YESAB
Yukon Environmental and Socio-economic
Assessment Board

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Additional Proposal Information
YESAB Project Number: 2011-0064
Project Title: Whitehorse Copper Tailings Reprocessing and Reclamation

This updated Project Description was provided on July 15, 2011 and has been posted on the YOR as document number 2011-0064-035-1. To avoid confusion, and to make the updated project description easier to find, the original Project Decription (YOR document number 2011-0064-002-1) has been replaced by the updated version. It will now be listed on the YOR as 2011-0064-002-2. The previous version and document number will be marked as obsolete.

Project Description

Whitehorse Copper Tailings Reprocessing & Reclamation Project

July 15, 2011

EAGLE INDUSTRIAL MINERALS

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1 Project Overview

The Whitehorse Copper Tailings Reprocessing & Reclamation Project will reprocess and reclaim the tailings deposits at the abandoned Whitehorse Copper Mine site in Whitehorse, Yukon Territory, Canada. The primary objective of the project will be to reclaim the existing tailings areas to reduce their environmental impact and improve the usefulness of the main tailings storage area as a potential industrial area. In addition to this reclamation objective, the Project will process the tailings to remove magnetite which will be sold as iron ore for use in the steel-making industry.

The site is approximately 8 kilometres south of downtown Whitehorse and approximately 165 kilometres from Skagway, Alaska, where the iron ore will be loaded into ocean-going vessels for shipment to buyers. The site contains approximately 10 million tons of tailings, of which approximately 18-20% is recoverable magnetite.

The Project expects to begin operating upon receipt of all required permits, currently expected to be late 2011 or early 2012, and after a short start-up period, expects to produce approximately 250,000-300,000 tons of magnetite per year for a period of six to seven years, at which time all the tailings will have been processed and the reclamation work will be completed. The Project expects to operate 24 hours per day, seven days per week, and produce approximately 65 tons of magnetite per hour, or approximately 1,500 tons per day. The Project expects to operate approximately seven to eight months per year, closing during the winter months.

2 The Site

2.1 Land Status and Access

2.1.1 Overview

The site is owned by the Government of Yukon and is within the city limits of the City of Whitehorse. The Project has entered into a land lease with the Government of Yukon (the "Yukon Lease"). The Project has also purchased (subject to return to the sellers upon termination of the Project) the nineteen quartz mineral claims which cover the site. The site is approximately 2.8 kilometres from the Alaska Highway, and is accessed via the Mt. Sima Road, which approaches to within approximately 0.5 kilometres of the site. The first two kilometres of the Mt. Sima Road are paved, and the remainder has a good-quality, all-weather, gravel surface. There are numerous existing smaller roads accessing all areas of the site.

A map of the area showing the City of Whitehorse and the project site is included at Exhibit 2.1. An aerial photo of the project site is included as Exhibit 2.2.

2.1.2 Land Tenures

A land tenure search was conducted using a GIS and the most up to date land tenure data from Yukon Geomatics. Land tenure was defined for the area based on a 500 m buffer around the defined project footprint. This 500 m buffer was used to summarize the surrounding land tenure and identify those lots that are adjacent to the project area.

Yukon Lease – The surface rights at the site are owned by the Yukon Government, and the Project has entered into a lease of the surface area. The Yukon Lease is for a term of ten years and gives the Project "the sole and exclusive right to enter upon the Land, solely for the purpose of working the tailings and waste rock in order to extract minerals." All other uses of the site are reserved by the Government. The Yukon Lease requires that the Project own and maintain in good standing the quartz claims underlying the leased land. The Yukon Lease also contains numerous other conditions, including conditions related to operation and reclamation. Additional details and a copy of the Yukon Lease are available up on request.

Mineral Claims – In accordance with the Yukon Lease, the Project has purchased the nineteen quartz mining claims located within the leased land, and all nineteen claims have been recorded with the Yukon Mineral Recorder's office. All nineteen of these claims will be transferred back to the sellers upon completion of the Project. There are 20 other active mineral claims within the 500 m of the project footprint boundary, as listed in Table 1. None of these other claims are included in Yukon Lease and none (other than the Oro claims as described below) will be disturbed by the Project.

Table 1: Mineral claims within 500 m of the project footprint boundary (EMR 2010).

Claim Name & Number	Owner
FYDB 1	Eagle Whitehorse LLC (from Adam Greetham)
FYDB 2-16	Eagle Whitehorse LLC (from Brian Scott)
BOB	Eagle Whitehorse LLC (from Brian Scott)
SHARON	Eagle Whitehorse LLC (from Brian Scott)
CHUCK FRACTION	Eagle Whitehorse LLC (from Brian Scott)
GIN 25-28	Josh Bailey
EVA 11-12	Chris Davis
JUICE 43, 45, 47, 49	Kluane Drilling Ltd.
ORO 1-5	H. Coyne & Sons (Quartz Lease)
PETER 1-2	H. Coyne & Sons (Quartz Lease)
ROCKS 1	Greg Fekete
YT 73	Arcturus Ventures Inc.

Oro Claims - The Project has executed a letter agreement with H. Coyne & Sons, the owner of the Oro 1, Oro 2 and Oro 3 quartz claims which are immediately to the south of the Yukon Lease land. These Oro claims include the Little Chief pit and subsidence areas into which the Project plans to deposit barren tailings, as described below. Under the *Quartz Mining Act*, tailings from a mineral claim cannot be placed on another person's claim without the other person's permission. Therefore, the project has negotiated this letter agreement under which the Oro claims' owner will allow the Project to place barren tailings on the Oro claims.

First Nation Settlement Lands - There are numerous settlement land parcels in the Whitehorse area. The KDFN Traditional Territory covers an area of 10,380 km^2, with 1,040 km^2 designated as settlement land. The TKC Traditional Territory covers an area of 12,079 km^2, with 796 km^2 are designated as settlement lands. There are two First Nation Category B settlement lands (Table 2) within the 500 m buffer around the project footprint. Category B settlement lands are those lands where the first Nation has ownership of resources on the surface. Subsurface resources, and associated new and existing staking, exploration, mining activities are governed by the Yukon Government.

Table 2: First Nation settlement lands within 500 m of the project footprint boundary.

Settlement Land Parcels	Settlement Land Type
KDFN C-24B	Category B
TKC C-8B	Category B

Registered Trapping and Outfitting Concessions - There are no Registered Outfitting Concessions within the study area; however the Project Area is within Registered Trapping Concession number 409. This trapping concession covers the area surrounding Whitehorse, south of the Fish Lake Road-Alaska Hwy intersection and north of the South Klondike-Alaska Hwy intersection.

To the east and west the concession is bounded by Fish Lake and Chadburn Lake. There are no traplines within the project footprint or buffer area, as trapping activities associated with the trapping concession occur in less disturbed, forested areas.

Surveyed Land Parcels - There are many surveyed land parcels within the 500 m project area buffer, and a variety of land parcel types, including mineral, industrial and residential (Table 3).

Table 3: Surveyed land parcels within 500 m of project footprint boundary.

Surveyed Land Parcel	Parcel
Lot 39 QUAD 105D/11	Quartz
Lot 40 Quad 105D/11	Quartz
Lot 41 Group 5	Quartz
Lot 42 Group 5	Quartz
Lot 43 Group 5	Quartz
Lot 56 Group 5 Big Chief Mineral Claim	Quartz
Lot 57 Group 5 Little Chief Mineral Claim	Quartz
Lot 70 Group 5 Valerie Mineral Claim	Quartz
Lot 110 Group 5 Centre Star Mineral Claim	Quartz
Lot 111 Group 5 Pappoose Mineral Claim	Quartz
Lot 112 Group 5 Morning Mineral Claim	Quartz
Lot 114 Group 5 Little Chief No 2 Mineral Claim	Quartz
Lot 116 Group 5 Palmer No 2 Mineral Claim	Quartz
Lot 117 Group 5 Dawson Mineral Claim	Quartz
Lot 118 Group 5 Bonanza Mineral Claim	Quartz
Lot 165 Group 5 Plan 53877 CLSR	Quartz
Lot 166 Group 5 Plan 53877 CLSR	Quartz
Lot 167 Group 5 Palmer No. 1 Mineral Claim	Quartz
Lot 168 Group 5 Skookum Mineral Claim	Quartz
Lot 220 Group 5 Selandian Mineral Claim	Quartz
Lot 221 Group 5 Rawhide Mineral Claim	Quartz
Lot 1151 Quad City of Whitheorse	Quartz
Lot 32 Block 3 Canyon Crescent Subdivision	Residential
Lot 33 Block 3 Canyon Crescent Subdivision	Residential
Lot 34 Block 3 Canyon Crescent Subdivision	Residential
Lot 35 Block 3 Canyon Crescent Subdivision	Residential

2.2 Current Condition of Site and Tailings

Please see the attached report titled "Whitehorse Copper Baseline Conditions" (referred to in this Project Description as "Volume 2") for additional information on current conditions at the site. The following is a summary description of current site conditions.

The site has been inactive since 1982 when mining and processing operations ceased. The mill and other buildings and equipment were removed, and the foundations were covered with up to one metre of crushed rock. The access road is in good condition, as are many of the roads on the site. The Little Chief open pit contains numerous near-vertical, 10-30 metre high walls. The nearby subsidences, caused by collapse of the underground workings, contain numerous fissures, rock slides, high walls and similar treacherous features which constitute public safety hazards. As part of the Decommissioning Plan[1], access to the underground workings (portal, decline, and shafts) were closed and filled, and access roads to the open pit were cut by substantial ditches and berms to restrict vehicle traffic. Although the Decommissioning Plan called for fences to restrict access to the pit and nearby subsidence areas, there is no evidence that fences were installed and there are currently no fences restricting access to these areas.

The tailings remain uncovered, and have substantially dried after 30 years, although some surface runoff collects in small, shallow ponds. The volume of these ponds varies with the amount of snow melt and precipitation, and in dry years, nearly all of these ponds dry completely except for ponds in the B Valley. The tailings are finely ground, approximately 150 microns (100 mesh) and smaller, and with the dry summer weather at the site, most of the surface completely dries, producing fine dust. Strong winds are common at the site, so a substantial amount of surface dust can be created and carried along by the wind. Since the prevailing wind is from the south, these winds can move the dust toward nearby residential areas. While the Decommissioning Plan describes these dust storms as "…have not been of sufficient duration, or continuity, to be considered a high health hazard."[2], there is a small amount of free silica in the dust, so human health concerns are not without foundation.

As described more fully below, the tailings are alkaline and consist of ground rock with very little or no organic material which might serve as nutrition for plant life. As a result, there has been very little plant growth on the tailings ponds, which remain largely barren surfaces. In 1994-1996, D.B. Craig authored three reports on Vegetative Rehabilitation of Whitehorse Copper Mine Tailings[3]. Craig tested various soil supplements and types of plants to determine the treatments that would be required to re-vegetate the tailings ponds. He determined that addition of substantial amounts of nutrients would be required to grow plants, and regular watering would also be required, at least initially. These tests suggest that growing plants on the surface would be difficult, but potentially possible.

Although low-humidity summer weather can dry most of the ponds, wet weather can result in persistent surface ponding in all the tailings impoundments, especially in the B Valley. This sur-

[1] Conceptual Decommissioning Plan, Gadsby Consultants Ltd., 1991, Section 5.6.
[2] *Ibid*., Section 5.6.8
[3] Vegetative Rehabilitation of Whitehorse Copper Mine tailings, Craig, D.B. Also two follow-on reports with same title, report number 2 and report number 3.

face ponding prevents the tailings from de-watering more thoroughly, thus maintaining hydraulic pressure on the dykes and dams. As reported in the Abandonment Report[4] "The surface ponding promotes continual recharge of sub-surface waters and has an adverse effect on dyke stability conditions." While there are no present signs that this persistent hydraulic pressure is endangering the dykes and dams, the potential exists for future problems. The A Valley and B Valley dams were constructed with somewhat impervious layers, so moisture seepage through the dams is restricted. This is especially true of the B Valley dam, plus the B Valley has several water inputs from springs, so the B Valley tailings pond is mostly covered with persistent surface ponds of up to a metre in depth. This lack of de-watering of the tailings in B Valley exacerbates the dam stability issue described above.

These containment berms and dams of the tailings impoundments have been studied and stormwater management channels cut as described in the Decommissioning Plan. Additionally, the Yukon Government recently received an engineering study[5] of the existing containment structures which describes the geotechnical status of the structures and categorizes them in accordance with the 2007 Canadian Dam Association Guidelines.

2.3 Current Uses

Although the Old Pond area of the site is currently zoned "Industrial" and "Heavy Industrial" by the City of Whitehorse, the land is not being used for industrial purposes at this time. The primary reason for this non-use is that the tailings do not provide a hospitable or structurally supportive surface for industrial development.

The tailings areas are currently used in the summer by dirt-bikes, four-wheelers and other motorsports vehicles, as is apparent from tracks and crude wooden jump ramps present in various areas of the ponds. Once the Project is operating, public safety and security issues will preclude such uses. In the winter, a marked snow-mobile track follows the access road and abandoned pipeline path to the site, along the old mill area and northwest off the site. Additionally, there are sometimes off-trail snow-mobile tracks in parts of the tailings areas, and the area may also be used by cross-country skiers. The Project does not expect to operate during the winter months, so these winter uses might not interfere with operations, but public safety and security issue may preclude such use.

As described in Volume 2, there are no fish in the ponds or the pit lake, so there is no fishing activity on the site. Tracks indicate that various types of animals traverse the site, but the lack of ground cover on the tailings ponds make them uninhabitable, so there is no animal habitat on the site and no hunting activity at the site. The site may occasionally be used for hiking or biking, but the lack of vegetation and barren nature of the tailings ponds make the site aesthetically unattractive, and there are numerous nearby areas much more attractive for such activities. Occasionally, nearby residents bring dogs to the site for exercise by bike, motor bike or four-wheeler.

[4] Whitehorse Copper Mines Tailings Storage and Water Reclaim System Final Operations and Abandonment, Thompson Geotechnical Consultants, p 24
[5] Former Whitehorse Copper Mine Geotechnical Assessment, AECOM, Nov 2010.

3 Operations and Reclamation Plan

3.1 Operations Plan

3.1.1 Operation

Operations at the site will consist of excavating the tailings, extracting the magnetite, then de-watering the magnetite to produce a saleable product, iron ore. Approximately half of the barren (after extracting the magnetite) tailings will be placed in the Little Chief pit and nearby subsidences, with the remainder returned to the Old Pond area.

Magnetite will be removed from the tailings by using magnetic separation, which is expected to remove approximately 95% of the magnetite contained in the tailings. This magnetite will be sold as iron ore for steelmaking. The Project expects to earn a profit when it sells the recovered magnetite, enabling it to pay for the reclamation work described below.

Processing of the tailings to recover the magnetite will proceed as follows:

1. Excavate the existing tailings;
2. Transport the tailings to the processing plant;
3. Combine with water to produce a slurry;
4. Separate using three or more stages of magnetic drums; and
5. Filter to de-water the product.

Excavation will be accomplished by mechanical means, either a front-end loader or excavator. The excavator or loader will load a truck, or feed a hopper if a conveyor or slurry system is used.

Transportation to the plant site will be accomplished using three methods: (1) Initially, and while haul distances are short, the project expects to use off-road haul trucks, probably of approximately 35 ton capacity, which will be loaded at the excavation site and will dump into a stockpile at the processing plant. Material from the stockpile will be reclaimed by front-end loader and fed via conveyor to scalping screens and the primary slurry tank in the processing plant. (2) As haul distances grow longer, the Project expects to employ field conveyors to move the tailings to the plant instead of trucks. This may require use of a grizzly or coarse scalping screen in the field prior to feeding the belt. (3) As haul distances grow even longer, and especially as higher moisture content tailings are encountered in deeper tailings deposits, the Project expects to employ a slurry pipeline to transport the tailings to the plant. This slurry pipeline will require moving the slurry mixing tank (and screens) into the field with a water supply pipeline to the mixing tank and a slurry line to the plant. Transported tailings will be placed onto a feed stockpile or into a slurry surge tank adjacent to the processing plant.

A front-end loader will reclaim the tailings from the feed stockpile and load them into a hopper, to which water will be added to produce a slurry. This slurry will then be pumped to the first stage of magnetic separation. If the tailings are pumped to the plant instead of being hauled by truck, the tailings slurry will be pumped from the slurry surge tank to the first stage of magnetic separation. This “rougher” separator will consist of two 1.2 m x 3 m (48” by 10’) stainless steel drums mounted in slurry tanks. As the drum rotates through the slurry, the magnetite particles are attracted to the magnets under the drum's surface and carried up and out of the slurry, while the non-magnetic particles are washed away from the drum. As the drum rotates, the magnetite continues to adhere to the drum's surface until the arc of the magnets inside the drum ends, allowing the magnetite to fall away from the drum. When the magnetite falls away from the drum, it falls into a separate hopper and is collected. This process of magnetic separation is continued through two additional stages of "finisher" magnetic drums (also 1.2 m x 3 m) to further concentrate and clean the product.

Tests of the magnetite in the tailings shows that magnetite particles larger than approximately 116 microns (150 mesh) are not of sufficiently high iron grade to constitute high-quality iron ore. That is, presence of these larger particles lowers the overall grade below the 65% iron desired for the finished iron ore product. Therefore, the Project will remove these oversize particles using a hydrocyclone. The oversize particles will be stockpiled for possible sale as a separate product or possible re-grinding at a later date. Tests of the tailings show that approximately 10-11% of the magnetite in the tailings is larger than 116 microns and will be removed through this process. If this oversize material cannot be sold or otherwise reprocessed into a sellable product, it will be returned to the tailings stream, so a sizeable stockpile of oversize material will not build up.

Once the magnetite has been concentrated and cleaned, the magnetite concentrate will be fed to a filter for de-watering. This filtering process will reduce the moisture content to 8-9% by weight, which will improve handling characteristics and reduce the weight of water transported with the magnetite.

The non-magnetic fraction from the drums will constitute the "barren" tailings to be disposed of, as more fully described below as part of the reclamation plan. The volume of the barren tailings will be smaller than the volume of tailings removed from their current locations. The magnetite itself is approximately 18-20% by weight of the raw tailings, or approximately 11-12% by volume, so the volume of the barren tailings will be smaller by approximately 11-12%. There has been some compaction of the raw tailings over the years since their deposition, and excavation and processing will expand inter-particle separations somewhat. Therefore, the Project expects that the net effect will be a 10-11% reduction in volume.

The Project expects to use several methods of depositing tailings slurry. In some areas, slurry will be deposited via a single pipe and directed to the desired area. In other areas in which the Project desired more rapid build-up of beach sands, multiple spigots will be used to reduce deposition velocity and promote segregation. The Project may also use hydrocyclones to produce low-moisture coarse sands suitable for building berms or other structural purposes. Tailings slurry will be transported via one or more temporary pipelines, probably constructed from PVC pipe, which will be moved frequently as the discharge point is changed.

A flow chart depicting this process is shown in Exhibit 3.1. Although the detailed engineering of the plant layout has not yet been completed, a probable list of the equipment to be used is included in Exhibit 3.2.

The Project expects to use the existing foundation from the old mill building, which was not broken up during closing and decommissioning of the mine, as the foundation for the Project's processing plant. This foundation was designed for the heavy loads and vibrations of a much more extensive processing plant, including both a large rod mill and a large ball mill, so should be more than adequate for the Project's simple magnetic and size separation equipment. Additionally, the Project hopes to be able to clean out and use the existing sump structure in the old foundation. The Project will build an enclosure for the processing plant equipment, probably with a steel frame and metal cladding, but a fabric exterior will also be considered.

The Project expects to excavate the existing tailings from the Old Pond, then the A Valley, then the B Valley. The total volume of tailings is approximately 6 million m^3, and the Project life will be approximately 6 full years, so the annual excavation volume will be approximately 1 million m^3. After removing the magnetite, the volume of barren tailings will be approximately 5.4 million m^3, so the annual volume of deposited tailings will be approximately 900,000 m^3. Although the exact details of the Operating Plan have not yet been specified, the Project expects that excavation and deposition will occur in approximately the sequence shown in the following table:

Excavation and Deposition Sequencing				
	Excavation		Deposition	
Year	Volume	Location	Volume	Location
1	1,000,000	OP	900,000	NS, P
2	1,000,000	OP	900,000	OP, P
3	1,000,000	OP	900,000	OP, P
4	1,000,000	OP	900,000	OP, ES, P
5	1,000,000	A	900,000	OP, ES, P
6	1,000,000	A, B	900,000	OP, ES, P
A=A Valley, B=B Valley, ES=East Subsidence, NS=North Subsidence, P=Pit, OP=Old Pond				

The Project expects to divide the Old Pond into six cells as operations progress to allow both excavation and deposition to occur simultaneously. Cells will be separated by internal (internal to the existing containment structures) berms constructed of coarse, compacted tailings sands. As one cell is excavated, the berms will allow the adjacent empty cell or cells to be filled with slurry. Constraining slurry deposition to smaller cells in this fashion gives the Project greater control over beach development and decant pond formation and minimizes water loss through evaporation. The initial cell will be emptied via deposition of tailings into the north subsidence area, which will hold almost one year's volume of barren tailings. Additional tailings from the Old Pond can be deposited in the east subsidence and pit if additional room is required in the Old Pond prior to starting deposition into the Old Pond.

3.1.2 Process Water and Pit Lake Water Treatment

The Project expects to obtain process water from the pit lake. Through the life of the Project, the pit will gradually be filled with solids, so the pit lake may disappear near the end of the Project. If a pit lake cannot be maintained perched above the newly placed tailings in the pit, a well will be constructed into the underground workings, probably by drilling through the cap placed in the shaft at decommissioning. This well will ensure a steady source of process water. Whether from the pit lake or the well, process water will be pumped to the plant via a temporary pipeline, probably constructed with PVC pipe.

Process water will wash through the plant very quickly. The Project's process engineer, NORAMCO Engineering, estimates that the resident time for a unit of water will be approximately 4-5 minutes. That is, if a specific unit of water could be identified and tracked, the elapsed time from when that water enters the plant, is washed through all the slurry tanks, pumps, magnetic drums, etc., and exits the plant will be approximately 4-5 minutes.

Water will be reclaimed from the tailings by decanting water from the top of the tailings as the tailings solids settle and by collecting seep water from below the tailings dams. The primary objective of the water reclamation program will be to return water from the tailings slurry to the pit lake as quickly as possible, thereby de-watering the deposited tailings as quickly as possible, and using the pit lake as the ultimate settling pond for the finest particles. Because the pit lake is very large compared to the volume of water used in the process (approximately a 38 day supply), there should be plenty of time for the smaller particles to settle and make clarified water available for the process. The following is a general description of the path of the reclaimed water and tailings solids based on the location of slurry deposition: (1) Water from slurry deposited directly into the pit lake will not have to be reclaimed because it will already be returned directly to the pit lake, and solids will settle directly in the pit. (2) Water from slurry deposited into subsidence areas to the east of the pit will drain via cracks and fissures either directly to the pit lake or to groundwater probably directly connected to the pit lake. Some or all the solids will settle before reaching the pit, with the smallest particles settling once they have reached the pit. (3) Water from slurry deposited into subsidence areas northwest of the pit will pond on the surface and be decanted and pumped to the pit. Some water will also drain from the tailings solids via cracks and fissures to groundwater, some of which will be directly connected to the pit lake. Solids will settle in the subsidence area with the smallest particles settling in the pit after being returned with the decant water. (4) Water from slurry deposited into the Old Pond will pond on the surface and be decanted and pumped to the pit. Some water will also drain from the tailings solids as seeps and be recaptured and pumped to the pit. Solids will settle in the Old Pond with the smallest particles settling in the pit after being returned with the decant water.

The current water quality in the pit lake does not meet drinking water standards, so using the pit lake as the source for process water is somewhat problematical. Water in the pit lake currently exceeds drinking water standards for molybdenum and uranium and almost exceeds the standard for selenium. There will be two problems if nothing is done to improve the quality of the water in the pit lake. First, as the Project fills the pit with tailings, the water in the lake will dissipate to ground, so the local groundwater aquifer will receive water with these elevated metal concentrations. High uranium levels are normal in the area, but the high molybdenum and selenium levels are not. Second, as the pit lake water is used for process water, tests show that it will pick up small amounts of metals from the tailings, including selenium, so if selenium is already high in the process water, it will be even higher after being used in the process, and may exceed drinking water standards as a result. Therefore, given the current water quality in the pit lake, and likely impact from the Project, the Project has elected to pre-treat the entire pit lake to reduce metals concentrations prior to starting operations, thereby mitigating both of the problems described above.

The pit lake treatment program will utilize naturally occurring microbes in the pit lake water to reduce the concentration of metals in the lake water. Natural biological activity in the lake precipitates metals from the water into the sediments in the lake bottom, although this process occurs slowly under normal conditions. The water treatment process to be used by the Project adds nutrients to the lake in order to greatly accelerate this natural biological activity, thereby greatly accelerating the precipitation of metals. The nutrients added to the pit lake will be food-grade, carbon-rich additives, including sugars and alcohols, with the specific mixture, volume and speed and method of introduction to be determined after additional testing of the lake water. Initial treatment of the entire pit lake will be accomplished over a period of 2-3 months in the late summer and fall of 2011. This initial treatment is expected to reduce dissolved metal loadings in the pit lake water by at least 80%, so the process water used by the project will have much lower metal concentrations than prior to this treatment. (Similar applications trials of this technology have resulted in metal reduction for Se and Mo of 90%, so this 80% assumption is conservative.) Therefore, any metals which might be dissolved into the process water as a result of contact with the tailings will be much less likely to build up to a level which exceeds a threshold. If necessary, small amounts of additional carbon-rich material can be added during operation to continue the treatment, the entire pit lake can be re-treated multiple times, and the local ground water aquifer can even be treated using this same type of bioremediation process to insure metals do not migrate from the site.

3.1.3 Closures

The Project expects to cease operating seasonally as winter begins and re-start operations in the Spring. Additionally, there may be other, non-weather-caused temporary closures. For any such closures, the Project will drain all pipes, pumps and tanks of slurry and water, winterize all bearings, crankcases, electrical gear, mobile equipment, etc., safety all belts and rotating equipment, and close and lock buildings and gates.

For permanent closure, both the Old Pond and the pit and subsidence areas tailings surfaces will be graded to promote surface drainage and minimize accumulation of surface water. Any exposed tailings surfaces will be covered with a crushed rock layer to prevent dusting. The original ground in the A and B Valleys will be scarified to mix any remaining vestiges of tailings with the original organics and topsoil, and left to re-seed naturally. The A and B Dams will be deconstructed by cutting a notch and placing the removed material above and below the remainder of the dam in such a way as to preclude holding of water behind the remains of the dam. All pipes, conveyors, equipment and buildings which the Project constructs on the site will be removed and the existing foundations will be re-covered with gravel. Any additions to electrical power lines, poles and transformers will be removed. Since the final level of tailings in the Old Pond is expected to be approximately 1-1.5 meters lower than the current level, the Project expects that the level of the storm water drainage structures in the containment structures will need to be lowered by a similar amount to promote discharge of stormwater. Fences, gates and signage will be removed or maintained as required by EMR. Monitoring wells, if any, will be capped or maintained as required by EMR.

3.1.4 Fuel & Oil

The Project expects to operate several pieces of heavy equipment (2-3 excavators/loaders) and several off-road haul trucks (initially) which will require refueling on-site. Therefore, the Project expects to install and maintain a 10,000 gallon fuel storage tank on site. The tank will be double walled and meet all current regulatory requirements. The Project expects to re-fill this tank every 1-2 weeks during operations. The Project will also store small amounts of lubricating oil and grease for on-site equipment maintenance operations. Used oil and grease will be disposed of in accordance with current regulatory requirements. Storage and disposal of these materials are further described in the spill response plan and waste management plan.

3.1.5 Waste

The Project believes that the only Special Waste which the Project will generate will be used oil and grease. These Special Wastes will be handled in accordance with the Waste Management Plan. The Project believes that the only Solid Wastes the Project will generate will be used tires and waste metal (e.g., loader teeth and other scrap steel from maintenance activities) which will be handled in accordance with the Waste Management Plan.

3.1.6 Trail Relocation

Continued use of a trail that currently crosses the project site during operations will be precluded for public safety reasons. The trail is predominantly used by snowmobilers accessing the Trans Canada Trail directly west of the project area. The project has worked with the Klondike Snowmobile Association ("KSA") and Parks and Recreation, City of Whitehorse, to identify a new trail alignment that will bypass the project site while still providing access to the Trans Canada Trail. KSA and the City have provided trail design specifications that are required for the safety of trail users. Most of the bypass trail will use existing trails and the Sima Road right of way, which will not require upgrading. The project will build approximately 200 m of new trail, the approximate routing of which is displayed on the attached map. Final routing will be completed with input from KSA and the City of Whitehorse. The following summarizes the bypass trail specification and construction details.

Trail specifications and construction details:

- Up to 200 m of new trail will be constructed.
- New trail will have 4 m wide ROW and 3 m wide trail tread.
- Total clearing for bypass trail will encompass approximately 800 m^2.
- The trail will approach perpendicular to project site access road. The approach will be sloped so users will be able to see approaching traffic which will ensure safer crossings.
- Intersections will be constructed so that users are able to make safe turns on and off of the new trail.
- Trail construction will occur prior to first winter season shutdown.
- Crushed gravel will be applied as needed to maintain trail integrity.
- Trees cleared from the new trail ROW will be stacked beside the trail in a safe location, so local residents can salvage the trees as fuel wood.
- Obstructing branches and overhanging trees will be removed as necessary.

- Clearing will occur in late-summer to early fall (i.e. outside of the bird nesting season).
- Signage guiding users to new trail and away from the project site will be placed at new and old intersections.

3.2 Reclamation Plan

3.2.1 Basic Reclamation Plan

The City of Whitehorse's Official Community Plan ("OCP") calls for the Old Pond area of the site to be an industrial area, but in its current state, it is not used or useful as industrial land. The OCP designates the area north of the A and B Valleys to be green space, with the area between the two dams and the Old Pond to be "future planning space." However, in their current state, the surface of the tailings in the two valleys is as barren as the surface in the Old Pond and does not have any vegetative cover, so is clearly not green space.

After numerous meetings with government, industry, business and community leaders, the Project has developed a set of objectives for its reclamation plan (Table 4). Most of these objectives are derived from the OCP, with the exception of the public safety objective which was not directly addressed in the OCP.

Table 4: Reclamation Objectives

Convert to Useful Industrial Land (OCP Objectives 8.1 & 8.4)
Eliminate Dust (OCP Objective 4.1)
Enhance Public Safety
Increase Green Space and Wildlife Habitat (~OCP Objectives 1 & 1.3)
Improve Aesthetics (~ OCP Objective 1)

The Project has attempted to develop a reclamation plan which meets as many of these objectives as possible within the bounds of technical and economic feasibility. Features of the Project's basic reclamation plan and the objectives addressed are summarized in Table 5.

Table 5: Basic Reclamation Plan Features

Feature	Objective
Remove (and do not replace) tailings from both valleys to allow re-vegetation.	Increase green space and wildlife habitat. Improve aesthetics.
Decommission A and B dams to prevent formation of unintended lakes.	Enhance public safety.
Place as much of the barren tailings in the pit and subsidences as possible to mitigate public safety risks and to reduce surface area of tailings.	Enhance public safety. Improve aesthetics.
Cover surface of tailings in Old Pond with gravel.	Convert to useful industrial land. Eliminate dust.

The Project estimates the volumes of existing tailings and barren tailings, and the volume of the spaces into which the barren tailings will been placed, as shown in Table 6, below.

Table 6: Tailings Volume and Location

Volume of Existing Tailings by Location (million cubic metres)

	Existing Tailings	Equivalent Barren Tailings
Old Pond	4.07	3.56
A Valley	1.33	1.16
B Valley	0.68	0.60
Totals	6.08	5.32

Volume of Barren Tailings Placement Locations (million cubic metres)

	Barren Tailings
Pit and Subsidences	2.4
Old Pond	2.9
Totals	5.3

There are just over 6 million cubic metres of tailings currently at the site, with approximately 67% of the tailings in the Old Pond area and the other 33% in the two valleys. After removing the magnetite, the volume of the barren tailings will be approximately 5.3 million cubic metres. The Little Chief pit and adjacent subsidences, filled to an elevation of 818 metres and 815 metres, respectively, will hold approximately 2.4 million cubic metres, so approximately 2.9 million cubic metres of barren tailings will be returned to the Old Pond area, which will be approximately 83% of the current volume of tailings in the Old Pond area.

This will allow the Project to leave the A and B Valleys empty of tailings and allow re-vegetation of those valleys. Filling the pit and subsidences will also cover the fissures, high walls and other safety risks in those areas, enhancing public safety. Additionally, placing barren tailings in these areas will also reduce the total surface area of the tailings, thereby reducing the area for potential surface treatment.

The Project expects that tailings will be pumped into the pit and subsidences without thickening, at approximately 25-30% solids, although placement of thickened tailings will also be considered. The tailings slurry will be directed into specific areas of the pit and subsidences by moving the slurry discharge pipe to the desired area. The topography of the pit and subsidence areas, combined with moving the discharge point, will allow the solids to fill the subsidence areas first, and then fill the pit itself. Decant water will be recycled to the processing plant by pumping from the pit and other collection locations. As solids begin to fill the pit, the level of the solids in the pit will eventually rise above the current pit lake surface, which is at the level of surrounding groundwater. Some water will percolate through the barren tailings into the underground workings below the pit and subsidences, thereby recharging the groundwater. Additionally, the water level in the pit lake will rise, causing the water surface to spread as the walls of the pit widen. Eventually, the water will spread beyond the pit rim and flow into the eastern subsidence area where there are massive fissures and crevasses which will allow the water to enter the underground workings, thereby recharging the groundwater. If necessary, the Project will also pump water directly from the underground workings via a well drilled for that purpose.

A perimeter road will be constructed around the pit and subsidence areas to insure access to all parts of the tailings areas. On the north, east and south sides of the pit and subsidences, this road currently exists, although portions will require re-commissioning or upgrading. Approximately 200 metres of new road will be constructed to the west of the subsidence areas to complete the perimeter road. The perimeter road surface will be at an elevation of at least 818 metres elevation around the pit and northeast subsidence and 815 metres around the north subsidence areas. The current topography around the pit and northeast subsidence constitutes a closed rim with a minimum elevation of 810 metres, so to increase the elevation of this rim to 818 metres, the road to the northeast of the pit will be raised just less than 8 metres. Additionally, the old railroad grade at the northern end of the northwest subsidence and valley is at 810 metres elevation, so that road will be approximately raised 5 metres. With these two raised roads, the rims of 818 metres around the pit and northeast subsidence and 815 metres around the northwest subsidence areas will be completed. See Exhibit 3.2.1 for a topographic map of the pit and subsidence areas showing these roads.

Upon filling the pit and subsidences with barren tailings, the tailings surface will not be complete flat at 818 or 815 metres, but will have slopes of 1.5-2.0% from the discharge point toward the water collection points. The Project expects to discharge from the high pit rim and scarp to the north of the pit, with water being collected from the south side of the pit, and from high point between the pit and first northern subsidence with water being collected from the northern end of the north valley. The transition between the tailings in the pit with elevation of 818 metres and the tailings in the north subsidence with elevation of 815 metres will be managed by constructing a sand beach between the first and second subsidences to the north of the pit. The beach sands will slope away from this transition point to the north at approximately a 2% slope, reaching 815 metres well before the old railroad grade.

The Reclamation Review completed in 1995 by John Brodie concludes that collapse of rock in the pit area has filled the voids in the underground workings so that future subsidence will be limited to minor further settling of collapsed rock. Brodie also concludes that the extent of future subsidence in the Middle Chief ore zones to the north of the pit was more difficult to estimate. Additionally, Brodie concludes that "attempts to stabilize the ground, such as injecting tailings or flooding…will be excessively costly", which implies that if the workings were flooded, the ground would be more stable and less additional subsidence would occur. Since the workings are now flooded (they were not flooded when Brodie wrote his Review), it can be concluded that the ground is now more stable and that additional subsidence is less likely. If additional subsidence does occur, possibly due to the weight of tailings placed in the pit and subsidence areas, the Project will benefit because additional volume will be available in which to place barren tailings. The areas of subsidence on the surface match the areas of underground workings below the surface, and the non-subsided areas around the pit and subsidences do not have underground working beneath them, so the surface subsidence areas will not expand. Therefore, the Project expects that settling, if any, will occur in the already-subsided areas, and the current rims of the subsided areas are expected to remain at their current elevations.

A little over half (53%) of the barren tailings will be placed in the Old Pond. These barren tailings amount to approximately 2.9 million cubic metres, compared to approximately 3.6 million cubic metres of tailings currently in the Old Pond. Therefore, the total volume of barren tailings in the Old Pond will be approximately 17% less than the current volume. This lower volume will allow the Project to maximize the reclaimed utility of the Old Pond area by placing the tailings in the most advantageous areas and leaving some areas with original ground or a much lower surface elevation of tailings. The Project expects that the barren tailing will be placed in the Old Pond without thickening, although alternatives (thickening or other de-watering processes) will also be considered.

The tailings slurry will be directed into specific parts of the Old Pond by moving the slurry discharge pipe to the desired area. The original topographic surface of the Old Pond (the surface of the ground prior to placement of the tailings) includes a relatively flat area on the west side of the Old Pond area. About half-way across the Old Pond toward the east, there is a ten metre drop in elevation to the floor of the head of the A Valley, and this lower elevation includes the eastern approximately one-third of the Old Pond area. This topography means that the majority of the barren tailings placed in the Old Pond area will be in the eastern half of the area. The Project expects to build a new north-south road on original ground which will cut the Old Pond area into two sections, providing the opportunity to place more tailings in one area than the other. Since the City of Whitehorse and Yukon Government would like to make the Old Pond area more useable for industrial purposes, the Project will work with the City and YG to optimize the final elevations in the Old Pond areas.

Placing barren tailings behind the existing containment structures in the Old Pond area will require additional engineering studies to determine what, if any, work will be required to stabilize or enhance those structures and ensure they meet current Canadian Dam Association Guidelines. The Project expects to complete this engineering work in the second quarter of 2011 and submit that work to Yukon Government as part of its application for a water license.

Once the tailings in the Old Pond have dried sufficiently to permit vehicular traffic (the Project estimates one year after placement, depending on the moisture content of the tailings when placed), the surface of the tailings will be covered with a layer of gravel, approximately 15 cm deep, to prevent dust and to allow limited industrial use of the area. The Project expects this gravel surface will be adequate for parking of vehicles and storage of equipment or materials such as pipe, but will not be sufficiently robust to permit construction of buildings.

The tailings in the A and B Valleys will be removed down to the original ground. Once the tailings are removed, the original ground will be scarified and allowed to re-vegetate naturally without seeding. As confirmed by the auger drilling in 2010, the Project expects that there will be some of the original organic material remaining in these valley bottoms, as this was not removed prior to the original tailings deposition. When the tailings are removed, these organic soils will be exposed, so no further organic material will be required for reclamation. The exposed soils are expected revegetate quickly as seeds from surrounding vegetation will be deposited naturally into the valleys. The Project does not expect that erosion control will be required in these valleys because the original ground will be exposed. However, if the use of heavy equipment or other disturbance causes erosion, the Project will adopt an adaptive management plan to mitigate erosion as necessary.

Since the A and B Valleys will be left empty of tailings, so there is the possibility that storm water or heavy snow melt may form lakes behind these dams. However, these dams were engineered and constructed to hold wet tailings, not lakes, so they may not be sufficiently strong to retain lakes. Therefore, the Project will decommission the dams by cutting deep V-shaped notches in the dams, thereby preventing anything more than shallow lakes to form. These notches will extend to within approximately five metres of the base of the dams at the valley floors and will be placed so that water will not accumulate behind the notched dams. The notch in the A dam will have a depth of approximately 28 metres below the current dam height and will be approximately 80 metres wide at the top of the dam. The B dam notch will be approximately 18 metres deep and 55 metres wide. The material taken from the notches will be placed both above and below the dams and along the valley sides. Part of the material moved will be used to form spillways to control erosion. If appropriate material is found in the dams, part of the material may be used as construction aggregate by the Project for roads or possibly surface treatment of tailings placed elsewhere in the Old Pond or pit.

To summarize, the Basic Reclamation Plan will meet the reclamation goals described above as follows:

> Convert the Old Pond area to useful industrial land by covering with a gravel layer;
> Eliminate dust by covering the Old Pond with a gravel layer;
> Increase green space and wildlife habitat and improve aesthetics by removing tailings from the A and B Valleys and allowing re-vegetation of those areas; and
> Enhance public safety by decommissioning the A and B dams, and by covering with tailings the high walls, fissures and other hazards in the pit and subsidence areas.

3.2.2 Reclamation Plan Alternatives

The unconsolidated nature of the barren tailings replaced in the Old Pond area, even with a layer of gravel, may preclude erection of buildings, storing heavy equipment or other industrial activities which require more solid ground. Therefore, the Project has investigated the possibility of compacting the tailings as they are returned to the Old Pond to enhance the load-bearing ability of the replaced tailings. However, test results show that the moisture content in the tailings would have to be reduced to approximately 14-15% to achieve 95% of full strength, the level of strength generally required for building construction. Reducing the moisture content of the tailings to this level would require filtering of the tailings, which would cost approximately $1.50 per cubic metre, for a total cost of approximately $4.2 million if all the tailings in the Old Pond were filtered.

Additionally, the Project has investigated the possibility of adding rock to the tailings to produce an engineered fill, which would also provide a robust base for industrial development. The cost of adding one metre of crushed, compacted rock on the surface of the Old Pond would be approximately $3.80 per cubic metre, and approximately 600,000 cubic metres of such fill would be required, so the total cost would be approximately $2.3 million.

The tailings placed in the pit and subsidence areas will have a barren surface unless a surface treatment is placed on these areas. Due to the depth of the pit, the surface area of the tailings in the pit will be smaller than the surface area of the same amount of tailing if it were placed in the Old Pond, so the cost of any surface treatment is thereby reduced. The surface area of tailings in the pit and subsidences is expected to be approximately 17.9 hectares. A gravel layer could be placed on top to prevent dusting, or the surface could be re-vegetated, although from previous studies it is apparent that such re-vegetation will be difficult without mixing of nutrient-rich material with the top layer of tailings or placement of overburden or topsoil on top of the tailings. This gravel cap meets the reclamation objective described above and is a substantial improvement compared to the current status of the property.

Although the Project investigated these reclamation alternatives, it is clear that the reclamation objectives described above can be achieved with the basic reclamation plan, and the alternatives are not required to achieve those objectives. However, if one or more local government entities or other stakeholders would like to realize the additional reclamation benefits of these alternatives, and is willing to provide sufficient funds to implement the alternatives, the Project will modify its reclamation plans accordingly.

4 The Tailings

The tailings at the site consist of the finely ground ore after most of the copper was removed in the original Whitehorse Copper mill. The ore was mined from the open pit and underground mines in the immediate area and brought to the mill by truck. The mill crushed the rock, added water to produce a slurry, then used rod and ball mills to grind the ore and floatation to remove the copper. The slurry was then pumped to tailings ponds where the solids settled and the water was decanted for re-use in the mill. The magnetite was not removed from the ore during the original milling process because the price of iron ore at the time did not warrant doing so.

Historical records indicate that the total volume of ore processed at the mill was approximately 10.4 million tons. Of this total, approximately 1.5% was copper which was recovered in a concentrate that averaged approximately 60% copper, so the total tailings (the tons of ore less the tons of copper concentrate) deposited in the tailings ponds was approximately 10.1 million tons, or approximately 9.1 million metric tons.

The ore from which the copper was recovered consisted largely of limestone, dolomite, diorite, and quartzite, and was in the form of iron-rich and calcsilicate-rich skarn formations. The tailings therefore contain large amounts of limestone, dolomite, and silica, and due to the removal of the copper by floatation, contain very small amounts of the original copper- and sulfur- bearing minerals. The small amount of sulfur and large amount of limestone and dolomite are very important because this composition makes the tailings highly unlikely to produce acid. In fact, as described below, the tailings are very acid-consuming. Details of the chemical composition of the tailings are shown in the assay reports referenced below, and described in more detail in Volume 2.

The tailings were deposited in several tailings ponds over the years, including the "Old Pond", "A Valley" and "B Valley", as shown on Exhibit 5.1. The Old Pond contains tailings from the Little Chief and other nearby open pits, and A Valley and B Valley contain tailings from the underground workings under and adjacent to the Little Chief Pit. Based on the surface areas of these ponds and the estimated and measured depths of each area, the estimated tonnage of tailings in each area was calculated (see Table 6).

Table 6: Estimated Tailings Tonnages

Area	Area (000 sq m)	Avg. Depth (m)	Tailings (million mt)
Old Pond	544.8	7.5	6.1
A Valley	126.5	10.5	2.0
B Valley	77.9	9.5	1.0
Totals	743.2		9.1

The tailings ponds were established by constructing dams in the existing valleys. The Decommissioning Study completed in 1992 evaluated the containment dams[6], and the Government of Yukon recently completed a study of the containment structures[7], and neither of these studies

[6] Conceptual Decommissioning Plan, Gadsby Consultants Ltd., 1991, Section 5.6.
[7] Former Whitehorse Copper Mine Geotechnical Assessment, AECOM, Nov 2010

indicate that there are currently any significant issues or risks associated with the Old Pond containment structures. Additionally, the Project recently completed a new study of the Old Pond containment structures by SRK Consulting[8] which concluded that the structures are stable under both static and seismic loading conditions and meet CDA stability criteria.

4.1 Tailings Characterization

The Project conducted four rounds of sampling of the tailings in 2010. The March and April samples were obtained using a truck-mounted auger, and samples were taken from various locations on the ponds and various depths. Drill hole locations are shown on Exhibit 4.1 and drill hole logs are shown in Exhibit 4.2. The samples collected in March 2010 included 16 separate samples from five holes. The samples collected in April 2010 included 52 separate samples from 19 holes. The eight samples collected in August were obtained with an excavator and were of larger volume, each approximately 25 kg. Samples were logged as to hole location, depth, and characteristics (fineness, dampness, and color) when obtained. The March and April samples were sent to Inspectorate Group (International Plasma Lab) in Vancouver for testing, including particle size, moisture content, acid base accounting, rinse tests and chemical assays. The August samples were sent to Midland Research in Minnesota for laboratory and pilot plant testing. The Project also collected additional samples in September to complete the geochemistry studies described in the Access Consulting Group report (see Volume 2).

In addition to these recent tests, the tailings were sampled and tested previously. In 1984, Kilborn Limited sent Lakefield Research a total of 88 samples for testing. Lakefield tested particle size distribution, conducted some metallurgical testing, and limited chemical assaying. In the discussion below, these results will be referred to as the Kilborn Study. Unfortunately, the Project has been unable to determine the exact location and depth of these samples, so the Kilborn results are not as useful as they might be if the exact locations were known.

Additionally, the Decommissioning Study tested two tailings samples taken in 1991 and a third sample taken in 1983 using acid base accounting methods.

4.2 Particle Size Distribution

The Kilborn Study showed that the particle size distribution (80% passing) of the samples was approximately 111 microns (135 mesh). The March 2010 samples had a particle size distribution of approximately 106 microns (140 mesh), so the Kilborn Study results and the results from recent samples are approximately equal. The April 2010 samples were not tested for particle size. From the particle size distributions of the individual samples and from the drill logs for the 2010 samples, it is evident that there is some variation of particle sizes, with some layers within the tailings ponds being more finely ground than others. Based on the samples tested to date, the Project has been unable to determine any correlations between surface location or depth and particle size. This lack of correlation is reasonable given that the tailings discharge pipe was apparently moved frequently as the ponds were being filled.

[8] Stability Assessment Old Pond Tailing Dyke, SRK Consulting, June 2011.

4.3 Moisture Content

The Kilborn Study showed that the moisture content ranged from 4% to 26%, with an average of approximately 18-19 %. The March 2010 samples showed a moisture content ranging from 9% to 28% with an average of 18%, the April samples ranged from 9% to 34% and averaged 22.3%, and the eight bucket-sized samples in August ranged from 15% to 27% and averaged 22.1%. The March samples were from only the Old Pond area, and those samples contained less moisture than the A and B Valley samples. The weighted average of all the samples was 20.4%. From the moisture content of the individual samples and from the drill logs for the 2010 samples, it is evident that there is some variation of moisture content, with some layers within the tailings ponds having higher moisture content than others. Based on the samples tested to date, the Project has been unable to determine any correlation between surface location and moisture, although there is some correlation between depth and moisture (deeper samples contain more moisture), and between particle size and moisture (finely ground tailings hold more moisture than coarse tailings). This lack of geographic correlation is reasonable given that the tailings discharge pipe was apparently moved frequently as the ponds were being filled.

4.4 Acid Base Accounting

The Kilborn Study did not measure acid generating potential. The Decommissioning Plan measured the acid generating potential of the three tailings samples it tested (Tailings, Old Pond and A Valley). Three sets of 2010 samples were also tested for acid generating potential. The 16 samples collected in March 2010 were mixed to form a March composite, and a Davis tube was used to separate into magnetic and non-magnetic samples. These March magnetic and non-magnetic samples were then tested using acid base accounting procedures. The same procedure was followed for the 52 samples collected in April 2010 (see assay results in Exhibit 4.3). These acid base accounting tests are summarized in Table 7.

Table 7: Acid Base Accounting Test Results

Sample	Paste pH	Acid Potential (AP)	Neutralizing Potential (NP)	Net Neutralizing Potential (NNP)	NP/AP
Tailings (1983)	--	5.3	80.0	74.7	15
Old Pond (1991)	9.3	6.0	209.0	203.0	34
A Valley (1991)	9.1	4.0	283.0	279.0	70
Mar 2010 magnetic	8.2	3.3	21.7	18.4	6.6
Mar 2010 non-magnetic	8.0	3.3	167.6	164.2	50.6
Apr 2010 magnetic	8.9	3.0	28.2	25.2	9.37
Apr 2010 non-magnetic	8.5	2.7	150.2	147.5	55.4

Note that the tailings are strongly acid consuming, with paste pH's above 8, NNP's well into double digits and NP/AP ratios well above 5, even for the magnetic fraction. Note also that the tests performed in 1991 and 2010 roughly agree with each other in that the tailings are shown to be strongly acid consuming. These results indicate that both the magnetic fraction (the iron ore) and the non-magnetic fraction (the barren tailings to be replaced in the ponds) will not generate acid when exposed to water and oxygen. The high neutralizing potential is to be expected given the high limestone and dolomite content, and the low acid potential is to be expected given the low sulfur content (see assays results described below). This very low acid generation potential also gives considerable comfort regarding potential metal leaching, since without acid most metals will not be leached from the tailings.

In addition to these preliminary tests, the geochemistry report from Access Consulting Group contains a comprehensive discussion of acid-base accounting tests (see Volume 2).

4.5 Chemical Assays

The Kilborn Study provided only very limited chemical assays, testing for iron (Fe), copper (Cu), sulphur (S) and gold(Au). Of note is that the average copper content was approximately 0.16% and the sulfur content was approximately 0.10%. The Decommissioning Study did not provide assay data. The 2010 samples were subjected to whole-rock and 30- or 50-element ICP assays to determine whether there are any heavy metals or other elements present in high concentrations (see Exhibit 4.4). Note the whole rock assays which show the presence of considerable CaO and MgO (the limestone and dolomite) plus SiO_2 (silica) and that there is very little else in the tailings. Note also that the ICP analyses show that other than copper and iron, metal concentrations are all either very low or below detection limits. In particular, note that environmentally potentially troublesome metals such as arsenic, cadmium, chromium, mercury, sodium, lead, selenium, tin, zinc, and zirconium are all very low or below detection limits. Note also that sulfur content is quite low, approximately 0.08%, reinforcing the conclusion described above that there is very little probability of acid generation, especially with the large amount of limestone and dolomite present in the tailings.

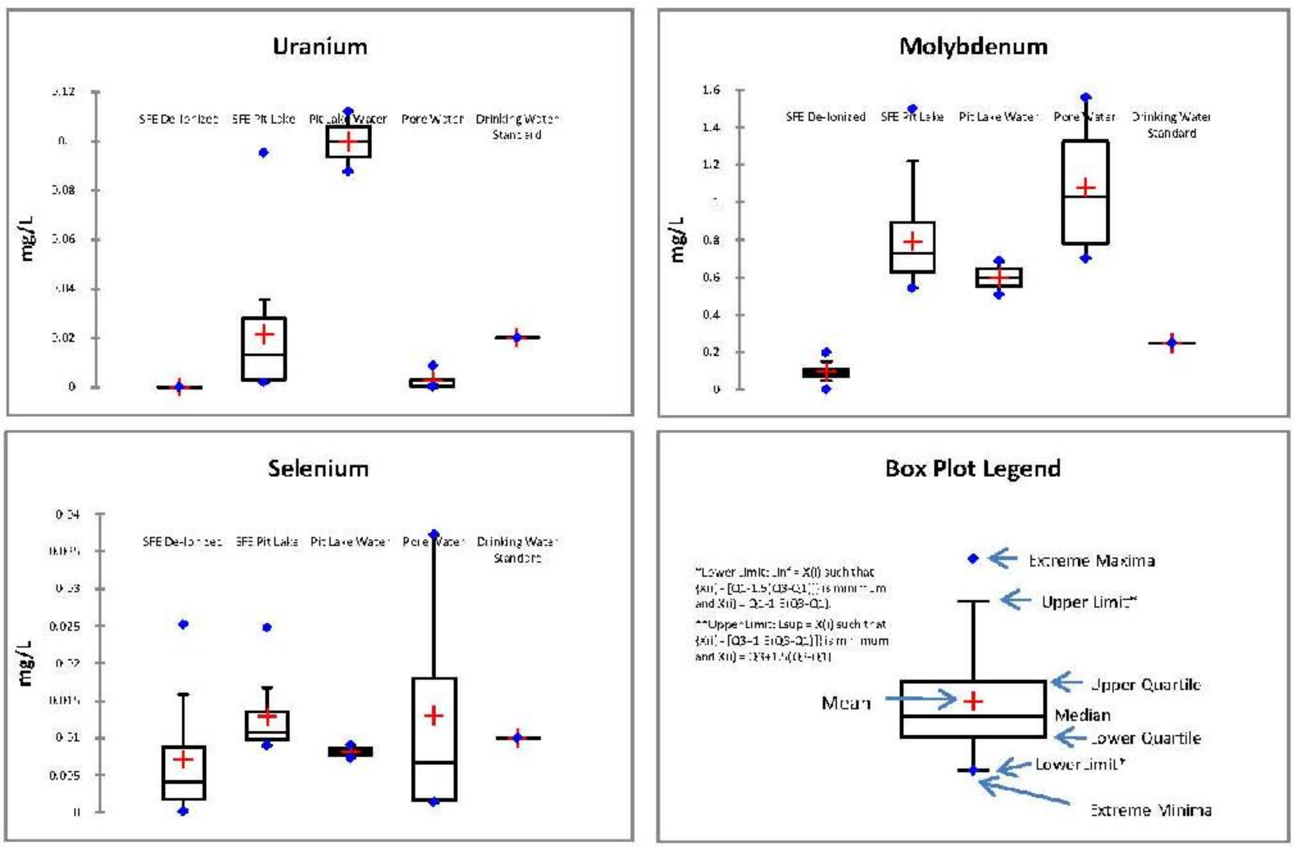
In addition to these preliminary tests, the geochemistry report from Access Consulting Group contains a comprehensive discussion of tailings chemistry (see Volume 2).

4.6 Water Quality and Shake Flask Tests

In addition to the chemical assays described above, the Project subjected the 52 samples taken in April 2010 to rinse tests. In these tests, the 52 samples were combined into a single composite, and two samples were taken from the composite. These two samples were then placed in clean beakers with laboratory deionized water and shaken for 24 hours. The water was then tested to determine the effect on the water chemistry of the contact with the tailings. The results of these rinse tests are shown in Exhibit 4.5. Note that the pH of the water was 5.5 before the test and 9.05 after, confirming that the tailings are alkaline (acid consuming). The water after the rinse test was subjected to a 30-element ICP assay. Note that except for calcium (from the limestone), magnesium (from the dolomite) and a little potassium and strontium, the water was virtually unchanged by the rinse test. These initial test results clearly indicated that rinsing the tailings in water does not adversely affect the chemistry of the water, and that acid is not produced by rinsing the tailings with water. In fact, rinsing the tailings with water can be expected to neutralize any acid in the water.

The Project also performed shake flask extraction ("SFE") tests using both pit lake water and deionized water. SFE tests using Pit Lake water were used to predict process water quality, and showed exceedences of molybdenum, selenium and uranium. Since the pit lake water already exceeds drinking water standards for uranium and molybdenum, it is no surprise that when pit lake water was used with the tailings, the SFE leachate also exceeded drinking water standards. Comparisons between the SFE testing conducted using deionized water (N=11) and those using pit lake water (N=20) show that the use of clean water for processing will limit or eliminate exceedences of the drinking water standards. Box plots for the three elements of concern showing a the comparison between tailings pore water, pit lake water, SFE tests using deionized and SFE tests using pit lake water, and the relevant drinking water standard (the lowest drinking water standard of the Health Canada drinking water guideline and Yukon CSR drinking water standard) are presented in Figure 1 to illustrate this.

Figure 1 Comparison between SFE Tests using Pit Lake and Deionized Water



Based on these SFE tests, the Project has chosen to treat the entire pit lake prior to beginning operations, as described above in Section 3.1.2. Table 8 below shows the existing pit lake water quality along with the predicted results of the treatment based on a conservative assumption of treatment efficiency of 80%. The treated lake will still contain some trace metals but at significantly lower concentrations than currently exist, and at concentrations well below drinking water standards. The treated lake water will be used for the processing of the tailings during the operations phase of the project and the water within the pit lake will be monitored for its quality to determine whether there is a need for additional treatment under an adaptive management framework. Additional treatment would most likely be in the form of a carbon addition to the tailings slurry following processing in order to provide additional carbon during the deposition of tailings. Secondary treatment of the pit lake is another means by which the pit lake water quality could be managed. Tertiary treatment of groundwater under the adaptive management framework using similar technology (also proven by Alexco) is an additional contingency.

Table 8 Predicted Pit Lake Water Quality after Pit Lake Treatment

	Season Sampled	Mo (mg/L)	Se (mg/L)	U (mg/L)
Untreated Pit Lake Water	Summer	0.5080	0.0073	0.0877
	Fall	0.6880	0.0091	0.1120
	Spring	0.5090	0.0060	0.0777
Treated Pit Lake Water Assuming 80% Metals Reduction	Summer	0.1016	0.0015	0.0175
	Fall	0.1376	0.0018	0.0224
	Spring	0.1018	0.0012	0.0155
Drinking Water Standard*		0.25	0.01	0.02

*Lowest of either Health Canada or Yukon CSR drinking water standards

In addition to this summary, the geochemistry report from Access Consulting Group contains a comprehensive discussion of water quality prediction (see Volume 2).

4.7 Tailings Effect on Meteoric Water

The tailings are currently exposed to meteoric water over a large surface area totaling approximately 69 hectares (170 acres). Some rainwater and snowmelt runs off the surface of the tailings, but a large portion percolates through the tailings and seeps into the ground, connecting eventually with groundwater. As described below, water from wells down-gradient from the tailings have not historically shown, and do not currently show, any signs of acidification. The geochemistry report from Access Consulting Group presents a comparison between sampling of the down-gradient wells undertaken in 1991 and again in 2010 showed several metals which appear to have decreased since 1991. The higher levels seen in the 1991 well sampling was interpreted to be a result of up-gradient mining activity (Whitehorse Copper Mines), while the decrease in metal contents between 1991 and 2010 was interpreted to be a result of equilibration and reduction to background metal levels after cessation of mining and active disturbance (mine closed in 1982). It is important to note that only one sample taken in any downstream monitoring well exceeded CSR drinking water standards (91-15 Pioneer 1991 sampling for Pb).

None of the geoenvironmental testing undertaken by the Project on tailings and waste rock show any significant Pb leaching (Pb content of all tailings samples were below average crustal abundance), suggesting that the only observation of an exceedence of drinking water standards in down-gradient monitoring wells was likely due to some other factor than up-gradient mining activity. These results indicate that metal leaching as a result of tailings reprocessing will not result in exceedences of relevant water quality standards in any receiving environment.

In addition to this summary, the geochemistry report from Access Consulting Group contains a comprehensive discussion of water quality (see Volume 2).

4.8 Well Water Testing

Domestic water supply for private residences down-gradient (north and north-east) from the site is obtained from wells of 12-20 m (40-65 ft) depths, and from Pioneer RV Park supply wells of 50-122m (165-400 ft). The Decommissioning Plan studied water samples from nine domestic water wells, three from the A/B Valley about 1.0 km (3,200 ft) "downstream" of the A and B dams and six from the Crater Lake watershed, about 1.8 km (6,000 ft) downstream of the Old Pond impoundment. These results show that water from the wells all met drinking water guidelines with the exception of manganese (aesthetic objective only) in the two wells in the Pioneer RV Park[9].

In addition to these summary results, the geochemistry report from Access Consulting Group contains a comprehensive discussion of water quality (see Volume 2).

4.9 Effect of Disturbance and Reprocessing of the Tailings

Removing the magnetite from the tailings will result in a small (10-11%) reduction in the overall volume of the tailings, thus slightly reducing the volume of tailings exposed to meteoric water. Additionally, other than removal of the magnetite, there will be no chemical alteration of the tailings.

The geochemistry report from Access Consulting Group contains a comprehensive discussion of predicted water chemistry and may be summarized as follows:

1. The tailings are acid-consuming, not acid producing;

2. The pit lake water currently contains concentrations of uranium and molybdenum above drinking water standards;

3. If the pit lake is treated prior to beginning operations, concentrations of dissolved metals in the pit lake water and the process water will be below drinking water standards;

4. Any metal leaching associated with tailings disturbance is predicted to decrease over time after final placement.

[9] Conceptual Decommissioning Plan, Gadsby Consultants Ltd., 1991, Section 4.2.2.4.

5 Water Use and Water Balance

Processing the tailings to remove the magnetite will require a substantial amount of water. The first step in processing the tailings will be to combine the tailings with water to create a slurry. The initial stage of magnetic separation will require that the slurry be approximately 35% solids by weight. Since the Project expects to process approximately 450 tons per hour of tailings solids, approximately 720 tons per hour of water will be added, or approximately 3,200 gallons per minute. Water needs in other places in the process will increase total water use in the processing plant to approximately 4,200 gallons per minute. Nearly all this water will be recycled, as more fully described below, so little water will be lost or "used" in the process. See the water balance calculations shown in Exhibit 5.1 and the site-wide water balance shown in Summit (2011). These water balance calculation shows that the overall loss of water from the site is expected to average approximately 219 cubic meters per day.

There are no surface water courses on the site, so any meteoric water which falls on the site either evaporates or reports to groundwater (Volume 2, Section 3). Some seasonal ponds exist on the site in the spring or during wet years, but all the water eventually either evaporates or reports to groundwater before leaving the site. Even in the B Valley where springs which emerge from the hillside on the west side of the valley provide a longer lasting source of water and create more substantial surface ponds, the water goes quickly to ground. The spillway on the east end of the B dam generally has a steady stream of water from these ponds above the dam, but even that steady stream of water percolates down through the rock outfall and goes to ground with no surface runoff beyond the outfall.

In the area of the open pit and subsidences, the pit lake and the small ponds at the bottom of the subsidences are all surface expressions of groundwater. Due to the myriad cracks and fissures in the rock in the pit walls and the subsidence areas, the pit and subsidence areas are very well connected hydraulically (Summit 2011). Given this strong hydraulic connection, any water introduced into the subsidence areas will quickly find the groundwater level and equilibrate with the groundwater level in the pit lake, and *vice versa*.

Tailings will be deposited gradually into the Pit over the entire life of the Project at the rate of approximately 140,000 m^3 per year. This gradual filling should allow the water in the existing pit lake to dissipate into the surrounding rock as described in the Summit Report which calculates a dissipation rate of between 70,000 and 250,000 m^3 per year. As solids fill the pit, lake water will be displaced upward, causing the lake level to rise. This rising water will be constrained by the existing topography up to approximately 813 meters, so the Project will not allow the lake level to rise above this level. If the level does rise to this level, the Project will slow the deposition of solids or remove water to maintain that level. However, the Project does not actually expect the lake level to rise substantially above the current 800 meter level for any appreciable length of time because the rising water will spread into areas of substantial cracks and fissures in the subsidence areas which will allow the water to drain back to groundwater level at 800 meters. These cracked and fissured areas are limited geographically, so eventually the rising water will encounter more solid rock and the water will begin rising over the wider area surrounding the pit lake. Note that this filling rate of 140,000 m^3 per year will occur over approximately an 8 month operating season, so the annualized rate is approximately 210,000 m^3 per year. This annualized rate is still lower than the 250,000 m^3 rate at the high end of the Summit range. So the Project expects that while there may be some temporary rise in the pit lake level during operations, the lake is expected to recede to groundwater level during the non-operating season.

In addition to placing tailings in the pit and subsidence areas, the Project intends to place tailings in the Old Pond area. Although not as obviously connected to groundwater as the pit and subsidence areas, water in the Old Pond area also reports directly to groundwater (Summit 2011). As tailings slurry is introduced to the Old Pond area, the solids will settle and the water will be decanted for recycling to the process plant. Additionally, the Project will collect water which seeps from below the dams surrounding the Old Pond for recycling, while allowing sufficient water to remain to maintain the existing small wetlands in these areas. The slurry water not decanted or collected will either percolate through the tailings and report to groundwater or evaporate, as meteoric water does now. After placement in the Old Pond area, the barren tailings will have higher moisture content than the existing tailings. However, that additional water will seep down through the tailings and be reclaimed as described above or return to ground. The Project estimates that within approximately 2-3 years, the moisture content in the tailings will approximately equal the moisture content (20-22%) in the existing tailings.

The Project will obtain its process water from groundwater, either by pumping directly from the pit lake or by pumping from a well drilled into the underground workings. The Project will place tailings slurry in both the pit and subsidence area and the Old Pond area. As described above, both areas are well connected to groundwater, so the water in both areas will return to the groundwater from which it was initially pumped. Therefore, whether the tailings slurry is placed in the pit and subsidence area, or the slurry is placed in the Old Pond area, the process water pumped from groundwater is returned to groundwater in an *almost* closed loop.

While nearly all the process water returns to groundwater, the system is not a completely closed loop, and there will be some loss of water from the site. The loss will occur because the magnetite will be de-watered to approximately 8% moisture content, so the water remaining in the magnetite will be shipped off-site with the magnetite and therefore will not be returned to groundwater. This water shipped with the product is the amount of water lost by the system and is a major portion of the amount of make-up water which will be “used” by the Project. As shown in the plant water balance, the water shipped with the magnetite will amount to approximately 145 cubic metres per day.

6 Permitting and Environmental Issues

6.1 Regulatory Requirements

6.1.1 Lease Requirements

The project is not a quartz mine, nor is it a placer mine, so it falls into a 'grey area' not covered by either the quartz mining regulations or the placer mining regulations. As such, the Energy Mines and Resources Branch of the Government of Yukon has elected to lease the site to the Project under the *Lands Act*, yet impose some of the same regulatory requirements as would be expected for a Quartz Mining License. The regulatory requirements for operating the Project are described in the Yukon Lease, Disposition No. 2010-2060, dated September 2, 2010. Under the Yukon Lease, the Project shall provide to the Manager, Mining Lands, a "Tailings Processing and Operations Plan" and a "Reclamation and Closure Plan," both of which "conform to any applicable Yukon Decision Document promulgated under the *Yukon Environmental and Socio-economic Assessment* Act related to the proposed project". The Yukon Lease also requires a security deposit and royalties in accordance with the Quartz Mining Act.

6.1.2 City of Whitehorse

As this project falls within the City of Whitehorse municipal boundaries, the City of Whitehorse requires the submission of a development plan. This plan must outline the project construction and operation activities as well as the reclamation plan for the site. There are no changes required to the municipal zoning of the project area as the proposed use of the site falls within the existing municipal zoning of the land in question.

6.1.3 Water License

Although the Project does not fit easily within a category described in the existing Water Regulations, careful review of the Waters Act and Regulations indicates a Type 'B' Water License is most appropriate for the Project. Under Schedule 2, Item 1, Column 2, tailings re-processing is defined as an "Industrial Undertaking", so Schedule 5 contains the licensing criteria. Under Schedule 5, the most applicable item is Item 2 (2): "Watercourse training, including channel and bank alterations, <u>artificial accretion</u>, spurs, culverts, docks and erosion control" (emphasis added). This item is applicable to the Project as operations will involve alteration of the Little Chief Pit lake by adding tailings to the pit and nearby subsidences, thereby adding to (artificially accreting) the land. And since more than 100 cubic metres of barren tailings will be deposited into the pit lake (a watercourse) during the life of the project, the Project falls under Column 3, and a Type 'B' License is required.

Additional justifications for the application of a Type B water license include the following:

a. The project operations will use (lose from the site) less than 300 cubic metres of water per day;
b. No dam construction of eight metres or over will take place as part of the Project; and

c. The Project will not deposit any "waste" during construction or operation. The pit lake water forced to dissipate to ground by filling the pit with tailings will be pre-cleaned as described above, so will not constitute a "waste", and the geochemistry report by Access shows that neither the tailings nor the process water in contact with the tailings constitutes "waste" because they do not "… degrade or alter … the quality of water to an extent that is detrimental to its use by people or by any animal, fish, or plant, …"

7 Product Buyers and Iron Prices

There is an established world-wide market for iron ore, with China being the largest purchaser, especially for sea-borne shipments. From the west coast of North America, buyers in China are the most likely potential purchasers, with Japan and Korea also possibilities. Most iron ore buyers are interested in purchasing large amounts (one million tons plus per year), so marketing the small volume expected to be produced by the Project would normally be a challenge. However, the Project has an existing purchase contract with a state-owned Chinese buyer for the iron ore it will be selling from its separate magnetite mining project on Prince of Wales Island, and expects to invite this buyer, as well as other potential buyers with whom the Project has existing relationships, both Chinese and Japanese, to make proposals to purchase the iron ore from the Project. Therefore, despite the small amount of iron ore to be produced, the Project is highly confident that the Project's iron ore can be successfully marketed.

Historically, iron ore prices have been set annually by negotiations between the three largest iron ore producers and the largest steel producers, and that price has then been accepted as the annual "benchmark" price by all producers in the world. This annual or benchmark pricing mechanism worked well as long as iron ore prices were relatively stable. However, beginning in the early 2000's, increased demand from developing countries, especially China, resulted in large price increases and more price volatility than had been seen historically in the iron ore market. Driven by this increased price and increased price volatility, a rising fraction of the world's iron ore has been sold without the "normal" annual pricing mechanism, and a spot market for iron ore has quickly developed. Traditional producers and consumers who prefer the reduced price risk inherent in longer term contracts have mostly shifted to quarterly pricing mechanisms to reflect the market's trend toward more-frequent-than-annual re-pricing. Iron ore prices tumbled in late 2008 due to the world economic recession, but demand and prices rebounded strongly in late 2009 and early 2010, then dropped again in the second quarter of 2010 as the economic recovery slowed, and have more recently again equaled the 2008 peaks. Given this volatility, the Project expects the world iron market to increasingly price iron ore on a quarterly or even a spot basis, as is true with most other minerals and metals. The Project intends to sell its ore on an FOB basis and will attempt to enter into long-term contracts with buyers, probably with quarterly pricing formulas.

8 Resource Definition

The tailings have been well sampled and tested in the years since the mill shut down in 1982. Additionally, the Project has performed its own investigation of the tailings, including drilling five auger holes in March 2010, fifteen auger holes in April 2010, eight excavator pits in August 2010 and fourteen auger holes in September 2010. These recent samples and tests have confirmed the previous reports of approximately ten million tons of tailing with 18-20% (1.8-2.0 million tons) of recoverable magnetite. The tailings are on the surface, so mining will be very simple, consisting of excavating the tailings and transporting to the processing plant. The Old Pond tailings deposits are approximately 10-40 feet deep, with deeper deposits in the A Valley and B Valley, so all excavation work will be at the surface and in the open.

9 Shiploading

The closest shiploading facility which can handle ocean-going vessels is in Skagway, Alaska. The Project has been working with the owner (the Alaska Industrial Development and Export Authority, "AIDEA") and operator (Mineral Services Company) of the Skagway Ore Terminal to arrange lease and operating agreements, and with the Skagway Port Commission to develop a logistics plan that suits all participants. Water depth at the shiploader dock restricts ships size to approximately 40,000 tons. The Project expects that certain improvements will be needed to enable the Project to store and reclaim its ore at the terminal, and expects to arrange financing of construction of those improvements from AIDEA.

10 Land Transportation

The Project expects to employ one or more bulk material trucking firms to move the iron ore from Whitehorse to Skagway, a distance of approximately 165 km. The road is a good-quality, well-maintained, two-lane, paved road, although the 15 km section just north of Skagway is quite steep, which reduces truck speed and increases transit time. The round-trip should be approximately 4-5 hours, so the Project expects each truck will be able to make two round-trips per day. The Project has discussed the details of a "bulk haul" permit with the Yukon Transportation Services Department and expects to obtain a permit to haul 50 ton loads in specialized "B" train truck/trailer combinations. With this permit, if the Project produces 1,500 tons per day, approximately 15 trucks will be required to haul the ore and there will be 30 truckloads per day traveling between the site and the ore terminal. The Project has held preliminary discussions with two bulk haul providers (Lynden and Maple Leaf) and expects to pursue more detailed discussions with those and other potential haulers during 2011.

The Project has also discussed the possibility of moving its ore via the White Pass and Yukon Route railway, which currently operates a narrow-gauge, seasonal tourist excursion railway between Skagway and Carcross, YT. Prior to 1982, the railway carried mineral concentrates from Whitehorse to the Skagway, and there is some possibility that the railway could resume this type of freight service. However, the railway no longer has the right equipment (cars and power) for such service, so resuming ore hauling services would be expensive. The track is still in place between Carcross and Whitehorse, but a considerable amount of money would have to be spent to rehabilitate the existing tracks to enable freight movements. Additionally, the Project has asked the railway about moving the freight from Carcross to Skagway. If the ore were loaded into intermodal containers in Whitehorse, and the containers hauled by truck to Carcross, there might be some cost savings with this short rail haul, and the large capital cost of rehabilitating the tracks might not be required. The railroad has recently publicly expressed interest in resuming freight traffic, but has set no specific timetable.

11 Management, Ownership, and Financing

The Project will be owned and operated by Eagle Whitehorse LLC, of which Eagle Industrial Minerals Corp. is the sole member, and EWH Management LLC is the manager. Eagle Whitehorse LLC and EWH Management LLC are wholly-owned by Eagle Industrial Minerals Corp. which is wholly-owned by Charles E. Eaton. Eagle Industrial Minerals Corp. is also developing magnetite projects in Southeast Alaska, British Columbia, Nevada and Utah, and typically establishes separate LLC's or other types of entities to own, finance and operate each project in order to insulate the projects from cross liabilities and allow each project to stand on its own financially.

The Project expects to employ an experienced project manager as its on-site manager, responsible for all facets of the Project, including technical management of excavation and processing, quality control, permit compliance, and personnel. The Project has also held preliminary discussions with two construction firm who have the capability to operate all aspects of a project such as the Project on a contract basis.

Eagle will design and build the processing plant and obtain the mobile equipment required to operate the Project, and expects to fund permitting costs and the cost of building the processing plant (current estimate approximately $4 million) with internal capital. The Project is also discussing with several local entities (including First Nations) the possibility of those entities making investments in the Project, and the Project would welcome such participations.

The Project is negotiating a financing package from AIDEA to provide the funds to finance any required improvements to the ore terminal and storage areas. This financing will likely be in the form of a lease under which the Project will pay rent per ton of ore transferred through the terminal, thereby repaying the total amount financed.

For additional information, please contact:

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12 References

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13 Exhibits

2.1 Area Map
2.2 Aerial Photo of Site

3.1 Process Flow Sheet
3.2 Process Plant Equipment
3.2.1 Pit & Subsidence Area Roads

4.1 Tailings Areas, Including Sample Locations
4.2 Tailings Samples Log
4.3 Acid Base Accounting Assays
4.4 Multi-element Assays
4.5 Rinse Test Results

5.1 Water Balance

Whitehorse Area

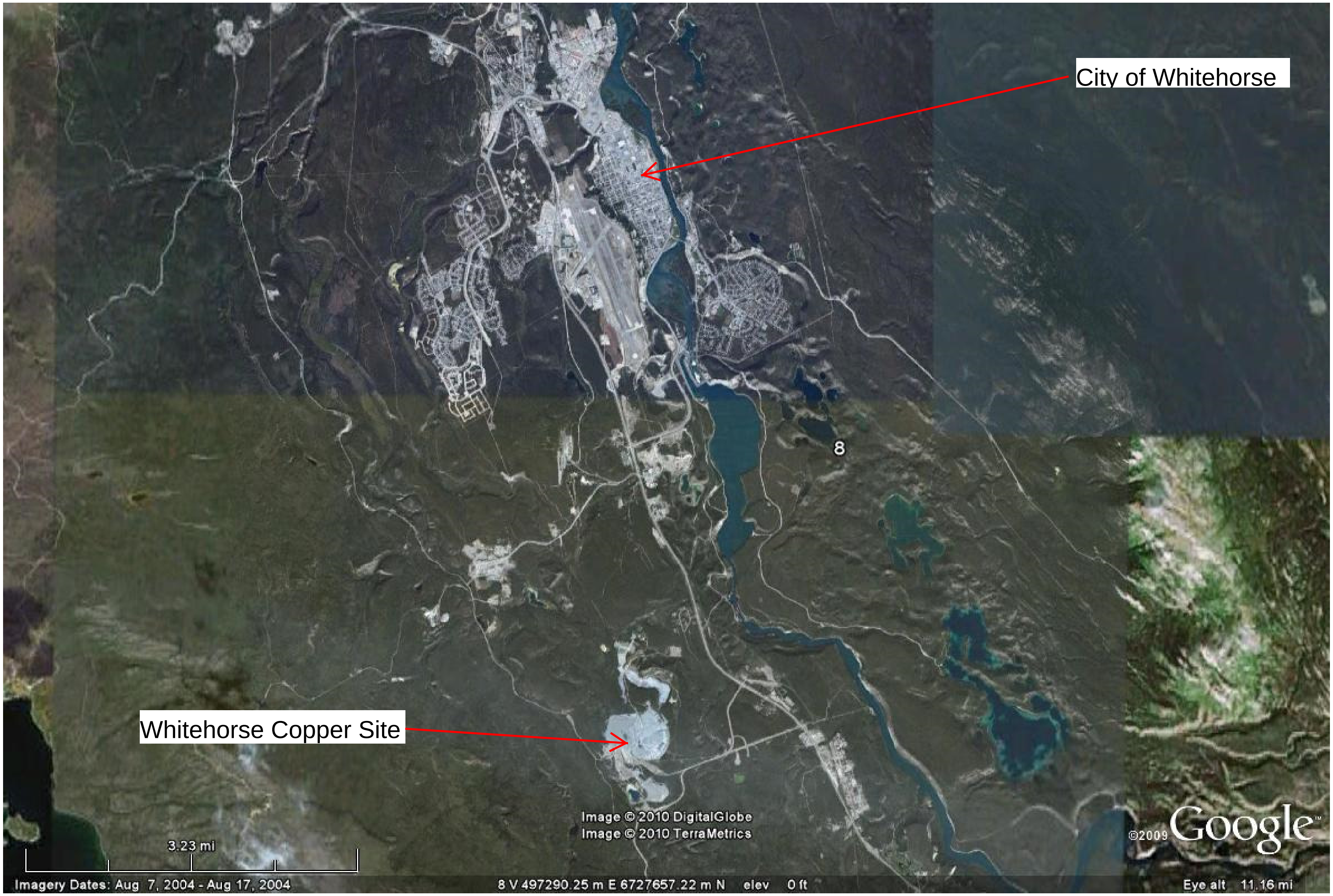


Exhibit 2.1

Exhibit 2.2

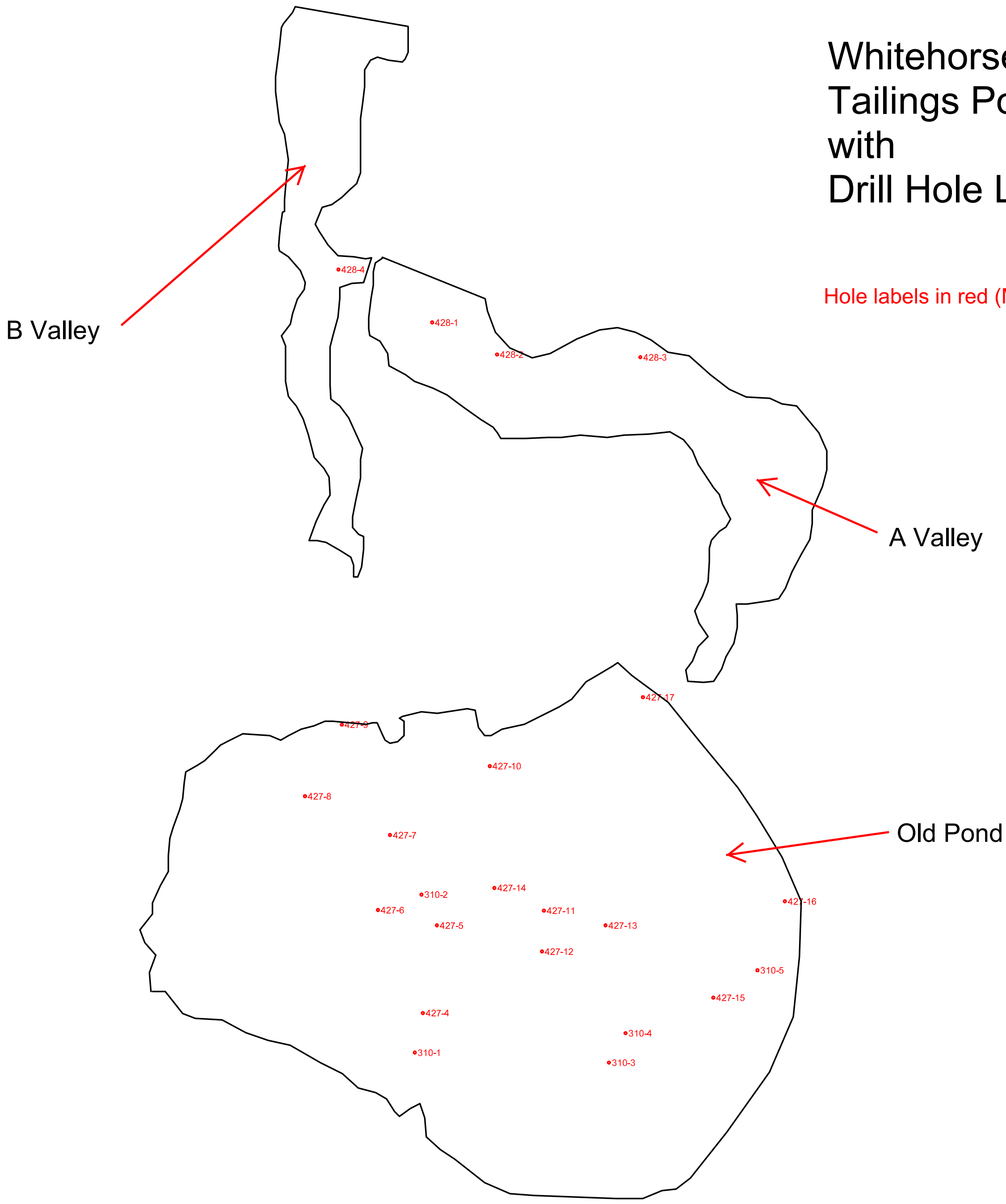

Whitehorse Copper Site
B Valley
A Valley
Old Pond
Plant Site
Access Rd.
Mt. Sima Rd
Little Chief Open Pit and Lake

Description	Equipment Type	Manufacturer	Model	Qty	HP Each	HP Extended
Tramp Screen	Vibrating Screen, 10 Mesh	Metso Tyler	6' x 20'	2	40	80
Rougher Feed Pump	Slurry Pump	Krebs millMax	10" x 8"	1	150	150
Rougher Magnetic Separator	Magnetic Separator	Metso or Eriez	4' x 10' Counter Rotation	2	7.5	15
Fine Screen Feed Pump	Slurry Pump	Krebs millMax	6" x 4"	1	50	50
Fine Screen	Vobrating Screen	Derrick Screen	Stack Sizer	1	5	5
Screen Oversize Classifier	Screw Classifier (Sand Screw)	McLanahan	24" Wide Tank	1	15	15
Finisher Feed Pump	Slurry Pump	Krebs millMax	6" x 4"	1	30	30
Finisher A and B Drums	Magnetic Separator	Metso or Eriez	4' x 10' Counter Current Two	1	2 @ 7.5	15
Finisher Concentrate Pump	Slurry Pump	Krebs millMax	6" x 4"	1	30	30
Slurry Storage Tank Agitator	Vertical Agitator	Metso	For 40' dia. X 45' tall Tank	1	150	150
Filter Feed Pump	Slurry Pump	Krebs millMax	6" x 4"	1	50	50
Filter	Disk Filter	Northstar	8 Disk 9'6" dia.	1	2 @ 5	10
Vacuum Pump	Liquid Ring Vacuum Pump	Nash	CL 6000	2	250	500
Filtrate Pump	Slurry Pump	Krebs millMax	6" x 4"	1	15	15
Main Tailings Pump	Slurry Pump, 2 in Parallel	Krebs millMax	16" x 14"	2	300	600
Process Water Pump	Vertical Turbine Water Pump, 4 in Parallel	TBD	14"	4	250	1000
Loader Pocket / Feeder	Belt Conveyor	TBD	60" x 35'	1	20	20
Tramp Screen Feed Conveyor	Belt Conveyor	TBD	42" x 75'	1	75	75
Filter Cake Conveyor	Belt Conveyor	TBD	24" x 75'	1	10	10
Seal Water Pump	Water Pump	TBD	4" x 3"	1	40	40
Air Compressor	Screw Air Compressor	Sullair	TBD	1	100	100
Building Heat	Hot Air Furnace	TBD	TBD	1	10	10
Total						2970
Allowance for Lighting Etc.			15%			445.5
Plant Connected Load (hp)						3415.5
Plant Connected Load (kw)						2548
Operating Load (kw)			80%			2038

Exhibit 4.1

Whitehorse Copper Tailings Ponds with Drill Hole Locations

Hole labels in red (MDD-XX)



Hole	Location (UTM meters) North	East	Depth ft	Field Comments Moisture	Color	H2O %	Wt g	Mag g	Mag %	+ 150 mesh g	%	Fe %	- 150 mesh g	%	Fe %	- 200 mesh g	%	Fe %	- 270 mesh g	%	Fe %	Weighted Average All Fe %	Less + 150 Fe %
WH 310-1	6,722,996	496,740	5	Damp	Lt gray	22.5%	86.48	13.36	15.4%	1.98	14.8%	20.8%	1.71	12.8%	56.3%	2.70	20.2%	65.8%	6.97	52.2%	68.3%	59.2%	65.9%
			10	Dry/damp	Brownish	10.6%	111.59	10.62	9.5%	1.19	11.2%	28.7%	1.46	13.7%	60.2%	2.21	20.8%	66.5%	5.76	54.2%	68.6%	62.5%	66.8%
			20	Wet	Brownish	21.8%	103.20	2.22	2.2%	0.15	6.8%	20.3%	0.24	10.8%	54.7%	0.33	14.9%	63.8%	1.50	67.6%	66.6%	61.8%	64.8%
		Not bottom	25	Damp	Dk gray	16.9%	105.31	38.45	36.5%	8.40	21.8%	40.2%	6.01	15.6%	59.8%	7.79	20.3%	64.4%	16.25	42.3%	67.5%	59.7%	65.2%
WH 310-2	6,723,232	496,750	5	Damp/wet	Dk gray	16.3%	121.67	24.62	20.2%	1.59	6.5%	19.8%	2.06	8.4%	54.4%	3.77	15.3%	63.3%	17.20	69.9%	67.1%	62.4%	65.3%
			15	Dry/damp	Dk gray	10.1%	105.62	39.49	37.4%	9.28	23.5%	35.9%	7.56	19.1%	61.3%	8.86	22.4%	65.0%	13.79	34.9%	66.9%	58.1%	65.0%
		Not bottom	25	Damp/wet	Lt gray	20.4%	107.92	5.45	5.1%	1.50	27.5%	34.0%	0.97	17.8%	62.2%	0.94	17.2%	65.6%	2.04	37.4%	67.4%	57.0%	65.7%
WH 310-3	6,722,981	4,970,303	5	Wet	Lt gray	21.6%	125.51	16.16	12.9%	0.80	5.0%	15.4%	0.83	5.1%	44.5%	1.95	12.1%	61.0%	12.58	77.8%	66.7%	62.4%	64.8%
		Bottom at 10'																					
WH 310-4	6,723,025	497,055	5	Dry/damp	Dk gray	8.8%	133.92	32.70	24.4%	2.79	8.5%	22.5%	3.58	10.9%	53.7%	6.68	20.4%	63.0%	19.65	60.1%	67.5%	61.2%	64.8%
			15	Dry/damp	Dk gray	8.6%	112.55	37.77	33.6%	11.24	29.8%	45.5%	7.77	20.6%	63.1%	7.00	18.5%	66.5%	11.76	31.1%	67.4%	59.9%	65.9%
			25	Damp	Lt gray	15.6%	135.36	20.99	15.5%	5.08	24.2%	23.3%	3.37	16.1%	51.6%	4.14	19.7%	60.9%	8.40	40.0%	65.4%	52.1%	61.3%
		Not bottom	35	Damp	Dk gray	19.7%	134.25	29.61	22.1%	2.70	9.1%	18.8%	2.24	7.6%	47.3%	4.38	14.8%	59.4%	20.29	68.5%	66.6%	59.7%	63.8%
WH 310-5	6,723,119	497,252	5	Damp	Dk gray	17.7%	129.78	24.580	18.9%	0.150	0.6%	9.6%	0.340	1.4%	21.2%	1.420	5.8%	55.1%	22.670	92.2%	67.2%	65.5%	65.8%
			15	Damp	Dk gray	21.6%	122.21	28.610	23.4%	1.020	3.6%	16.2%	1.510	5.3%	47.4%	4.160	14.5%	61.5%	21.920	76.6%	67.3%	63.6%	65.3%
			25	Wet	Lt gray	28.2%	124.12	10.160	8.2%	0.160	1.6%	15.5%	0.360	3.5%	36.7%	0.680	6.7%	54.7%	8.960	88.2%	65.5%	63.0%	63.7%
		Bottom at 28'	28	Wet	Dk gray	26.4%	116.87	14.570	12.5%	0.100	0.7%	12.9%	0.420	2.9%	33.3%	1.090	7.5%	54.0%	12.960	88.9%	65.5%	63.3%	63.7%
	Sums						1876.36	349.36		48.13			40.43			58.10			202.70				
	Weighted averages					17.9%			18.6%			23.2%			49.9%			61.7%			66.9%	60.7%	64.8%
WH 427-1	6,722,940	496,695	None																				
WH 427-2	6,722,927	496,719	None																				
WH 427-3			5	Damp	Dk gray																		
WH 427-4	6,723,055	496,752	5	Dry/damp	Dk gray																		
WH 427-5	6,723,186	496,773	5	Damp	Dk gray																		
			15	Dry/damp	Lt/Dk gray																		
WH 427-6	*6,723,209*	496,685	5	Dry	Med gray																		
			15	Damp	Lt gray																		
WH 427-7	6,723,321	496,703	5	Wet clumpy	Lt&dk gray																		
			15	Dry/damp	Lt&dk gray																		
WH 427-8	6,723,379	496,576	5	Dry	Lt gray																		
WH 427-9	6,723,486	496,631	5	Wet clumpy	Dk gray																		
WH 427-10	6,723,424	496,852	5	Wet sticky	Lt&dk gray																		
			15	Damp sandy	Med gray																		
WH 427-11	6,723,208	496,933	5	Damp sandy	Med gray																		
	Coord by Brian																						
WH 427-12	6,723,147	496,930	5	Damp sandy	Med gray																		
	Coord by Brian																						
WH 427-13	6,723,186	497,025	5	Damp fines	Med gray																		
	Coord by Brian		25	Damp sandy	Med gray Loggged but no baggie?																		
			35	Wet sandy	Med gray																		
			45	Wet sandy	Med gray																		

Exhibit 4.2

	Location (UTM meters)		Depth	Field Comments		H2O	Wt	Mag	Mag	+ 150 mesh			- 150 mesh			- 200 mesh			- 270 mesh			Weighted Average	
Hole	North	East	ft	Moisture	Color	%	g	g	%	g	%	Fe %	g	%	Fe %	g	%	Fe %	g	%	Fe %	All Fe %	Less + 150 Fe %
			55	Wet fines	Med gray																		
WH 427-14	6,723,242	496,859	15	Damp sandy	Dk gray																		
	Coord by Brian		25	Damp sandy	Med gray																		
WH 427-15	6,723,078	497,186	5	Damp fines	Med gray																		
			15	Wet fines	Med gray																		
			19	Wet fines	Med gray																		
			32	Wet fines	Med gray																		
WH 427-16	6,723,222	497,293	5	Dry/damp	Dk gray																		
			15	Damp fines	Dk gray																		
WH 427-17	6,723,527	497,081	5	Damp clump	Lt gray																		
			39	Very wet goo	Lt gray																		
WH 428-1	6,724,087	496,766	5	Damp sandy	Dk gray																		
			15	Damp sandy	Dk gray																		
			25	Damp fines	Dk gray																		
			35	Damp sandy	Dk gray																		
			45	Damp fines	Dk gray																		
			55	Damp fines	Dk gray																		
			65	Damp fines	Lt&dk gray																		
			75	Wet fines	Med gray																		
			82	Wet fines	Meg gray																		
WH 428-2	6,724,039	496,863	5	Damp fines	Med gray																		
			15	Damp fines	Lt/med gray																		
			25	Wet fines	Med gray																		
WH 428-3	6,724,035	497,077	5	Damp fines	Dk/med gray																		
			15	Wet fines	Med gray																		
			25	Wet sandy	Med gray																		
			35	Wet fines	Lt gray																		
			45			Not logged																	
WH 428-4	6,724,166	496,626	5	Wet sticky	Med gray																		
			15	Wet sticky	Med gray																		
			25	Very wet sticky	Med gray																		
			35	Wet sandy	Dk gray																		
			45	Very wet sandy	Dk gray																		
			55	Very wet sandy	Dk gray																		

Exhibit 4.2

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INSPECTORATE

Certificate#: 10C0913
Project: White Horse Project
Analysis #1: Moisture,Mag Sep,Size,Fe(Fus/Wet)
Analysis #2: Acid Base Accounting
Date In: Mar 15, 2010

Client: Eagle Industrial Minerals Corp.
No. of Samples: 87

Date Out: Apr 15, 2010

March 2010 Samples

Sample Name	SampleType	S(tot) %	pH Paste	NP CaCO3 Kg/MT	MPA CaCO3 Kg/MT	NNP CaCO3 Kg/MT
Composite (Mag)	Pulp	0.11	8.157	21.72	3.31	18.41
Composite (Non Mag)	Pulp	0.11	7.969	167.59	3.31	164.28
Minimum detection		0.01	0.001	0.01	0.01	0.01
Maximum detection		20	14	999	999	999
Method		Leco	ABA	ABA	ABA	ABA

Exhibit 4.3

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INSPECTORATE

April 2010 Samples

Certificate#: 10E1793
Client: Eagle Industrial Minerals Corp. Project: White Horse Project
Analysis #1: Moisture,Mag Sep,Size,Fe(Fus/Wet)
Analysis #2: ABA ICP(H2O)30 pH
Date In: May 25, 2010 Date Out: Jun 19, 2010

Sample Name	Type	pH Paste	NP CaCO3 Kg/MT	MPA CaCO3 Kg/MT	NNP CaCO3 Kg/MT	pH Before	pH After	Al ppm	Sb ppm	As ppm	Ba ppm	Bi ppm	Cd ppm
Composite (raw) Sample 1 Rinse Test	Pulp	--	--	--	--	5.57	9.05	<100	<2	<5	<10	<2	<0.5
Composite (raw) Sample 2 Rinse Test	Pulp	--	--	--	--	5.53	9.06	<100	<2	<5	<10	<2	<0.5
Composite (mag) ABA Test	Pulp	8.906	28.19	3.04	25.15	--	--	--	--	--	--	--	--
Composite (non mag) ABA Test	Pulp	8.460	150.24	2.71	147.54	--	--	--	--	--	--	--	--
Minimum detection		0.001	0.01	0.01	0.01	0.01	0.01	100	2	5	10	2	0.5
Maximum detection		14	999	999	999	14	14	50000	10000	10000	10000	10000	1000
Method		ABA	ABA	ABA	ABA	ENV	4500-H	ICP	ICP	ICP	ICP	ICP	ICP

	Ca ppm	Cr ppm	Co ppm	Cu ppm	Fe ppm	La ppm	Pb ppm	Mg ppm	Mn ppm	Hg ppm	Mo ppm	Ni ppm	P ppm
Composite (raw) Sample 1 Rinse Test	217	<1	<1	<1	<100	<2	3	126	<5	<3	2	<1	<100
Composite (raw) Sample 2 Rinse Test	240	<1	<1	<1	<100	<2	<2	155	<5	<3	1	<1	<100
Composite (mag) ABA Test	--	--	--	--	--	--	--	--	--	--	--	--	--
Composite (non mag) ABA Test	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum detection	100	1	1	1	100	2	2	100	5	3	1	1	100
Maximum detection	100000	10000	10000	10000	50000	10000	10000	100000	10000	10000	10000	10000	50000
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

	K ppm	Sc ppm	Ag ppm	Na ppm	Sr ppm	Tl ppm	Ti ppm	W ppm	V ppm	Zn ppm	Zr ppm
Composite (raw) Sample 1 Rinse Test	120	<1	<0.1	<100	11	<10	<100	<10	<1	<2	<2
Composite (raw) Sample 2 Rinse Test	131	<1	<0.1	<100	13	<10	<100	<10	<1	<2	<2
Composite (mag) ABA Test	--	--	--	--	--	--	--	--	--	--	--
Composite (non mag) ABA Test	--	--	--	--	--	--	--	--	--	--	--
Minimum detection	100	1	0.1	100	1	10	100	10	1	2	2
Maximum detection	100000	10000	100	100000	10000	10000	100000	5000	10000	10000	1000
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

Exhibit 4.3

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INSPECTORATE

March 2010 Samples

Certificate#: 10D1246
Client: Eagle Industrial Minerals Corp.
Analysis #1: Multi Element 50 ICPMS AqR UTrace
Date In: Apr 09, 2010

Project: White Horse Project
Comment #1: samples from 10C0913
Date Out: Apr 20, 2010

	Type	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm
Composite (Mag)	Pulp	1.86	0.13	6.5	8	<0.05	7.68	0.32	0.10	0.77	60.9	7	0.36	1892.8
Composite (Non Mag)	Pulp	3.59	0.95	17.9	49	0.13	7.31	4.71	0.15	7.31	9.3	16	1.24	2683.4
Minimum detection		0.01	0.01	0.1	5	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2
Maximum detection		100	10	10000	10000	1000	10000	10	1000	1000	10000	10000	1000	10000
Method		ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR

Sample Name	Fe %	Ga ppm	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm
Composite (Mag)	34.43	5.32	0.38	<0.02	<3	0.08	0.04	0.4	0.3	2.81	1674	8.10	<0.01	0.06
Composite (Non Mag)	2.35	6.46	0.18	0.08	<3	0.14	0.16	3.9	6.1	5.52	546	25.29	0.02	<0.05
Minimum detection	0.01	0.05	0.05	0.02	3	0.01	0.01	0.2	0.1	0.01	1	0.05	0.01	0.05
Maximum detection	10	10000	1000	1000	1000	1000	10	10000	10000	10	10000	10000	10	1000
Method	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR

	Ni ppm	P ppm	Pb ppm	Rb ppm	Re ppm	S %	Sb ppm	Sc ppm	Se ppm	Sn ppm	Sr ppm	Ta ppm	Te ppm	Th ppm
Composite (Mag)	19.9	68	4.1	3.1	<0.01	0.08	<0.05	0.2	0.8	1.4	9.3	0.01	0.69	0.3
Composite (Non Mag)	10.4	738	4.9	12.0	0.02	0.08	0.60	1.1	1.8	0.9	92.0	<0.01	0.77	2.9
Minimum detection	0.2	5	0.2	0.1	0.01	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
Maximum detection	10000	10000	10000	10000	100	10	10000	10000	1000	1000	10000	1000	1000	10000
Method	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR

	Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
Composite (Mag)	0.014	<0.05	0.79	44	4.59	0.22	109	<0.5
Composite (Non Mag)	0.027	<0.05	2.05	16	6.90	1.82	65	2.8
Minimum detection	0.005	0.05	0.05	1	0.05	0.05	1	0.5
Maximum detection	10	10000	10000	10000	5000	1000	10000	1000
Method	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR

Exhibit 4.4

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INSPECTORATE

April 2010 Samples

Certificate#: 10F1959
Client: Eagle Industrial Minerals Corp. Project: White Horse Project
Analysis #1: Multi Element 50 ICPMS AqR UTrace
Comment #1: Re:job 10E1793
Date In: Jun 11, 2010 Date Out: Jun 24, 2010

Sample Name	Type	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs
		ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Composite (mag)	Pulp	1.46	0.17	8.8	10	<0.05	7.06	0.32	0.11	1.01	62.0	28	0.34
Composite (non mag)	Pulp	2.12	1.13	21.7	70	0.20	7.20	4.49	0.17	8.41	8.7	19	1.58
Minimum detection		0.01	0.01	0.1	5	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05
Maximum detection		100	10	10000	10000	1000	10000	10	1000	1000	10000	10000	1000
Method		ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR

Sample Name	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo
	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm
Composite (mag)	1365.6	35.58	5.31	0.40	<0.02	<3	0.06	0.03	0.5	0.9	2.45	1508	6.13
Composite (non mag)	2328.8	1.91	8.57	0.16	0.11	<3	0.15	0.18	4.6	8.5	6.37	469	23.21
Minimum detection	0.2	0.01	0.05	0.05	0.02	3	0.01	0.01	0.2	0.1	0.01	1	0.05
Maximum detection	10000	10	10000	1000	1000	1000	1000	10	10000	10000	10	10000	10000
Method	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR

Sample Name	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr
	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Composite (mag)	<0.01	<0.05	21.2	55	4.8	3.2	<0.01	0.07	<0.05	0.2	0.8	1.2	10.7
Composite (non mag)	0.02	<0.05	14.5	554	8.6	16.2	<0.01	0.09	0.89	1.5	1.9	1.1	87.4
Minimum detection	0.01	0.05	0.2	5	0.2	0.1	0.01	0.01	0.05	0.1	0.2	0.2	0.2
Maximum detection	10	1000	10000	10000	10000	10000	100	10	10000	10000	1000	1000	10000
Method	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR

Sample Name	Ta	Te	Th	Ti	Tl	U	V	W	Y	Zn	Zr
	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Composite (mag)	<0.01	0.43	0.4	0.016	<0.05	0.80	52	4.14	0.27	114	0.6
Composite (non mag)	<0.01	0.81	2.9	0.035	0.05	2.21	19	7.04	2.11	64	4.2
Minimum detection	0.01	0.01	0.2	0.005	0.05	0.05	1	0.05	0.05	1	0.5
Maximum detection	1000	1000	10000	10	10000	10000	10000	5000	1000	10000	1000
Method	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR	ICPMS-AR

Exhibit 4.4

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Certificate#: 10E1793
Client: Eagle Industrial Minerals Corp. Project: White Horse Project
Analysis #1: Moisture,Mag Sep,Size,Fe(Fus/Wet)
Analysis #2: ABA ICP(H2O)30 pH
Date In: May 25, 2010 Date Out: Jun 19, 2010

Sample Name	Type	pH Paste	NP CaCO3 Kg/MT	MPA CaCO3 Kg/MT	NNP CaCO3 Kg/MT	pH Before	pH After	Al ppm	Sb ppm	As ppm	Ba ppm	Bi ppm	Cd ppm
Composite (raw) Sample 1 Rinse Test	Pulp	--	--	--	--	5.57	9.05	<100	<2	<5	<10	<2	<0.5
Composite (raw) Sample 2 Rinse Test	Pulp	--	--	--	--	5.53	9.06	<100	<2	<5	<10	<2	<0.5
Composite (mag) ABA Test	Pulp	8.906	28.19	3.04	25.15	--	--	--	--	--	--	--	--
Composite (non mag) ABA Test	Pulp	8.460	150.24	2.71	147.54	--	--	--	--	--	--	--	--
Minimum detection		0.001	0.01	0.01	0.01	0.01	0.01	100	2	5	10	2	0.5
Maximum detection		14	999	999	999	14	14	50000	10000	10000	10000	10000	1000
Method		ABA	ABA	ABA	ABA	ENV	4500-H	ICP	ICP	ICP	ICP	ICP	ICP

Sample Name	Ca ppm	Cr ppm	Co ppm	Cu ppm	Fe ppm	La ppm	Pb ppm	Mg ppm	Mn ppm	Hg ppm	Mo ppm	Ni ppm	P ppm
Composite (raw) Sample 1 Rinse Test	217	<1	<1	<1	<100	<2	3	126	<5	<3	2	<1	<100
Composite (raw) Sample 2 Rinse Test	240	<1	<1	<1	<100	<2	<2	155	<5	<3	1	<1	<100
Composite (mag) ABA Test	--	--	--	--	--	--	--	--	--	--	--	--	--
Composite (non mag) ABA Test	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum detection	100	1	1	1	100	2	2	100	5	3	1	1	100
Maximum detection	100000	10000	10000	10000	50000	10000	10000	100000	10000	10000	10000	10000	50000
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

Sample Name	K ppm	Sc ppm	Ag ppm	Na ppm	Sr ppm	Tl ppm	Ti ppm	W ppm	V ppm	Zn ppm	Zr ppm
Composite (raw) Sample 1 Rinse Test	120	<1	<0.1	<100	11	<10	<100	<10	<1	<2	<2
Composite (raw) Sample 2 Rinse Test	131	<1	<0.1	<100	13	<10	<100	<10	<1	<2	<2
Composite (mag) ABA Test	--	--	--	--	--	--	--	--	--	--	--
Composite (non mag) ABA Test	--	--	--	--	--	--	--	--	--	--	--
Minimum detection	100	1	0.1	100	1	10	100	10	1	2	2
Maximum detection	100000	10000	100	100000	10000	10000	100000	5000	10000	10000	1000
Method	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP	ICP

Exhibit 4.5