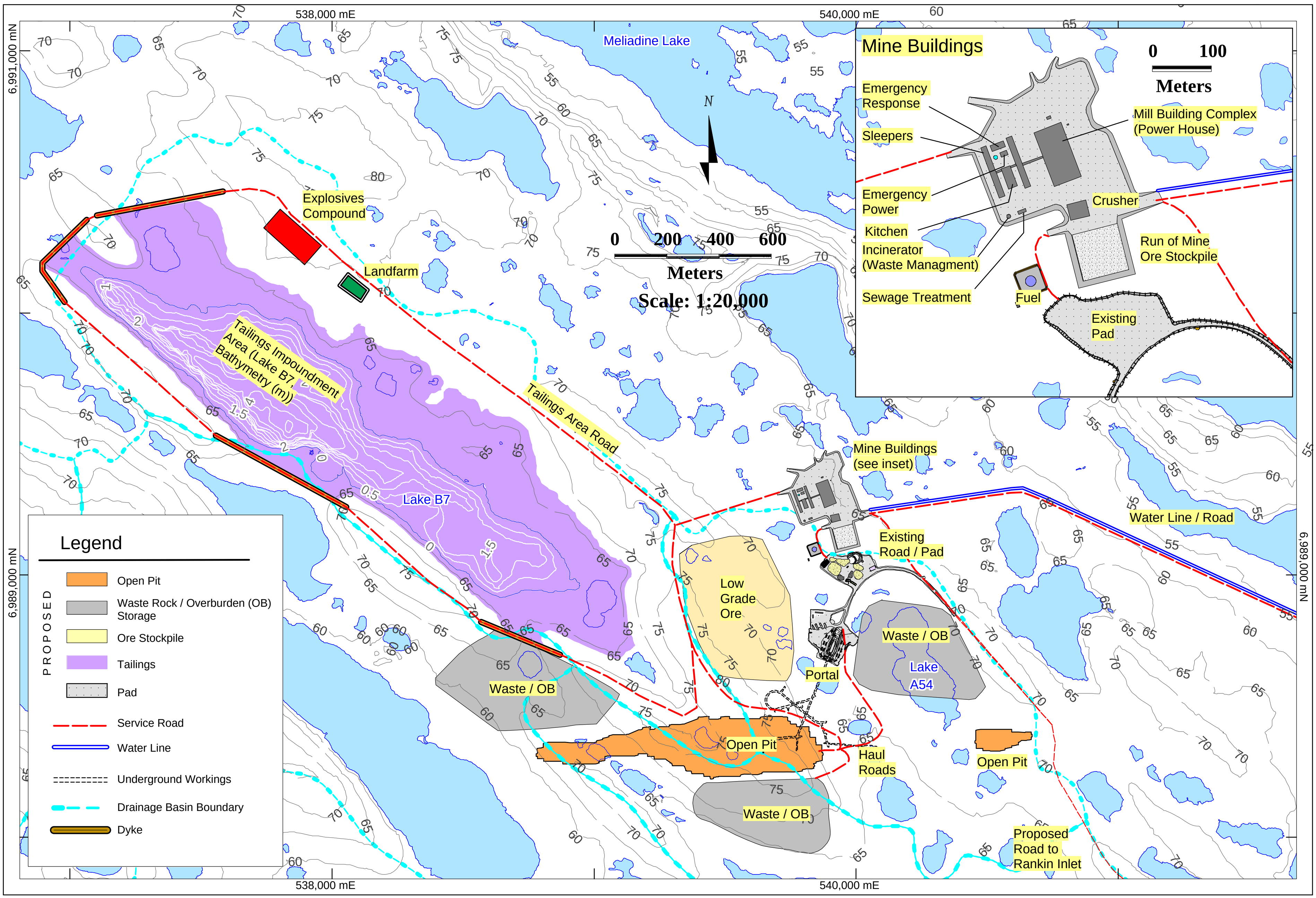


Figure 2-4: Proposed Tiriganiaq Infrastructure

2.2.5 Open Pit Development

Conventional surface mining, using drill-and-blast excavation and truck haulage, is proposed for three near-surface gold deposits to complement the underground operation at Tiriganiaq, as follows:

- Tiriganiaq: Main pit, and smaller pit to the east;
- F Zone: Several small open pits located 5.1 km southeast of Tiriganiaq, and
- Discovery: One small open pit, 22.4 km southeast of Tiriganiaq.

The preliminary selection of the surface mining fleet is shown in Table 2-4.

Table 2-4: Open Pit Mining Equipment Fleet

Quantity	Item	Specification
2	Production drill	76-178 mm bit
2	Backhoe excavator	3 m^3 bucket
1	Loader	4 m^3 bucket
8	Truck	35 ton
1	Grader	7.3 m blade
2	Trackdozer	310hp
1	Trackdozer	410hp
1	Wheeldozer	354hp
1	Water truck	
1	Service truck	
1	15t crane	
4	Pickup truck	
1	Forklift	

2.2.5.1 Tiriganiaq Open Pits

The gold mineralization at the Tiriganiaq deposit extends to the bedrock surface. This allows the upper part of the Tiriganiaq deposit to be selectively mined from shallow open pits. Two pits have been defined, the main pit and a smaller pit to the east of it. These are presented in Figure 2-4.

The haul distance from the main Tiriganiaq pit exit to the crusher is about 1.3 km, depending on the layout of pit ramps and haul roads. Further detail will be forthcoming from the Feasibility Study.

The waste rock is categorized in Acid Rock Drainage (ARD) and non-ARD rock types. The non-ARD waste rock and some overburden material that meets the required specification for building material will be crushed, screened, and used for the construction of tailings dykes, foundations, laydown pads and roads. Use of non-ARD waste rock in construction will take into account that some trace metals such as arsenic can be elevated above CCME fresh water aquatic life guidelines in leachate draining from the waste rock. Separate waste management areas are proposed for the ARD and non-ARD material.

Due to the thick (approximately 20 metres) overburden on top of the Tiriganiaq ore bodies, pre-stripping will be required in order to expose the mineralized rock for mine production.

2.2.5.2 F Zone Open Pits

The F Zone gold deposit is located approximately 5.1 km by road to the southeast of the Tiriganiaq deposit. Several potential open pits, 50 to 100 metres apart, have been defined and are presented on Figure 2-5 along with associated infrastructure. The proposed route connecting the F Zone to the main camp would be a 2.4 km long spur road to the all-season road from Rankin Inlet to the mill site.

In order to excavate the westernmost pit at F Zone, a small bay of Lake A6 will be closed by a 250 metre long dyke and subsequently dewatered. The water depth where the dyke will be placed is less than one metre. Water flow into Lake A6 would either be pumped around the development for a short term or a water diversion channel will be built to allow water to flow round the development and provide for fish migration and fish habitat.

2.2.5.3 Discovery Open Pit

The Discovery deposit is located approximately 22.4 km east-southeast of the proposed main site. The Discovery deposit has the potential to be mined as a satellite deposit after the Tiriganiaq pit has been exhausted and mining at F Zone is winding down.

The road to Discovery, the pit outline, and the overburden and waste rock management areas are shown in Figure 2-6. No lakes are present in the immediate area of the proposed Discovery pit or the waste/overburden management areas.

2.2.6 Tailings Impoundment Area

The Lake B7 basin is the preferred location[2] for a tailings impoundment area. Saddle dykes will be built to engineering standards in low-lying areas around the tailings impoundment area to contain the tailings and provide additional storage. Esker material and waste rock from the Tiriganiaq pit will be used for construction. Unprocessed material will be used for the dyke embankments with bedding and filter material requiring simple processing of some of the esker presently covering the deposit. Filter material will be placed on the up-stream side of the rock fill to serve not only as bedding for a low permeability liner system, but also to prevent migration of tailings particles in the event of liner leakage. A protective layer of sand and gravel will cover the low permeability liner system.

Preliminary work suggests that the initial dyke crest elevation will be 66 metres above sea level (masl), with dykes being built up during the mine life to an ultimate crest elevation of approximately 80 masl. It is likely that the dyke crest would be 10 metres wide to accommodate 35 ton rock trucks during construction. A haul road suitable for 35 ton trucks will be constructed from the open pit and waste rock management area to the tailings impoundment area and will continue around its perimeter. Construction of the tailings impoundment area will be phased around the mine production schedule and the availability of waste rock from mining as construction material.

[2] Four possible areas for the tailing impoundment area were considered and are discussed in section 2.3.3 below.

Following a Schedule 2 listing under the Metal Mining Effluent Regulations and receipt of all other relevant approvals, the lake will be dewatered by pumping water downstream in the basin. Dewatering options are presently being investigated. Preliminary discussions with Fisheries and Oceans Canada indicate fish habitat compensation will be required and studies are ongoing to determine how best to fulfill this requirement.

2.2.7 Low-Grade Ore Stockpiles, Pads, and Waste Rock and Overburden Management Areas

The proposed location of the medium/low-grade ore stockpiles, pads, and waste rock and overburden management areas aim to minimize any short and long term environmental impacts, and optimize the mining operation accordingly. Geotechnical drilling and mapping of each of the areas is ongoing, with the Feasibility Study determining final layouts.

Ore hauled to the mill will be placed on a run-of-mine (ROM) ore stockpile located near the primary crusher. The approximate capacity of this stockpile will be 25,000 tonnes, representing one week's production of ore. See Figure 2-4 for the location of the ROM ore stockpile.

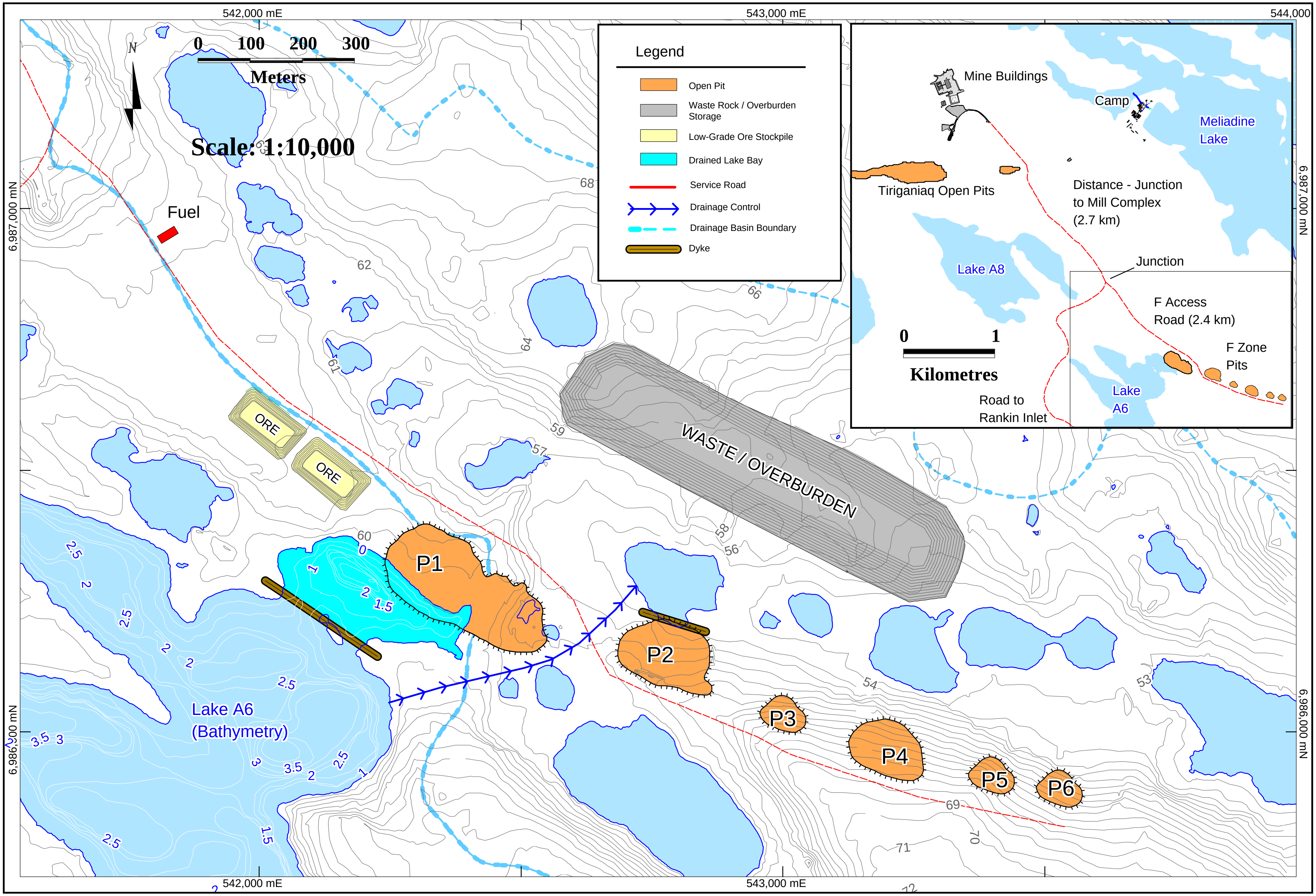


Figure 2-5: Proposed F Zone Infrastructure

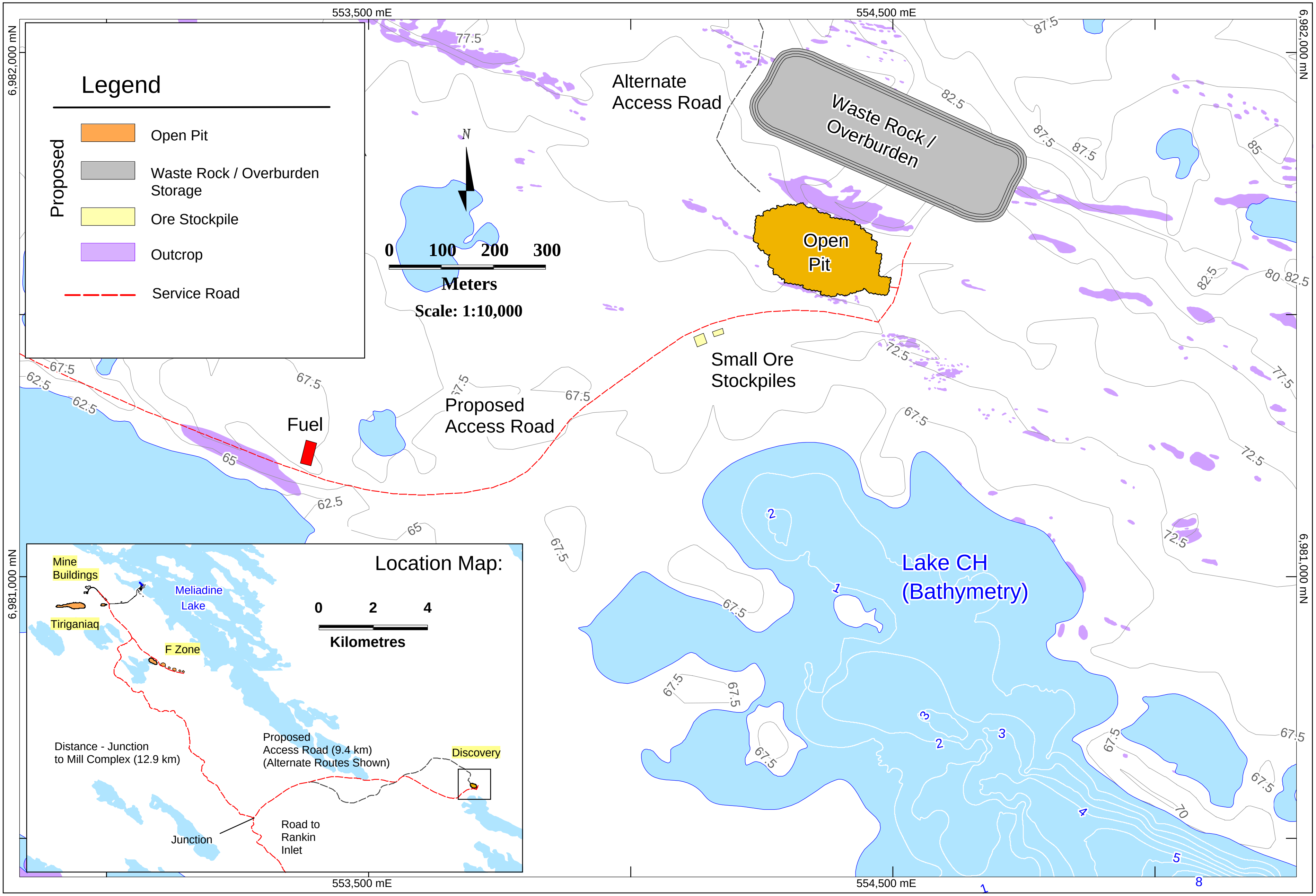


Figure 2-6: Discovery - Proposed Infrastructure

2.3 Preferred Options and Alternatives

2.3.1 Preliminary Project Description and Project Status

The information and concepts presented in this Preliminary Project Description are based on the Preliminary Assessment completed in February 2009. This document synthesized all available information on the Project, including a 2001 Pre-Feasibility Study completed for WMC on the Meliadine Project by independent consultant Beca-Simons. During 2009, Comaplex compiled all previous and current information and used experienced independent consultants to update the studies. The company plans to initiate a Feasibility Study for completion in late 2010. The draft Environmental Impact Statement will incorporate information from the Feasibility Study.

2.3.2 Mining Alternatives

Gold deposits on the Meliadine property will be mined by a combination of underground and open pit methods. Early on, alternatives to the existing mine plan were investigated, including analysis by Comaplex and others of deeper and larger open pits at the deposits. The present proposed mine plan calls for relatively shallow open pits at Tiriganiaq, F Zone and Discovery, with the majority of ore obtained from the underground mining of the Tiriganiaq gold deposit. This mining plan was found to be the most advantageous to the Project at this time as the emphasis on underground mining produces less waste rock, minimizes the footprint of the mine, and provides better economics than all other alternatives.

2.3.3 Tailings Impoundment Area Alternatives

Four different locations close to the mill complex were investigated for the tailings impoundment area. These were:

(a) on land and in shallow lake basins northwest of the mill,
(b) on land and in shallow lake basins southeast of the mill, including Lake A54,
(c) on land and in shallow lake basins south of the mill, including Lake A8, and
(d) in the Lake B7 basin to the west and northwest of the mill.

Recent fisheries work indicates that all of the sites would adversely impact fish habitat and would require a Schedule 2 listing under the Metal Mining Effluent Regulations. No one area in the vicinity of the mine could be found where adverse impact on fish habitat could be avoided. In all cases, a fish habitat compensation plan would be required.

Tailings site alternatives (a) to (c) above were largely sub-aerial leading to the difficulty in controlling dust, especially site (a) which is directly upwind of the plant site and, to a certain degree, upwind of Meliadine Lake. Additionally, the volume of tailings that could be stored in the three areas is limited, especially at sites (b) and (c). The footprints of the three areas, the length of dykes that needed to be built, the possibility of drainage into Meliadine Lake for sites (b) and (c), and economic considerations all contributed to the first three areas being rejected.

Lake B7 is the preferred tailings impoundment area because:

- It is a natural basin at the top of the drainage,
- The basin is relatively self-contained with only a few small intermittent drainage paths into other water bodies,
- With the construction of a few relatively short saddle dykes, sufficient volume would exist to hold all the tailings generated over the mine life,
- It has the best potential to contain extra tailings from an extended mine life,
- It is confined by high natural ridges on three sides which should lessen wind effects and the generation of dust,
- It is located relatively close to the mill,
- It is farther from Meliadine Lake than the other alternatives, and
- Drainage from Lake B7 passes through a series of small lakes that will polish any treated effluent before it reaches Meliadine Lake to the south.

Comaplex is considering depositing the tailings material in one of three forms:

- a conventional slurry having a high water content (thickened tailings),
- a paste [3] having a medium water content, and
- as solids (filter cake) having a low water content.

The slurry option is the most common method of storing tailings. It is proven technology and is well understood. The volume of the proposed tailings impoundment area is sufficient to hold all tailings in this form for the projected mine life. This includes an allowance of approximately 20 percent of volume of the tailings impoundment area due to the formation of ice lenses in the tailings.

Should the paste option for tailings be selected, the footprint of the tailings impoundment area will be minimized as a substantial fraction of all tailings could potentially be pumped underground as paste backfill (this is now being investigated). As the temperature underground is stable at -6 to -8° C, these tailings will freeze shortly after placement and will not require any further reclamation underground. The net result of storing half the tailings underground will be a commensurate reduction of tailings reporting to the tailings impoundment area and a corresponding reduction in the area needed for tailings storage. An additional positive feature in dewatering the tailings to a paste will be the reduced entrainment of ice which will further assist in reducing the storage volume for the tailings.

One of the three options will be selected during the Feasibility Study with the preferred option being presented in the draft Environmental Impact Statement.

Regardless of the option selected, the Meliadine Gold Project will undertake Environmental Effects Monitoring to collect data prior to the construction of the tailings impoundment area, throughout its operation and following reclamation. This would be in addition to Compliance Monitoring.

2.3.4. Access Road Alternatives

[3] Paste tailings are defined as tailings that have been significantly dewatered to a point where they do not have a critical flow velocity when pumped, do not segregate as they deposit, and produce minimal (if any) bleed water when discharged from a pipe.

A winter-only access road for the proposed mine was briefly considered, but was rejected in favour of an all-season road for the Project. A winter road would severely, and unnecessarily, restrict the time periods when supplies and personnel can be brought to site. An all-season road allows flexibility in supplying the mine, allows workers from Rankin Inlet the option of returning home after their shift, and allows other residents of Rankin Inlet to pursue traditional activities in the Meliadine Lake area. Economic advantages accrue to the mine and the community in having all-season access to the infrastructure and services in Rankin Inlet.

A road presently exists half way to the proposed mine site, but this routing was not selected due to the number of streams that remained to be crossed and because it passes through the Territorial park.

As of this time, the final decision has not been made on whether the spur roads from the F Zone and Discovery deposits should be winter only or all-season roads. These spur roads will join the proposed all-season road from Rankin Inlet to the mine site. The final decision will become more obvious during the Feasibility Study and will be presented in the draft Environmental Impact Statement.

2.3.5. Accommodation Alternatives

Consideration was given to accommodation for workers in Rankin Inlet with regular bus service to the mine site, rather than a camp on site. However, due to transportation, logistics, social issues and weather considerations, a fully catered camp with a fly-in, fly-out rotation is preferred. Camp accommodation will be sufficient for the entire work force. Complex is considering a bus service at shift times between the site and Rankin Inlet to give local residents the option to live at home and work at the mine. However, this option raises substantial operational and health and safety issues, and will be considered in further detail in the Feasibility Study and draft Environmental Impact Statement.

2.3.6. Project Alternatives

The Meliadine Gold Project, as presently proposed, is a medium-term, medium-sized mining operation having a currently estimated life of 16 years for construction, operations and closure. To forego building the mine, a minimum of 6000 person years of employment would be lost, and business and economic development in the Kivalliq region would suffer accordingly.

2.3.7. Project Schedule Alternatives

Scheduling any project in the Arctic is tightly constrained by shipping seasons and by weather windows for certain types of outdoor work. The Project schedule therefore offers few possibilities for alternatives. If slippage occurs at any point in the schedule, there will be potentially lengthy and disproportionate delays in planned activities.

2.4 Project Operations

The Meliadine Gold Project will include both open pit and underground development. The combination of the two types of mining is necessary to obtain the best possible economic return for the Project. The open pits will be located at the Tiriganiaq, F Zone and Discovery deposits. Underground mining will take place only at the Tiriganiaq deposit. No underground development is presently planned for the F-Zone and Discovery deposits, but this may change with continued exploration. Such a change is not proposed for this application. The expected tonnes of overburden, waste rock, and ore for the various areas to be mined are provided in Table 2-5.

Table 2-5: Estimated Mine Production Schedule (1000 tonnes)

Ore Source	Pre-strip	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Underground												
Tiriganiaq u/g		712	690	715	695	680	717	707	672	700	386	6674
Open Pits												
Tiriganiaq		350	310	320	343	329	100					1,752
F Zone							290	283	293	228	230	1,324
Discovery									70	100	116	286
Overburden												
Tiriganiaq	3,280	480	80	70	60							3,970
F Zone						180	350	80	80			690
Discovery									100	100		200
Waste Rock												
Tiriganiaq pit	820	300	700	540	400	300	50					3,110
Tiriganiaq u/g	425	124	81	22	71	75	36					834
F Zone						500	500	1,000	1,000	1,060	650	4,710
Discovery									500	1,300	1,000	2,800
Medium Grade/Low Grade												
Tiriganiaq			50	60	110	60						280
F Zone							40	140	100	100	30	410

2.4.1 Mine Production Schedule

The ore from the open pits and underground will be trucked to the crusher stockpile. The economical cut-off grade will be estimated based on gold price and operational parameters. Material that is mineralized, but below the cut-off grade will be stockpiled for possible processing in the later years of the operation.

The open pits will be mined sequentially with Tiriganiaq first, followed by the other two deposits. Pre-development of the underground workings and the stripping of overburden and waste rock at the Tiriganiaq will commence prior to the plant production. A 10 year mine production life is presently proposed.

The life of mine ore production, as envisioned at the scoping level of detail, is summarized in Table 2-5. The detail in this schedule will change as a result of pre-feasibility and feasibility studies.

2.4.2 Underground Mining

Underground mining of the Tiriganiaq deposit will be the most important component of the proposed Meliadine Gold Project. Deposits of this geological type commonly extend to depths of 1500 to 3000 metres in mines around the world and the open-ended potential of this deposit, as presently understood, seems to bear this out. It is expected that additional underground exploration work will be conducted as the production and extraction of existing mineral reserves takes place. Due to the different widths and characteristics of the various gold mineralized surfaces in the underground mine, two different underground mining methods are proposed:

1) Mechanized cut and fill mining for narrower, more complex zones, and;
2) Longhole / blasthole mining for larger, thick ore horizons.

Work on the details of the underground program is ongoing and refinements to the mine layouts and schedules are expected.

Access to the underground mine will be by way of the portal developed for the underground exploration and bulk sampling program[4]. The portal and ramp were designed to production standards being 5.2 metres high and 5.2 metres wide. The only addition will be a cover built over the portal on surface to prevent the accumulation of snow on the ramp.

In order to mine and extract sufficient tonnages for daily mill requirements, mining will take place on multiple levels, on multiple working faces. Scoop tram and truck operators will remove waste rock and ore, transport the ore to the surface and place it on the crusher stockpile. The waste rock will be dumped in mined out areas or if in excess of the underground capacity at the time, will be hauled to the surface and placed in the waste rock management area. Equipment used in the underground mining will be substantially the same as for mine development and is listed in Table 2-3.

[4] NIRB Screening Decision No. 07EN044 contains the review of the underground exploration and bulk sampling program.

Consideration is being given to the idea of using paste fill as backfill in mined out stopes and as fill in cut and fill mining areas. This procedure is well established in southern mines, but new to the Arctic, where the cold becomes a substantial factor in the movement of the paste. The paste is generated from tailings in a special plant as part of the final process in the mill.

Underground mining will be in the zone of continuous permafrost, which extends to depths of approximately 350 to 450 metres below surface. Since mining may extend below the permafrost in later years, testing of the hydraulic conductivity of the bedrock below the permafrost has been undertaken, and a hydrological model for the deep ground water will be developed for the Project. Details will be provided in the draft Environmental Impact Statement.

2.4.3 Open Pit Mining

Conventional surface mining methods will be used in all three sites. Frozen overburden, ore and waste will be excavated by drilling and blasting in benches. Backhoe and shovel-type excavators will load material into 35 ton trucks. These will haul the material to the crusher stockpile or waste management area.

The mining sequence of the open pits will be optimized in the Feasibility Study, which is anticipated to be completed in late 2010.

2.4.4 Ore Processing

The Meliadine Gold Project will use a conventional milling and gold recovery process. The process is a series of sequential steps consisting of crushing, grinding, gravity separation of free gold, sulphide flotation, cyanide leaching of the sulphide concentrate, and gold recovery. The base case flow sheet describing the ore milling and gold extraction process is illustrated in Figure 2-7.

Ore from underground will be blended with ore from the open pits and fed into the primary crusher. The mill will process 3000 tonnes per day consisting of 1600 to 2000 tonnes per day from underground and 1000 to 1400 tonnes per day from the open pits.

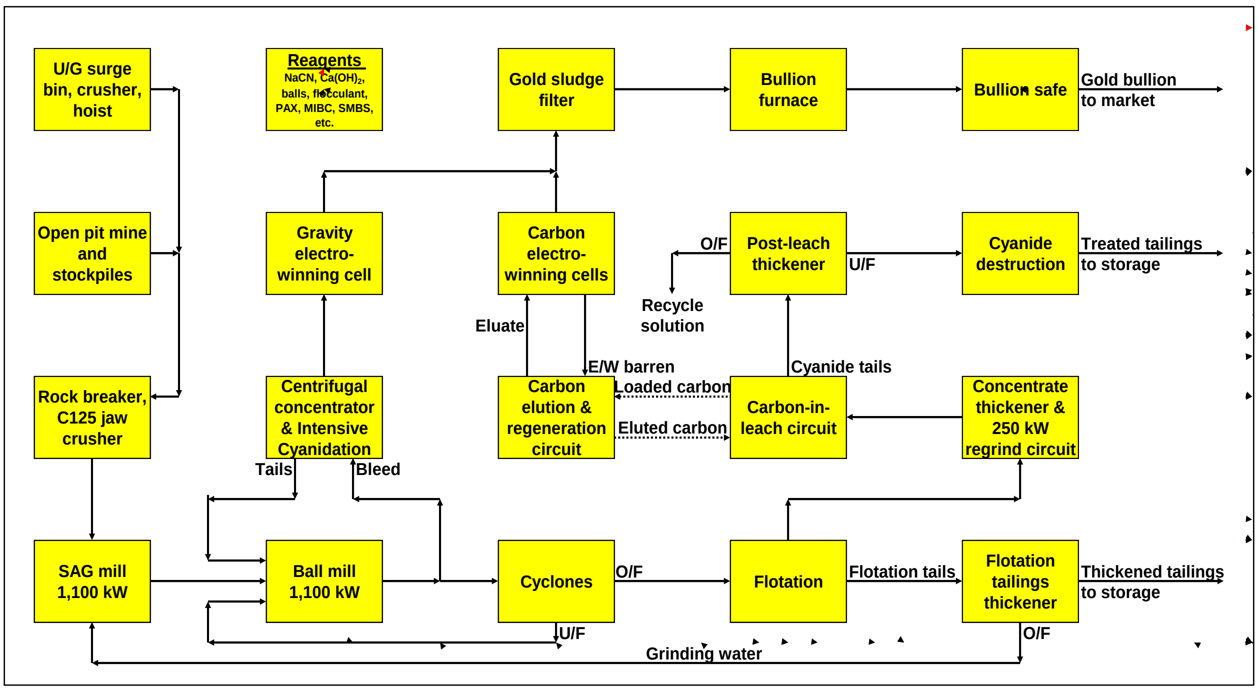
The ore will be crushed to 150 mm in the primary crusher and fed by conveyor into a second grinding circuit located inside the mill building where the ore is reduced to a sand sized consistency. This will be followed by further grinding, which reduces the rock to a fine slurry. At this point, free gold will be recovered by means of gravity separation, which will recover up to 45% of the total gold in the rock.

The slurry still containing bound gold from the gravity circuit will be concentrated in flotation cells and the flotation concentrate reground and cyanide leached. This concentration step reduces the mass of solids for cyanidation. In environmental terms, this reduces the amount of reagents, including cyanide, required for overall processing.

Activated carbon will then be added to the leaching process. Gold cyanide adsorbs onto the activated carbon (CIL process). Loaded carbon will then be stripped of gold and the solution containing dissolved gold pumped into an electrolyte storage tank where it is recovered on steel wool cathodes. Loaded cathodes are treated, dried, and oxidized and the remaining material directed to smelting furnace to produce molten doré bullion which is poured into moulds and allowed to cool to form gold bars. These are placed in secure storage for shipment.

On recovery of gold from the gravity and leach circuits, all the tailings will be filtered to recycle the cyanide solution within the mill to the extent possible. Tailings containing residual cyanide will be passed through a cyanide destruction plant before being discharged to the tailings management area.

Figure 2-7: Preliminary Block Diagram of Gravity-Flotation-Cyanidation Flowsheet



2.4.5 Tailings, Ore Stockpiles, and Waste Rock and Overburden Management

Overburden will be stripped from the open pits early in the development of each deposit. The overburden may require berms of waste rock to contain possible flow of the material as it thaws over the first summer.

Studies are in progress to characterize the Tiriganiaq esker overlying the proposed open pit to determine how much of this material will be usable for construction. This material is anticipated to be inert with respect to acid rock drainage. However, the esker material has been found on occasion to leach some trace metals in concentrations above the CCME guidelines for fresh water aquatic life. Further testing is underway to evaluate the ARD and metal leaching potential of this material. The results will be included in the draft Environmental Impact Statement.

Waste rock will be used for site development with the excess going to the waste rock management areas. Analyses of the waste rock for acid generation potential are in progress and will be presented in the draft Environmental Impact Statement.

Approximately 3000 tonnes of tailings will be produced daily, with a solids composition to be determined in the Feasibility Study. Assuming a slurry, this material will be pumped to the tailings impoundment area for end-of-pipe discharge. The location of the discharge point within the tailings impoundment area will be moved as required.

Final quantities of tailings, stockpiles, overburden and waste rock will be determined in the Feasibility Study and will be included in the draft Environmental Impact Statement. Preliminary estimates in tonnes are provided in Table 2-5.

2.4.6 Site Water Management

2.4.6.1 Water Use

Water will be used for domestic, mining and mineral processing purposes. Fresh water will be pumped from Meliadine Lake to a fresh water tank located in the mill building. From there it will be distributed through a pressurized system to the potable water treatment plant and to the mill. A separate fire fighting main will also be kept under pressure.

Potable water treatment will include the addition of chemicals to the fresh water followed by sedimentation, filtration and ultraviolet disinfection or chlorination. Potable water will be supplied to the accommodation complex for domestic purposes and to the mill complex change rooms and washrooms.

Most of the water used in the mill process will be waste water that is continuously reclaimed and will only be re-charged with fresh water as required. Treatment of fresh water is not necessary for the mill process. Water will be reclaimed both by dewatering the tailings within the process plant or by reclaiming waste water from the tailings impoundment area. Arctic conditions suggest the maximum possible retention of water in the mill complex is preferred. This issue will influence the ultimate selection of a tailings disposal method in the Feasibility Study.

Dedicated and pressurized water lines for fire-fighting will run from the fresh water tank to distribution points in the mill and the accommodation complex. Water for fire-fighting will take priority over all other uses. The lines delivering the water for fire-fighting will have a greater diameter than the potable water lines and will be at a higher pressure. Sprinklers will be located in accordance with building codes.

Water use will be detailed in the draft Environmental Impact Statement.

2.4.6.2 Water Management

Water management will ensure that any water directly affected by mine operations is controlled, tested and only released to the receiving environment upon meeting license/MMER limits. Exact locations of water collection sumps at the Tiriganiaq, F Zone and Discovery mining areas will be determined once details on the locations of the various management areas and pits are determined in the Feasibility Study. The sumps will be sized to hold water running off the waste rock and overburden management areas and the low grade ore stockpiles. The sumps will also be sized for any water pumped from the open pits. Water samples will be collected from the sumps and if license/MMER conditions are met, the water will be released to the environment. If not, the water will be treated and held until it meets license/MMER conditions. Water collected from the Tiriganiaq deposit and plant site sumps will be the exception as it can be recycled to the mill.

Underground mining may penetrate below the permafrost. Studies have been initiated to estimate the potential quantity and quality of water that may be encountered below the permafrost and how it will be handled.

Waste water from the accommodations complex will be treated in a sewage treatment plant before being directed to the tailings impoundment area.

2.4.7 Waste Management

Site operations will use all available opportunities to reduce, reuse and recycle waste materials. Where this is not possible, waste materials will be disposed of in accordance with best practices and applicable regulations. Inert, non-recyclable, non-combustible solid waste will continue to be disposed of in the Rankin Inlet municipal landfill.

The plant site will include a dedicated waste management building in accordance with current practice at other northern mines. This building will be separate from the accommodation and mill complexes and will be used for waste processing, packaging and temporary storage.

The building will house a high-efficiency, dual-chamber, controlled-air incinerator for all combustible, non-hazardous wastes. Other equipment in the waste management building will include a barrel crusher, a plastic shredder, drip trays for oil filters and paint cans, and means of packaging hazardous wastes. Hazardous wastes will be packaged for shipment off-site to registered hazardous management facilities in southern Canada. Wastes that can be handled onsite or locally will be managed daily. The accumulation of wastes will be avoided through an active waste management program.

The waste management building will be managed and operated by workers in the surface maintenance department after proper training. They will be issued appropriate personal protective equipment, including the means for decontamination, as applicable.

A land farm will be built for the containment and treatment of contaminated soil and snow.

A Waste Management Plan will be developed that will detail how non-hazardous and hazardous waste will be identified, handled and properly disposed of at or from the mine site. This plan will build on the existing plan under water licence 2BB-MEL0914 and will be included in the draft Environmental Impact Statement.