.4317 hectares.

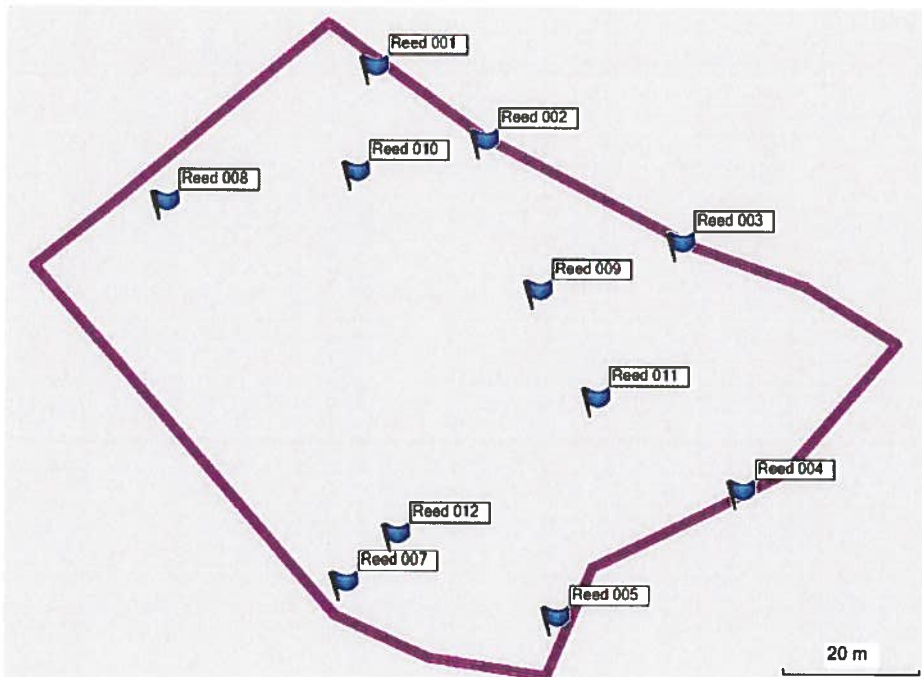


Figure 1: Reed Project waste rock pile and sample locations, dated March 22, 2013.

Waste rock samples were collected along the outside face of the waste rock pile (Reed 001 through Reed 005, and Reed 007). Not all areas were safely accessible, and these areas were not sampled. The remaining samples, Reed 008 to Reed 012, were sampled from the top of the waste pile. The northwest corner of the stockpile was not sampled either, as it was not safe to access. The samples were collected randomly, and included only the darker waste rock, and no limestone samples.

The results of the ANP-AGP analysis, completed at the Hudbay analytical lab, are included below in Table 1. None of the samples were found to be acid generating.

Table 1: ANP-AGP results for the Reed Project waste rock samples.

Sample #	Acid Neutralization Potential		Sulfur (%)	Acid Generation Potential (kg CaCO ₃ / t)	Net Neutralization Potential (kg CaCO ₃ / t)	Ratio ANP : AGP		Comments
	Lab Result	kg CaCO ₃ / t						
Reed 001 20130322	45.65	22.8	0.02	0.6	22.2	36.5	: 1.0	non-acid generating
Reed 002 20130322	45.85	22.9	<i>0.01</i>	0.3	22.6	73.4	: 1.0	non-acid generating
Reed 003 20130322	51.42	25.7	<i>0.01</i>	0.3	25.4	82.3	: 1.0	non-acid generating
Reed 004 20130322	40.14	20.1	0.01	0.3	19.8	64.2	: 1.0	non-acid generating
Reed 005 20130323	59.85	29.9	0.01	0.3	29.6	95.8	: 1.1	non-acid generating
Reed 007 20130322	79.59	39.8	0.01	0.3	39.5	127.3	: 1.2	non-acid generating
Reed 008 20130322	84.9	42.5	0.01	0.3	42.1	135.8	: 1.3	non-acid generating
Reed 009 20130322	43.24	21.6	<i>0.01</i>	0.3	21.3	69.2	: 1.4	non-acid generating
Reed 010 20130322	48.61	24.3	<i>0.01</i>	0.3	24.0	77.8	: 1.5	non-acid generating
Reed 011 20130322	78.15	39.1	<i>0.01</i>	0.3	38.8	125.0	: 1.6	non-acid generating
Reed 012 20130322	48.22	24.1	<i>0.01</i>	0.3	23.8	77.2	: 1.7	non-acid generating

NOTE: Italicized sulfur content numbers are below the detection limit of 0.01

Reed Project Acid-Base Accounting

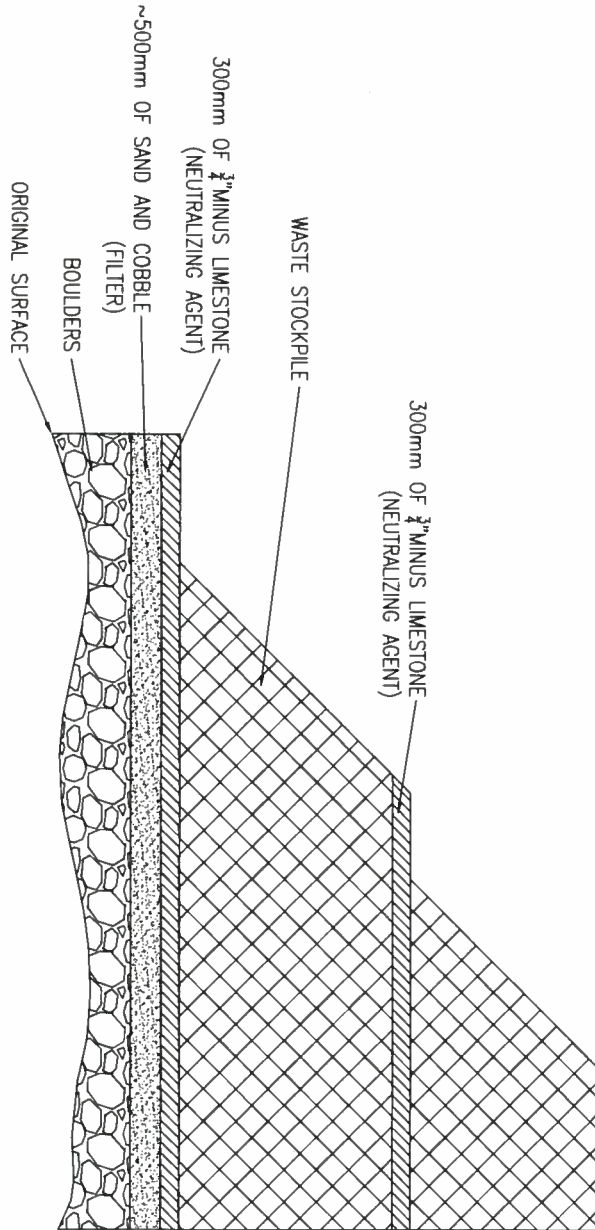
Special Samples

Sample Date	Sample Location	Sample #	Acid Neutralization Potential (kg CaCO ₃ / t)	Sulfur (%)	Acid Generation Potential (kg CaCO ₃ / t)	Net Neutralization Potential (kg CaCO ₃ / t)	Ratio ANP : AGP	Visual Inspection	
								Comments	By
	Limestone	48037 K	95.0	0.02	0.6	94.4	152.0 : 1.0		
	Limestone	48038 K	95.0	0.01	0.3	94.7	304.0 : 1.0		
	Limestone	48039 K	95.0	0.01	0.3	94.7	304.0 : 1.0		
	Limestone	48040 K	95.0	0.02	0.6	94.4	152.0 : 1.0		
Average			95.0	0.02	0.5	94.5	228.0 : 1.0		

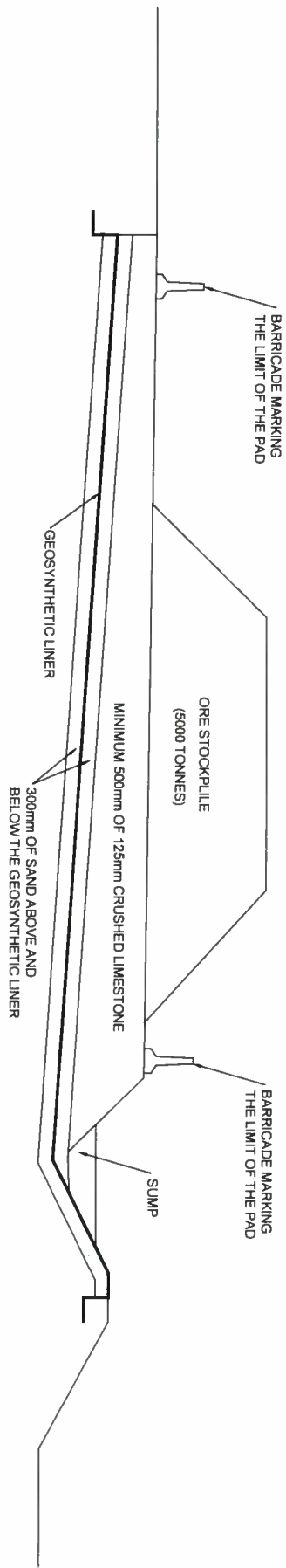
Notes: Maximum reportable limit for ANP is 190 lbs H₂SO₄ / ton (or 95 kg CaCO₃ / tonne)

1 kg CaCO₃ neutralizes 0.98 kg H₂SO₄ (molar ratio of 98.0758 g H₂SO₄ to 100.088 g CaCO₃)

Scale: NTS
Drawing Provided by Hudbay



Scale: NTS
Drawing Provided By: Hudbay



CONSTRUCTION GUIDANCE SPECIFICATIONS

1. General

- The purpose of this sedimentation pond is to receive underground mine water flow, allow for suspended solids to drop out of solution and to provide water quality measurements during the Reed Advanced Exploration Project (AEP)
- Containment in this pond will be provided through the construction of berms, made of locally sourced fill, to create a basin.
- Water will be contained in this basin through the use of a low permeability geosynthetic liner. This liner will be supported on a layer of crushed limestone.

2. Materials

- General Fill (Type 1)
 - This material is to be used as general grading fill and for berm backfill, and can be derived from local granular materials classified as SW, SP, SM, GW, GC, and GM (Unified Classification System).
 - It should be free of organic matter, vegetation and other deleterious materials.
 - Oversize materials of, or exceeding, 150mm along its longest axis shall be removed.
 - The material is to be placed in loose lifts not exceeding 300mm thickness and compacted with a minimum of 4 passes from a 10 tonne, smooth drum vibratory roller.
 - Any compacted material that is over wet or showing a rutted or weaving surface shall be removed.
- 19 mm Crushed Limestone (Type 2)
 - This material is to be produced by the contractor from local borrow sources identified by the owner and will need crushing and screening to meet this specification.
 - This material is to provide a firm and stable foundation beneath the geotextile and geosynthetic liner. This material is also used to be used to provide a trafficable surface on the crest of the berms.
 - This material should consist of well graded granular material consisting of sound (durable) class with a maximum particle size of 19mm and less than 20% (of total weight) passing the No.200 sieve (75 microns).
 - This material should be non-plastic, and free of organic matter, vegetation and other deleterious materials.
 - Any rock fragments larger than 19mm along its longest axis are to be removed. No sharp rocks or debris are to be left at surface.
 - This material should be placed in loose lifts not exceeding 300mm, wetted and compacted with a minimum of 4 passes from a 10 tonne, smooth drum vibratory roller.

3. 125 mm Crushed Limestone (Type 3)

- This material is to be produced by the contractor from local borrow sources identified by the owner and will need crushing and screening to meet this specification.
- This material is to be placed at the base of the outlet channel slope, between the geotextile and rip rap
- This material should consist of poorly graded granular material consisting of sound (durable) class with a maximum particle size of 125mm and less than 10% (of total weight) passing the No.200 sieve (75 microns).
- This material should be non-plastic, and free of organic matter, vegetation and other deleterious materials.
- This material should be placed in loose lifts not exceeding 300mm. No compaction is required for this material.

4. Rip Rap (Type 4)

- This material is to be produced by the contractor from local borrow sources identified by the owner.
- This material is to be placed at the base of the outlet channel slope to assist in energy dissipation of the flow.
- This material should consist of cobbles and boulders, larger than 100mm in diameter and not to exceed 500mm in diameter.
- This material should be free of organic matter, vegetation and other deleterious materials.

5. Non-Woven Geotextile

- The non-woven geotextile will be placed on top of Type 2 material and will act as a protective layer between any angular rock fragments and the geosynthetic liner.
- This material is to be Nixex 451BE (or equivalent), and shall conform to the GRI Test Method GT12(e) Test Methods and Properties for Non-Woven Geotextiles Used as Protection (or Cushioning) Materials.
- The prepared Type 2 base is to be inspected and approved in writing by the liner installation foreman before any geotextile or liner is placed.

6. Geosynthetic Liner

- Containment within the sedimentation pond will be provided by a reinforced LLDPE geosynthetic liner.
- This material is to be Dura Sticm UC68 (or equivalent).
- This material must meet GRI Test Method GM25 Test Methods, Test Properties and Tearing Frequency for Reinforced Liner Low Density Polyethylene (LLDPE-R) Geomembranes, Category 2.
- This supplier of this material is to provide a factory fabricated geosynthetic liner to be supplied to the site in one piece to match the geometry of as-constructed earthworks, so there will be no need for field seaming. The geomembrane will be factory seamed to extend fully across the width of the anchor trenches.

3. Execution

- Sub-excavation Details
 - No person shall enter an excavation until it meets OHMS standards for trenches and excavations.
 - Prior to excavation an original ground survey shall be made, and the sub-excavation limits or centerlines shall be surveyed.
 - Excavation is required within the base of the sedimentation pond to reach the design lines and elevations, as shown on the plan and sections.
 - Excavations shall be maintained in a well-drained condition and free of ponded water at all times.
 - The excavations are expected to be above the water table; however, if the water table is encountered, measures shall be taken to ensure pressure will not build up under the geosynthetic liner.
 - Bedrock may be encountered before the design depth has been reached. If this bedrock is sufficiently high across the width of the pond and would prevent water from flowing toward the outlet, then rock excavation will be required to allow water to flow.
 - If the bedrock is smooth and does not obstruct water flow within the finished pond, the bedrock is to be cleaned and the non-woven geotextile and geosynthetic liner is to be placed directly on the bedrock.
 - If the bedrock surface is pitted or broken, a 100mm (minimum) lift of Type 2 material shall be placed and compacted over the bedrock surface; the geotextile and geosynthetic will then be placed over top of the Type 2 material.
 - Once the design depth has been reached, the sub-grade surface is to be prepared as outlined above in Section 5.
- Sub-Grade Preparation
 - The sub-grade shall consist of in-situ soils and is considered to be any surface which will be covered with fill.
 - Preparation of in-situ soils prior to fill placement shall consist of the removal of organic matter, vegetation and other deleterious materials.
 - Scarification of the sub-grade is required to a depth of 300mm. Oversize materials, greater than 150mm in diameter, shall be removed. Any soft or saturated soils encountered during scarification are to be removed and replaced with Type 1 material.
 - The sub-grade is to be compacted with a minimum of 4 passes from a 10 tonne, smooth drum vibratory roller.

3. Constructed Berms

- Prior to the placement of any fill, an original ground survey is to be completed.
- The construction contractor will be responsible for the accurate construction of all earthworks in accordance with the design specifications.
- Areas where fill is to be placed shall be free of snow, ice, wet or soft material or other deleterious materials.
- The berms, which will provide containment and form the sides of the sedimentation pond, shall be constructed with Type 1 material to the design lines and elevations shown on the plan and sections. Type 2 material will also be acceptable.
- A layer of Type 2 material, 0.3m thick, will be placed along the width of the crest and along the slope of the berm which is to receive geosynthetic liner placement.

6. The side slopes of the berms are to be 2.5H:1V

- The crest width of the berm will be 4.5m on the north side of the pond to allow for potential vehicle access. The remainder of the berms will have a 3.0m width as no vehicle access is deemed necessary.

4. LLDPE Geosynthetic Liner Installation

- The Type 2 surface should be drum roller compacted to create a smooth surface. It should be free of rocks that are sharp or larger than 19mm along its longest axis, wood fragments or other debris which could potentially puncture the liner.
- This surface is to be inspected by the Owner, or designee, and the liner installer foreman and approved prior to the placement of geotextile. The liner foreman shall provide written approval of the surface.
- Non-woven geotextile shall be placed directly over the compacted Type 2 material to provide a protective layer whenever geosynthetic liner is to be installed. Care must be taken in deploying the geotextile so as not to disturb the compacted subgrade.
- Each panel of geotextile will have a minimum overlap of 150mm with adjacent panels. Geotextile shall be deployed in a fashion that ensures all panel edges are in a direction normal to the slope.
- The LLDPE geosynthetic liner will be unrolled and unrolled with the help of a picker crane or other equipment in such a way as to not disturb the prepared subgrade and geotextile. Construction equipment shall not be permitted on the geotextile.
- The LLDPE geosynthetic liner shall be filled into place directly over the non-woven geotextile. Dragging of the liner should be avoided as this may cause the liner to rip or tear.
- No cutting of liner shall be permitted.

- Both the geotextile and the LLDPE geosynthetic are to be keyed in to anchor trenches along all finished edges as indicated on the drawings. The anchor trench will run around the perimeter of the pond, along the crest of the berms. The anchor trench will be a minimum 0.5m deep and 0.5m wide and is to be excavated directly into the Type 1 berms 0.5m away from the upstream crest edge. The anchor trenches are to be backfilled with Type 1 material and compacted by running a piece of wheeled construction equipment along the top of the trench.
- The LLDPE geosynthetic liner will be left uncut in the remainder of the pond. No fill materials shall be placed over the liner.
- The contractor installing the geosynthetic liner shall be responsible for repairing any damage to the liner incurred during installation. Any repairs are to be conducted in such a way as to maintain the supplier's warranty.

- The supplier is to provide a warranty stating that the LLDPE geosynthetic liner is suitable for its intended use, and it has been manufactured, seamed and installed to meet the requirements of the standard 15 year warranty provided by the manufacturer. The certificate of warranty is to be provided to the owner by the supplier.

5. Pond Outlet

- The outlet will be lined with non-woven geotextile and LLDPE geosynthetic liner. The LLDPE geosynthetic liner installed within the outlet may consist of a panel independent of the main pond liner; however, only a single panel is to be used for the entire length of the outlet, as shown on the drawings.
- The LLDPE geosynthetic liner installed within the outlet is to be affixed to the LLDPE geosynthetic liner within the pond using mouldable sealant. The exposed overlapping edge between panels of LLDPE geosynthetic liner is to face the outlet of the pond. The minimum overlap is 500mm.
- A riprap flow diffuser will be placed at the toe of the berm to reduce erosion potential of the berm slope and natural ground.
- Field adjustments of the riprap flow diffuser alignment may be required to provide a suitable flow direction in a generally southeast bearing, and particularly away from the berm toe.
- The riprap flow diffuser will be entirely underlain by non-woven geotextile.
- Field grading may be required downstream of the riprap flow diffuser to provide a suitable flow direction in a generally southwest bearing, and particularly away from the berm toe.

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BGC ENGINEERING INC.
 10000 101ST AVE. S.W. UNIT 100
 SURREY, B.C. V3V 2K9
 TEL: 604-273-8888
 FAX: 604-273-8889
 WWW.BGCENGINEERING.COM

HUBBAY

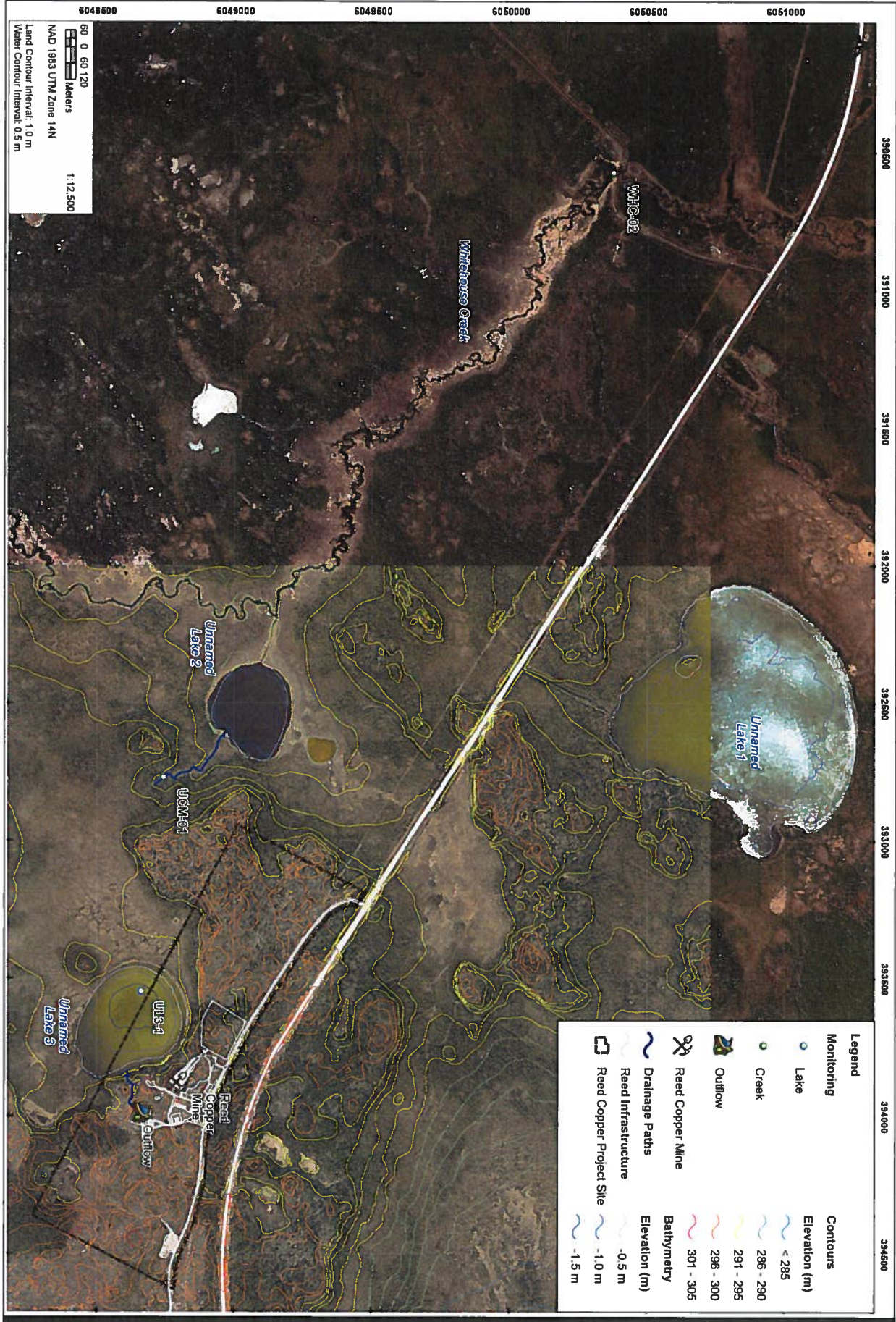
DRAFT

REVISION HISTORY

DATE: 10/10/2014
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]

PROJECT: [Project Name]
 SHEET: [Sheet Number] OF [Total Sheets]

SCALE: [Scale]





Reed Copper Project Water Quality Management Contingency Plan

In the event that water quality at the Reed Copper Project does not meet guidelines, Hudbay will implement a phased approach to water quality management at the site.

Phase 1 - Chemical / Physical Treatment

Depending on the nature of the water quality issue, chemical treatments will be considered. Based on Hudbay's experience operating other base metal mines in the Flin Flon / Snow Lake area, the following issues are likely to arise that may necessitate chemical treatment:

- Elevated total suspended solids (TSS) concentrations – During mine development, elevated TSS levels can occur. TSS levels will generally be managed by the installation of underground mine sumps. However, in the event that mine sumps prove to be insufficient, a flocculent can be added to the mine discharge to reduce TSS concentrations.
- Elevated metal concentrations – Base metal mines operated by Hudbay have historically contained metals, particularly copper and zinc. In the event of elevated metal concentrations, precipitation of metals as a hydroxide sludge by the addition of lime has proven very successful.
- Elevated pH levels – Elevated pH levels during mining can occur as the result of the use of shotcrete (a cement product used for minimizing groundwater infiltration) or lime, particularly if lime is utilized as a treatment for lowering metal concentrations. In cases of low volume discharges such as those expected at the Reed Copper Project, injection of carbon dioxide is typically sufficient to reduce effluent pH to less than 9.5.

Physical treatment options (silt curtains, adsorbent booms, etc.) may be installed separately or in concert with chemical treatment.

Phase 2 – Polishing Pond Expansion

An additional polishing pond will be constructed in the area adjacent to the existing pond to facilitate more effective water treatment. The additional residence time of the second pond will assist with settling elevated TSS originating in the mine effluent or generated as hydroxide sludges resulting from lime addition. Settled solids will be removed by switching to single pond operation, allowing the non-operating pond to be cleaned while still providing water treatment.

Phase 3 – Water Treatment Plant

In the event that chemical treatment and expansion of the polishing pond still do not allow water quality to meet applicable guidelines, Hudbay would then consider the use of a portable mine water treatment plant, which would be designed to meet the water conditions specific to the Reed Mine.

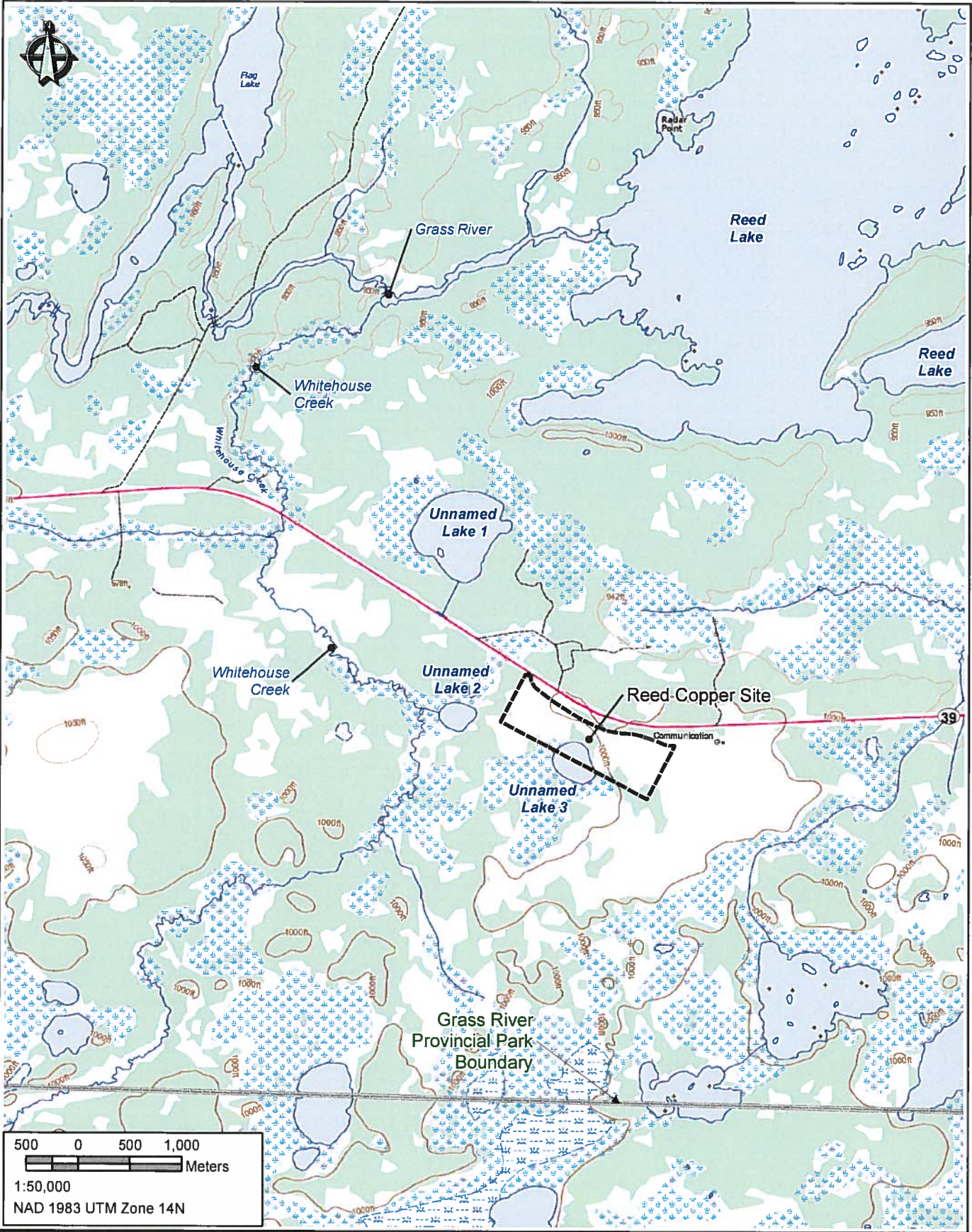
Document No.:	ENC-505
Date of Issue:	2013-05-17

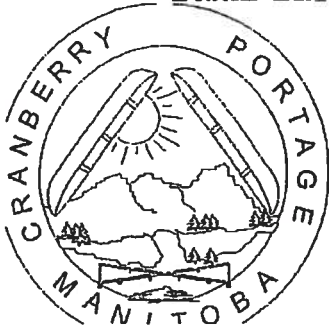
Location	Sampling For	Frequency	Sample bottle size	Substance	Parameters		Regulatory Document	Name	Lab		Data Input	Report Required
					grab limit (mg/L)	monthly mean limit (mg/L)			Method			
Reed Mine Sedimentation / Polishing Pond (RPSS)	Metals	Weekly (during discharge)	500 ml	Zn	N/A	N/A	NR	HBMS	LAL-181	D1, D2, D3	ENC-506	
				Cu					LAL-181			
				Pb					LAL-181			
				Ni					LAL-181			
				As					LAL-141			
				Mn, Fe, Cd					LAL-181			
				pH range					ENI-602			
				Conductivity					ENI-602			
				Temp					ENI-602			
				TSS					ENI-602			
Reed Mine Mine site Groundwater Well (RPMW)	Metals	Monthly	500 ml	Cu, Zn, Fe, Pb, Cd, Mn, Ni	N/A	N/A	NR	HBMS	LAL-181	D1, D2, D3	N/A	
				Ca, Mg, Na, K					LAL-091			
				As					LAL-141			
				SO4					LAL-088			
				CO3, HCO3					LAL-083			
				TSS					LAL-083			
				TSS					LAL-083			
				TSS					LAL-083			
				Coliforms					APHA 9222D, 1998			
				Field Data					ENI-602			
Reed Mine Camp Groundwater Well (RPCM)	Metals	Monthly	500 ml	Cu, Zn, Fe, Pb, Cd, Mn, Ni	N/A	N/A	NR	HBMS	ENI-602	D1, D2, D3	N/A	
				Ca, Mg, Na, K					LAL-181			
				As					LAL-091			
				SO4					LAL-141			
				CO3, HCO3					LAL-088			
				TSS					LAL-083			
				TSS					LAL-083			
				TSS					LAL-083			
				Coliforms					APHA 9222D, 1998			
				Coliforms					ENI-602			

Document No.:	ENC-505
Date of Issue:	2013-05-17

Location	Sampling For	Frequency	Sampling size	Parameters		Regulatory Document	Name	Lab		Data Input	Report Required	
				Substance	grab limit (mg/L)			monthly mean limit (mg/L)	Method			
Reed Mine - Downstream Effects Monitoring												
Reed Mine #3 (UL2)	Field Data	3x per year	100 ml	pH	N/A		NR	Field tech	ENI-602	D5	N/A	
				Temp	N/A				ENI-602			
				Conductivity	N/A							
				Dissolved Oxygen	N/A							
	Reed Package	3x per year	?	Total Metals	N/A		NR	ALS	A048.10	D5	N/A	
				Dissolved Metals	N/A				A268.06			
				NH3, NO3, TKN	N/A				A510.07			
				Total Dissolved Nitrogen	N/A				A268.04			
				TSS, TDS, Turbidity	N/A				A259.02			
				SO4	N/A				A009.07			
				Hardness	N/A				?			
				Hg (ultra-trace)	N/A							
				pH	N/A							
				Temp	N/A							
				Conductivity	N/A							
				Dissolved Oxygen	N/A							
	Reed Package	3x per year	?	Total Metals	N/A		NR	Field tech	A048.10	D5	N/A	
				Dissolved Metals	N/A				A268.06			
				NH3, NO3, TKN	N/A				A510.07			
				Total Dissolved Nitrogen	N/A				A268.04			
				TSS, TDS, Turbidity	N/A				A259.02			
				SO4	N/A				A009.07			
				Hardness	N/A				?			
				Hg (ultra-trace)	N/A							
				pH	N/A							
				Temp	N/A							
				Conductivity	N/A							
				Dissolved Oxygen	N/A							
	Field Data	3x per year	100 ml	Total Metals	N/A		NR	Field tech	ENI-602	D5	N/A	
				Dissolved Metals	N/A				ENI-602			
				NH3, NO3, TKN	N/A							
				Total Dissolved Nitrogen	N/A							
				TSS, TDS, Turbidity	N/A							
				SO4	N/A							
				Hardness	N/A							
				Hg (ultra-trace)	N/A							
				pH	N/A							
				Temp	N/A							
				Conductivity	N/A							
				Dissolved Oxygen	N/A							
	Reed Package	3x per year	?	Total Metals	N/A		NR	ALS	A048.10	D5	N/A	
				Dissolved Metals	N/A				A268.06			
				NH3, NO3, TKN	N/A				A510.07			
				Total Dissolved Nitrogen	N/A				A268.04			
				TSS, TDS, Turbidity	N/A				A259.02			
				SO4	N/A				A009.07			
				Hardness	N/A				?			
				Hg (ultra-trace)	N/A							
				pH	N/A							
				Temp	N/A							
				Conductivity	N/A							
				Dissolved Oxygen	N/A							

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 Checked
 Project Management Initials: Designer
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**THE R.M. OF KELSEY/LOCAL URBAN DISTRICT
OF CRANBERRY PORTAGE**

Box 209 - Cranberry Portage, Manitoba ROBOHO

Phone No. 472-3219

Fax No. 472-3115

Email: ludcran@mymts.net

May 13, 2013

Ouellet's Septic
Box 218
Cranberry Portage, Manitoba
ROB OH0

Dear Martin & Donna:

Thank you for attending our meeting on May 9, 2013 to update the LUD Committee of Cranberry Portage on your business plan.

The Committee has discussed your request for a five year commitment. The decision of the Committee is to have you provide your log books quarterly to the office for their perusal. They also decided that no more than 16,000 gallons of sewage per week may be hauled from Reed Lake Camp to our lagoon in Cranberry Portage, Manitoba.

Wishing you well in your endeavors and much success with your business.

Should you have any questions or concerns regarding the above, please feel free to contact our office.

Yours truly,

Brenda Gryba, Administrative Assistant
R.M. of Kelsey/L.U.D. of Cranberry Portage

Form No.:	RMP-101
Date of Issue:	2012-10-15

Printed Version Not Controlled, Refer to Online Document for Current Information.



Reed Copper Project Surface Emergency Procedures

Form No.:	RMP-101
Date of Issue:	2012-10-15

Printed Version Not Controlled, Refer to Online Document for Current Information.

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 - 1.2 **Contractor Supervisor**
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4. **In Case of Forest Fire**
5. **Main Site Evacuation**
6. **Environmental Incident**
7. **Threat Procedure**
8. **The Mine Site Senior Supervisor (or designate) duties**
9. **Emergency Contact List**
 - 11.1 **Hudbay Management**
 - 11.2 **Other Phone Numbers**

Form No.:	RMP-101
Date of Issue:	2012-10-15

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1. Emergency Call Information:

Contact your supervisor and / or

Call – 1-204-687-2291

1.1 Give:

- Your name.
- Nature of incident.
- Location of the incident.
Reed Copper Project Main site is located 52km East on PTH 39 from PTH 10 intersection
Lat. / Long. N54 34 29.8, W100 37 48.4 (General Area)
- Type of assistance required.
- Ensure you give casualties name and other particulars
- Be the last to hang up to ensure that the Plant Protection Officer has all the required information of the situation and request help as required (see - **Emergency Contact List** below).
- Report back that once emergency services have responded.
- Assign a person to meet the Ambulance, Fire truck or Police and direct them to emergency situation.

1.2 Supervisor in charge or Designate:

- Take charge of the scene and organize onsite help.
- Ensure that HUDBAY Plant Protection at 1-204-687-2291 has been notified and appropriate help is on the way.
- Contact and inform of the situation and request help as required (see - **Emergency Contact List** below).
- Assign a person to meet the Ambulance, Fire truck or Police and direct them to emergency situation.

2. In Case Of Injury:

The following, is a guide in the event of an injury related incident at the Reed Copper Project Site:

The person(s) discovering the injured will render any assistance for which they are qualified, and without endangering themselves, ensure that further injury is avoided.

If in your judgment, the injury is of a minor nature but the employee should seek medical help they may be transported via a contractor company vehicle to the Snow Lake or Flin Flon Hospital. (As long as injured is comfortable and risk of further injury is not a concern).

Form No.:	RMP-101
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Printed Version Not Controlled, Refer to Online Document for Current Information.

ALWAYS request an Ambulance for any of the following:

Head injury, chest pain, electric shock, loss of consciousness, serious bleeding, serious burns, breathing problems, if gassed, if being transported in a stretcher, in any known pre-existing medical conditions which may complicate the situation, if the victim is in shock, or if in doubt.

Call 1-204-687-2291, if Emergency Medical Assistance is required.

Notify supervisor and contact Hudbay Project Management (see - **Emergency Contact List** below).

If a back injury is suspected, make area safe, steady and support the head and neck and maintain patient airway. Only personnel qualified in spinal immobilization should package and transport the casualty. If not qualified in spinal immobilization and patient is conscious communicate with them not to move. Treat for shock by covering them to keep them warm, be positive and reassuring

All company and contractor pick up trucks, and all buildings designed for continuous occupancy, are to have first aid kits available.

3. In Case Of Fire:

If Safe to do so, make an attempt to extinguish the fire using the fire suppression system or a hand held extinguisher.

If the fire cannot be extinguished or is out of control, clear the area to ensure everybody's safety.

Call 1-204-687-2291 if Emergency Fire Assistance is required.

Notify supervisor and contact Hudbay Management (see **Emergency Contact List** below).

If you detect fire or smoke:

Sound the fire alarm using the on-site air horns (three short blasts).

If you hear alarm:

Leave your work area / office/changehouse immediately by nearest fire exit.

As instructed by the Fire Marshall; congregate at the designated primary or secondary assembly location.

Primary Evacuation site is at the Reed Copper Project Offices.

Secondary Evacuation site in the event the Project office is too close to the fire the alternate evacuation site is the West mine access road at the intersection of Highway #39.

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1. In the event of an emergency camp evacuation the on site **designated Fire Marshall** must ensure that all on-site personnel have left the premises for the designated evacuation site. To do this the Fire Marshall shall enlist the services of another to assist and physically go and check the camp trailers / rooms, out buildings, tents etc. and report back to the Fire Marshall advising that these facilities are "all clear" of personnel. The use of a sign-in book or tag in board should be used.
2. All on-site personnel must be familiar with the evacuation plans and must know where to meet in case of emergency.
3. All on-site personnel are to meet at the evacuation area where the designated Fire Marshall will check that those present are all those known to have been in camp. Missing personnel are to be identified and located and/or the location of their whereabouts must be ascertained, i.e. at the mine excavation site, traveling, etc.
4. In the event of a fire, plant protection is responsible to notify the closest available local volunteer fire department of the situation.
5. If the evacuation is immediate such as due to forest fire, personnel will be informed of the immediate emergency situation, and will be grouped and evacuated via vehicles to Cranberry Portage. If this is not feasible (road blocked by fire) then personnel will be evacuated by vehicle to Snow Lake. If that is not possible it may be necessary to use a helicopter (if available) to evacuate to a nearby "safe site(s)" (e.g. Snow Lake). This form of evacuation may be weather dependant.
6. The Fire Marshall is to keep HBMS / Flin Flon and the Project Superintendent updated as to the situation.

4. In Case of Forest Fire:

In the event of a nearby Forest Fire, contact Project Superintendent, Health & Safety or designates who will notify the appropriate personnel including supervision at the Mine. (see - **Emergency Contact List** below).

Other resources:

Snow Lake Natural Resources	1-204-358-2521
Cranberry Portage Natural Resources	1-204-472-3331

5. Main Site Evacuations:

5.1 At Reed Project Camp:

As the Reed Lake Camp has no automated fire alarm, air horns are located throughout the camp in various trailers.

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Date of Issue:	2012-10-15

Printed Version Not Controlled, Refer to Online Document for Current Information.

5.2 At Reed Copper Project Office / Changhouse:

In the event of a fire or other emergency in the Site Project office / changehouse requiring evacuation the following procedure is to be followed:

- The person discovering the emergency shall activate the fire alarm
- All doors and windows are closed
- All personnel to evacuate to Site Camp Cafeteria
- Ensure that appropriate help has been notified.

5.3 At the Mine Excavation Site:

If there is a fire or other emergency at the mine excavation site, the workers will move to a safe location and/or return to the office / changehouse.

6. Environmental Incident

Contractors must immediately report any incidents that may have impact on the environment (example: oil or fuel spill) to Hudbay (see - **Emergency Contact List** below)

Reed Management group shall refer to Hudbay Procedure PWP-616 - Environmental Spill Response Plan for information on how to report.

7. Threat – Procedure:

If you receive a threat (i.e. bomb threat / violence etc) whether verbally, written or a recorded phone message from an employee or non employee of HBMS, take the threat seriously and follow the following procedure;

Call 1-204-687-2291 and report the situation, contact your supervisor.

Written or recorded messages should be saved and turned over to the RCMP.

If verbally threatened write down the actual words used. Try to ensure that you are not in danger of being attacked by the individual. Try to attract a fellow workers attention, who can be used as a witness if needed. Attackers are less likely to act in a group situation. Try to stay calm.

Supervisor shall report to Hudbay management team. (see - **Emergency Contact List** below)

8. The Senior Mine Site Supervisor Or Designate Shall:

- Ensure that appropriate help has been notified.
- Assign a person to meet the Ambulance, Fire truck or Police and direct them to emergency situation, if necessary
- Ensure that the scene is secure and will not be disturbed pending investigation.
- Gather pertinent information, set priorities, develop and direct a plan of action if required.
- Contact Reed Project Superintendent



REED COPPER PROJECT SURFACE EMERGENCY PROCEDURE

Form No.:	RMP-101
Date of Issue:	2012-10-15

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(if unable to contact the Project Superintendent - Contact Hudbay Main Gate - Flin
Flon 204-687-2291 and they will get in contact with the necessary people.)

- Contact the H&S Committee and Rep.
- Contact the Mines Inspector

Form No.:	RMP-101
Date of Issue:	2012-10-15

Printed Version Not Controlled, Refer to Online Document for Current Information.

9. EMERGENCY CONTACT LIST

9.1 Hudbay - Reed Project Management:

Hudbay Main Gate - 24 hr. EMERGENCY ... (204) 687-2291

Reed Copper Project - Manager:

Steve Polegato (204) 687-1802 (work)
(204) 687-0727 (cell)
(204) 687-6179 (home)

Reed Copper Project - Foreman:

Don Last (204) 687-1801 (work)
(204) 271-2533 (cell)
(204) 687-5954 (home)

Reed Copper Project - Safety Supervisor:

Bob Lyons (204) 687-2118 (work)
(204) 271-3635 (cell)
(204) 687-7610 (home)

Health and Safety Representative

Tom Lindsey (204) 687-2323 (work)
(204) 687-4623 (home)
(204) 271-4198 (cell)

9.2 Other Phone Numbers:

Cranberry Portage:

- Ambulance (204) 472-3666, 472-3037
- Conservation (204) 472-3331, FAX (204) 472-3542
- RCMP (204) 472-4040

Snow Lake:

- Ambulance (204) 358-2300
- First Aid Centre (204) 358-2300
- Conservation (Fire) 358-2521, 1-800-782-0076 (24hr)
- RCMP (204) 358-7722

Mines Inspector:

Mike Langridge (2 04) 677-6820 (work)
(Thompson) (204) 679-2623 (cell)

Mines Inspector:

Joseph Dobbin (204) 677-6533 (work)
(Thompson) (204) 697-2944 (cell)



**REED COPPER PROJECT
SURFACE EMERGENCY PROCEDURE**

Form No.:	RMP-101
Date of Issue:	2012-10-15

Printed Version Not Controlled, Refer to Online Document for Current Information.

Mines Inspector:

Dan Steppan (204) 687-1621 (work)
(FF - Cranberry) (204) 390-2008 (cell)

Mines Inspector – Director of Mines:

Dennis Fontaine (204) 677-6821 (work)
(Thompson) (204) 679-5406 (cell)

Mines Inspector:

Lorne Uruski (204) 945-1233 (work)
(Winnipeg) (204) 792-6495 (cell)
(204) 667-3822 (home)



Infrastructure and Transportation
Highway Traffic Board

200 – 301 Weston Street, Winnipeg, Manitoba, Canada R3E 3H4
T 204-945-8912 F 204-783-6529

Infrastructure et Transports
Conseil routier

301, rue Weston, pièce 200, Winnipeg (Manitoba) Canada R3E 3H4
Tél. 204 945-8912 Téléc. 204 783-6529

March 22, 2012

Our File: 5/039/021/A/12

Mr. Steve Polegato
Hudson Bay Mining and Smelting Co., Limited
Box 1500
Flin Flon MB R8A 1N9

Dear Mr. Polegato:

Re: THE HIGHWAY TRAFFIC BOARD PERMIT

Enclosed please find a Permit as issued by the Highway Traffic Board. This permit is only valid providing all instructions and conditions are adhered to. In particular, please note CONDITIONS (1) & (3) of this Permit, which provides the address of the Highways Department Technical Services Engineer for your area.

Section 21(2) of the Highways Protection Act provides for an appeal to the issuance of a permit, within thirty (30) days of the date the permit was issued, by the:

- Traffic Authority for the highway;
- Municipality within which the highway or controlled area is situated;
- Owner/Lessee or other person having an interest in the land on which the Permit is issued.

The appeal should be directed to the Public Utilities Board at 400 - 330 Portage Avenue, Winnipeg, Manitoba, R3C 0C4. **No construction should commence within 30 days of the issuance of this permit. Following the 30 days, please contact the Secretary of the Public Utilities Board at (204) 945-2638 to confirm if an appeal has been filed.**

If this Permit does not meet with your satisfaction, please contact this office for further clarification or information.

Yours truly,

A. Rivers
Chairperson

THE HIGHWAY TRAFFIC BOARD

ww

cc: K. Nimchuk, Planning & Design
G. Ceppetelli, Community Planning Services
Crown Lands & Property Agency

Manitoba
spirited energy
vibrant d'énergie

Permit / Permis

Manitoba
Transportation and
Government Services
The Highway
Traffic Board

Transports et
Services
gouvernementaux
Conseil routier



FILE NO./N° DU DOSSIER: 5/039/021/A/12 PLAN NO./N° DU PLAN: 5039020-1-A-12 PERMIT NO./N° DU PERMIS: 045-12

Permit for the erection of structures within controlled areas adjacent to and/or access driveway(s) onto limited access highways/
Permis en vue de l'érection, dans des zones contrôlées, de construction adjacentes à une route à accès limité ou de voies d'accès qui débouchent sur une telle route.

Permission is hereby granted to: / Permis accordé à:

Permittee / Nom du titulaire HUDSON BAY MINING AND SMELTING CO., LIMITED

Address / Adresse Box 1500, Flin Flon, Manitoba R8A 1N9

Registered Land Owner Same as Above or /
Propriétaire foncier inscrit (Voir ci-dessus) ou Crown Lands & Property Agency, 308 - 25 Tupper Street N., Portage la Prairie, Manitoba R1N 3K1

Proposed Use of Property / Occupation prévue de la propriété

Dwelling / Résidentielle Farm / Agricole Commercial / Commerciale Other / Autre Change of land use only / Emploi à d'autres fins seulement

Structure, Driveway or Other Usage Permitted / Construction, voie d'accès ou autre occupation autorisée

Access Driveway, as shown on attached sketch plan.

Set Back from Right-of-Way not less than / Distance minimale par rapport à l'emprise

N/A

Size of Structures / Dimension des constructions

N/A

Location(s) and width(s) of access driveway(s) or already existing / Emplacement et largeur de la ou des voies d'accès proposées ou qui existent déjà

(A) Access Driveway, located 550.0 metres north of the curve (as shown on attached sketch plan). Maximum 10.0 metre top width.

(B) N/A m from boundary of property m wide
m par rapport à la limite de la propriété ayant m de largeur

Description of property situated adjacent to highway / Description de la propriété adjacente à la route

Highway P.T.H. No. 39 Section N.W. 36 Township 64 Range 22 West FLIN FLON ELECTORAL DIVISION
Route n° Section Township Rang

Frontage on highway /
Façade donnant sur la route _____ metres.

Size of property /
Surface de la propriété _____ hectares.

This permit is subject to the following conditions:

Le permis est assujéti aux conditions suivantes:

1. Subject to provisions of the Permits for Location of Structures in Controlled Areas Regulation.
 2. Permit Expiry Date: One year from date issued (see reverse side).
 3. Before any construction is undertaken, contact the Highways Department Technical Services Engineer for supervision regarding approved location, drainage, openings, elevations, etc.
Mr. Sylvester Borsch, Maintenance Superintendent.
115 - 3rd Street, The Pas, Manitoba R9A 1K5 Ph: 627-8305
 4. If any part of the controlled area lying between the site of the permitted buildings and the highway is hereafter required for highway purposes, no damages or compensation shall be paid by the Province for any injurious affection to any thing permitted or to the owners or occupants thereof arising directly or indirectly from said requirements.
1. Respecter les dispositions du Règlement sur les permis pour les constructions dans les zones contrôlées.
 2. Date d'expiration du permis _____.
 3. Avant que les travaux ne commencent, entrer en contact avec l'ingénieur de district du ministère de la Voirie afin qu'il agisse comme superviseur en ce qui concerne notamment l'emplacement, le drainage, les élévations, le diamètre des ponceaux, etc. qui ont été approuvés.
 4. Si une partie quelconque de la zone contrôlée qui se trouve entre le site des bâtiments autorisés et la route est requise plus tard relativement à une route, la province n'a pas à payer de dommages-intérêts ou d'indemnité pour les dommages causés de ce fait, directement ou indirectement, aux choses autorisées ou à leurs propriétaires ou occupants.

NOTE: Permit not valid unless signed, / Remarque: Le permis n'est pas valide tant qu'il n'a pas été signé.

Signature / Signature *Michelle Borsch*

Title / Titre M.A. RIVERS Chairperson / Président

Date Issued / Date de délivrance March 22, 2012

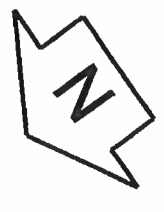
This permit does not relieve the Permittee from complying with any Statute enacted by the Legislature of Manitoba or the Parliament of Canada or of any regulation made under such a Statute or with any town planning scheme or municipal by-laws in the area.

Le titulaire du permis n'est pas dispensé d'observer les lois édictées par la Législature du Manitoba ou le Parlement du Canada ou les règlements d'application de ces lois ou tout schéma d'aménagement urbain ou arrêté municipal en vigueur dans la zone.

PHOTO No. MB92017-51

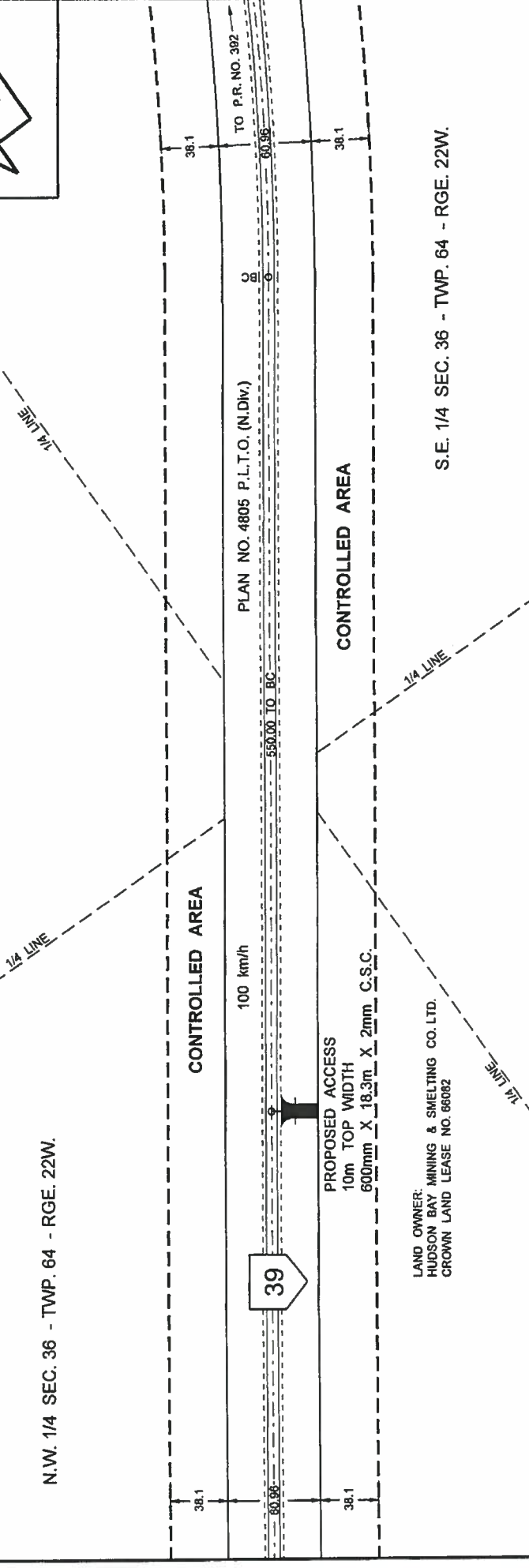
FOR OFFICE USE ONLY

5039020-1A-12
5/039/021A/12



N.E. 1/4 SEC. 36 - TWP. 64 - RGE. 22W.

N.W. 1/4 SEC. 36 - TWP. 64 - RGE. 22W.



LAND OWNER:
HUDSON BAY MINING & SMELTING CO. LTD.
CROWN LAND LEASE NO. 66002

S.E. 1/4 SEC. 36 - TWP. 64 - RGE. 22W.

S.W. 1/4 SEC. 36 - TWP. 64 - RGE. 22W.

APPLICATION
APPROVED

SUBJECT TO CONDITIONS
IN PERMIT No. 045-12
[Signature]
CHAIRPERSON OF THE
HIGHWAY TRAFFIC BOARD
[Signature]
DATE

APPLICANT : HUDSON BAY MINING & SMELTING CO., LTD.

PROPOSED ACCESS

P.T.H. No. 39

N.W. 1/4 SEC. 36 - 64 - 24W.

FLIN FLON ELECTORAL DIVISION

SCALE: 1 : 3000