Doris North Project
Interim Water Management Plan

Report Prepared for

Hope Bay Mining Ltd.

Report Prepared by

SRK Consulting (Canada) Inc.
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Interim Water Management Plan

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1 Introduction

Hope Bay Mining Limited (HBML) is conducting advanced exploration and developing the infrastructure for the Doris North Mine (the Project) in Hope Bay, Nunavut, Canada. The Project is located on Inuit Owned Land administered by the Kitikmeot Inuit Association (KIA), in the West Kitikmeot region of Nunavut approximately 125 km southwest of Cambridge Bay and 75 km northeast of Umingmaktok.

This *Doris North Interim Water Management Plan* (the Plan) has been prepared by HBML in accordance with Type A Water Licence No. 2AM-DOH0713, (the Licence) and subsequent amendments to the Licence issued to HBML by the Nunavut Water Board (The Board). The Licence sets out a number of terms and conditions related to the management of water at the Doris North site. All of these terms and conditions have been considered throughout the development of the Plan. A table of concordance was prepared and provides the specific Terms and Conditions of the Licence that pertain to the management of water within the Doris North Mine Area of the Doris North site and where in the Plan the condition is addressed (Appendix A).

1.1 Purpose and Scope of the Plan

The purpose of the Plan is to update and replace the 2011 Interim Water Management Plan (SRK 2011). The Plan addresses the requirements of the Licence listed in Part F, which are:

a. A requirement to continuously monitor Doris Lake levels and outflow during the two (2) years of mining and beyond to confirm water balance model predictions;

b. Requirements for on-going monitoring and calibration of the water quality model;

c. A strategy to monitor and remove where necessary snow accumulation in the Pollution Control and Sediment Control Ponds, roads, ditches, and drainage channels; and

d. The Plan shall consider the monitoring requirements set out in Parts J and K.

The Water Management Plan presented in the 2007 Licence application by Miramar Hope Bay Mining Ltd. (MHBL) anticipated water will be deposited to the Tail Lake Tailings Impoundment Area (TIA) during mining operations (MHBL 2007). During 2011, the Doris North Mine Area managed water according to the 2011 Interim Water Management Plan (SRK 2011). Until the site is in operation and tailings are discharged to Tail Lake, HBML will implement an alternative water management strategy described in this Plan. A final water management plan will be implemented once tailings are deposited into Tail Lake. There are two water management alternatives that can be employed prior to the discharge of tailings to the Tail Lake TIA:

- Alternative 1: The current preferred alternative is to collect runoff and underflow from the Doris North waste rock, camp and mining pads and then to pump this water to Tail Lake. A dedicated pipeline will be used to convey this water to Tail Lake during this interim period prior to operations.
- Alternative 2: The second alternative is to collect impacted water in the surge pond, treat the water using reverse osmosis (RO) and then manage treated water and RO brine in additional temporary ponds. This multi-pond system will give the operation storage capacity and flexibility to meet the terms and conditions of the Licence, which apply to this phase of the project. These water management alternatives are described in Section 3.

While Alternative 1 is the current preferred option, HBML may implement Alternative 2 in the future depending on site conditions.

The Plan addresses the short-term water management needs of the Project (Figure 1). The Plan describes how to manage runoff and underflow from this area. Runoff and underflow result from snowmelt and precipitation events. The Plan addresses these components of the overall Hope Bay Water Management Plan (MHBL 2007) from January 1, 2012 until the site is in production.

Prior to the Doris North Mine / Mill being in production and tailings deposition in the Tail Lake TIA begins, HBML will submit a comprehensive Water Management Plan detailing the integration of all previously approved components and those that are currently in the regulatory process for the Project involving the conservation, use, reuse, treatment and release of water to the environment as per the Licence and NIRB Project Certificate Number 003.

This Plan addresses:

- Diversion of non-impacted runoff and underflow from entering the Doris North Mine Area;
- Collection of contact and non-contact runoff;
- Interception of underflow from the pads;
- Collection, management and/or treatment of potentially impacted underflow and runoff;
- Management of extreme rainfall events up to a 1 in 25 year 24 hour duration storm event; and
- Protection of surface water bodies from potentially impacted runoff from the Doris North Mine and Camp.

1.2 Responsibility

The overall responsibility for the implementation, operation and monitoring of the Interim Water Management Plan rests with HBML General Manager of Operations. The General Manager will be responsible to ensure that all necessary resources and personnel are made available, to ensure that components of the water management plan such as pipelines, diversion berms, lined ponds, silt curtains and the water treatment plant are ready for operation prior to onset of the 2012 freshet and that these facilities are maintained throughout the open water season and properly taken off line prior to freeze up in the fall.

The water treatment plant operators, under the ultimate authority of the HBML General Manger of Operations, will be responsible for the proper operation and maintenance of the Water Treatment Plant.

The Manager of Environmental Compliance, the Environment and Social Responsibility Site Manager, and the Environmental Coordinator will be responsible for reporting requirements related to all monitoring associated with all component parts of this plan.

2 Site Description

2.1 Climate

Climatic data has been collected for the project at the Boston and Windy camps during exploration activities between August 1993 and 2003. Additional meteorological data has been collected from the Doris North climate station between March 2004 and December 2008. These local datasets and longer term regional datasets collected from a variety of Environment Canada meteorological

weather stations such as Cambridge Bay and Kugluktuk have been used to profile the annual climatic patterns of the Doris North site (Golder 2009).

The mean annual temperature at the site is -12.4^{o} C. During the winter months, October to May, the daily temperature typically ranges from -50^{o} C to +11^{o} C. In the summer months, June through September the mean daily temperatures ranges between -14^{o} C and +30^{o} C.

The prevailing winds for the region are from west and west-northwest and blow from this direction approximately 20% of the time. South-westerly winds blow less than 2% of the time. Winds from the prevailing wind direction have the greatest wind speeds.

Precipitation on the site occurs as rainfall and snow fall. The mean annual rainfall is 98.7 mm. The mean annual snowfall is 133.8 mm or 80.2 mm snow water equivalent (SWE). The total annual precipitation, water equivalent, is 178.9 mm (Golder 2009). Annual evaporation rate, which occurs during the open water season, is 220 mm. The mean relative humidity is 78% for the project area (Golder 2009). The 1 in 25 year 24 hour precipitation event is reported to be 37.8 mm.

Over 50% of the region's water comes from snow melt. This volume is dependent on the quantity of snow, its distribution, redistribution by wind or man, and sublimation. The rates of sublimation depend primarily on wind, or the redistribution of snow and the relative humidity.

2.2 Permafrost

The Doris North Mine Area and the overall Project are underlain by continuous permafrost. The estimated permafrost depth is approximately 500 m. Taliks (permafrost free zones) exist under large lakes. The upper most 0.5 m to 1.0 m of permafrost thaws during the summer and is called the active layer.

2.3 Hydrology

The Doris North Mine Area is a sub-basin of the Doris Lake drainage basin (Figure 1). The catchment naturally drains south towards Doris Lake.

Flows in this sub-basin are consistent with all drainage basins within the Project area with peak flows occurring during freshet. Based on mean annual precipitation rates and no losses by infiltration, ice entrainment, evapotranspiration and sublimation (i.e. a runoff coefficient of 1), the annual runoff volume from this basin would be approximately 64,000 m^3.

In this Plan, the portion of the sub-basin upgradient of the pads on which mine and mine support infrastructure are constructed is referred to as the Divertible Area (Area 1 on Figure 1) and the downgradient mine and mine support pads are termed the Mine Area (Areas 2 and 3 on Figure 1). Runoff and underflow from a portion of the Doris North Mine Area sub-basin can be diverted away from the mine and mine support infrastructure by constructing a diversion berm. Runoff and underflow downgradient of the Diversion Berm will come in contact with HBML construction, exploration and/or mining related facilities. Using the average annual precipitation and assuming no losses from infiltration, ice entrainment, evapotranspiration and sublimation (i.e. a runoff coefficient of 1), the maximum average annual runoff volumes from Divertible Area and Mine Area are approximately 26,000 m^3 and 38,000 m^3, respectively.

2.4 Hydrogeology

Groundwater occurs below the permafrost, in taliks below large lakes and in the active layer (the upper most 0.5 m to 1.0 m) of the tundra during the summer months. The permafrost is essentially impervious and limits groundwater recharge. Seasonal groundwater flow in the active layer of the tundra above the permafrost and within the rock pads on which infrastructure is constructed is called underflow in the Plan. Underflow is expressed as surface seeps in areas where the active layer thins or as groundwater discharge to seasonal streams.

2.5 Facilities

Mine and mine support facilities are built on pads below the Diversion Berm. These facilities are listed in Table 1 and are shown on Figure 2. Additional new facilities may be constructed in 2012, but these would not change the Plan.

The area below the Diversion Berm where these facilities are constructed can be divided further into two parts based on the type of material the runoff will encounter. Figure 1 shows these two areas downgradient of the Diversion Berm. The grading of individual camp pads was designed such that surface runoff from the pads is directed to and eventually can flow to either the Sedimentation Pond or the Pollution Control Pond.

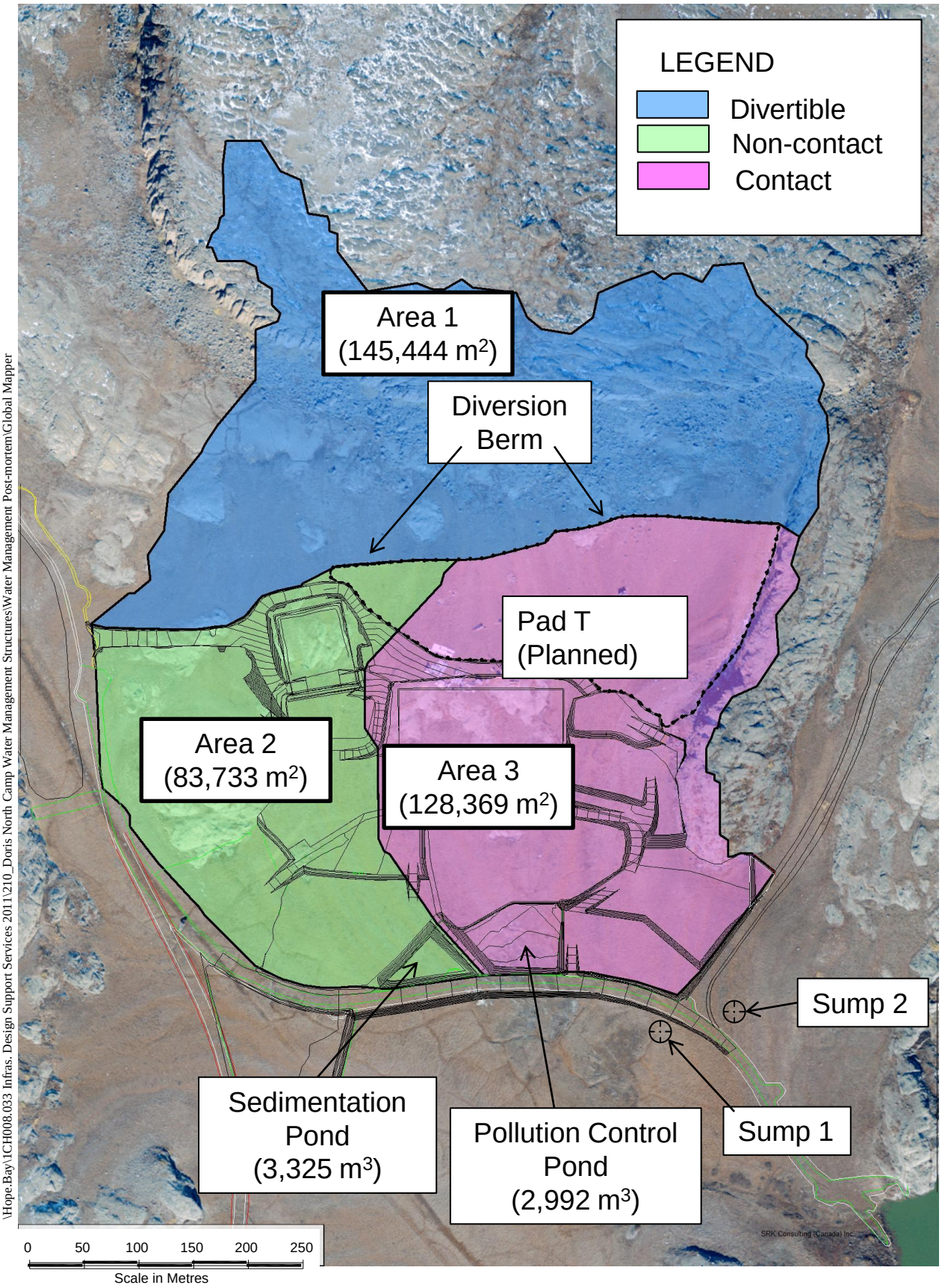
Runoff and underflow from the eastern portion of the area below the Diversion Berm (Area 3 on Figure 1) is contact water as it may be affected by the waste rock or the brine mixing area for the underground mining operation.

Runoff and underflow from the western portion of the area below the diversion berm (Area 2 on Figure 1) is non-contact water.

Table 1: Facilities within the Mine Area

Facilities in Area 2 (non-contact water)	Facilities in Area 3 (contact water)
Doris North Tank Farm (Pad R)	Doris North Tank Farm (Pad R)
Lay Down Area (Pad B)	Mill Terrace (Pad D)
Administrative Buildings/Dry (Pad C)	Ore Storage Pad (Pads Q, H/J)
Warehouse/Laydown Area (Pad Y)	Waste Rock Storage (Pad I)
Lay Down Area (Pad E/P)	Waste Rock Storage (Pad F/G)
Main Camp (Pad X)	Pad T (to be constructed in 2012)

Pad R (Fuel Storage Area) is enclosed by a containment berm. Water contained within this berm can be directed depending on its quality to either Area 2 or Area 3. If the water is impacted by hydrocarbons, then the water will first be treated using an oil water separator.



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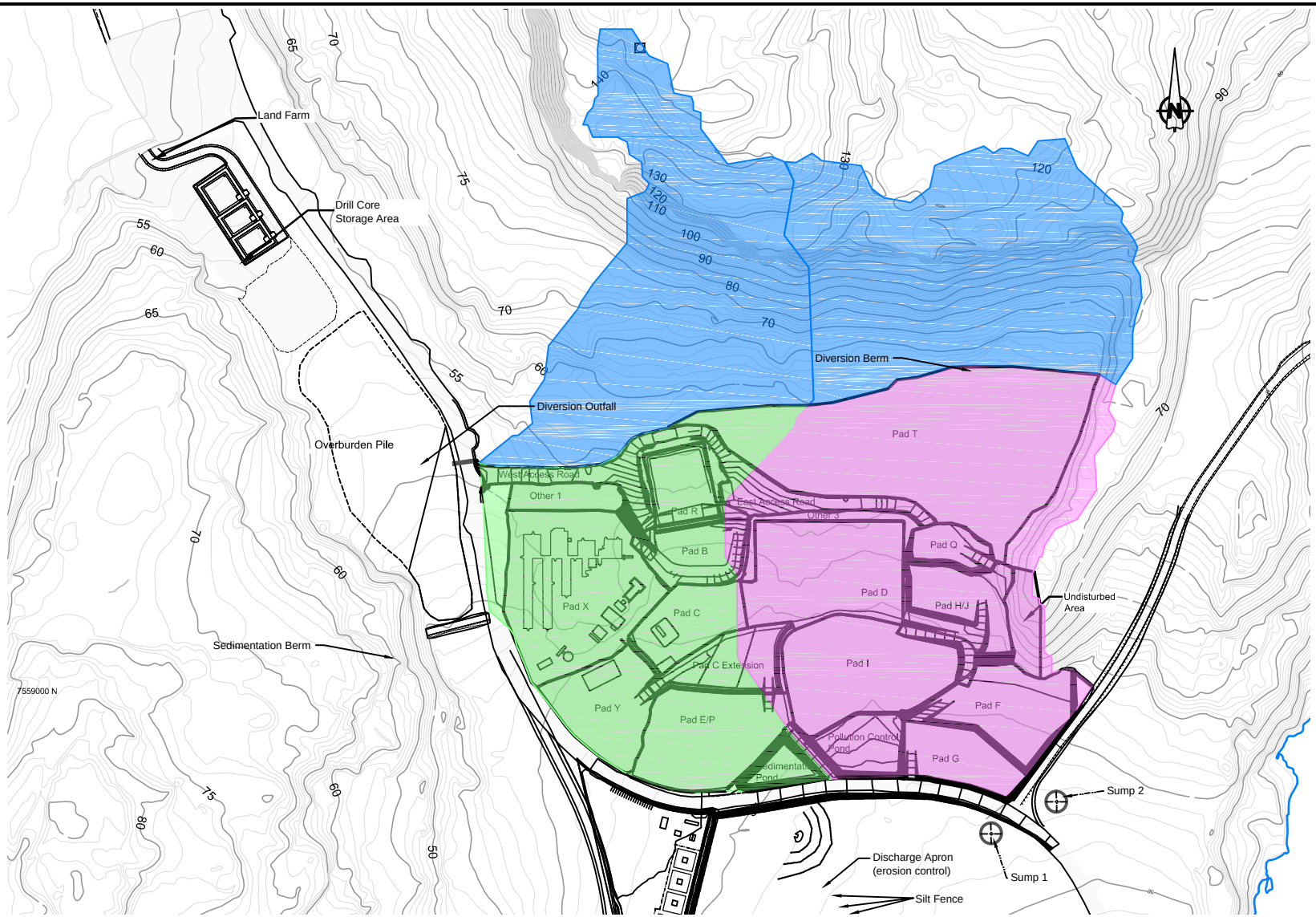

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3 Water Management

3.1 Operational Water Management Plan

The Water Management Plan presented in the 2007 Water Licence application by MHBL used the Tail Lake TIA as the ultimate location to discharge impacted water during operations. This plan included a Sedimentation Pond to capture precipitation and snowmelt in the form of runoff and underflow from the non-contact portion of the Mine Area (Area 2), and a Pollution Control Pond to capture precipitation and snowmelt in the form of runoff and underflow from the mill area, ore stockpile and temporary waste rock pile (Area 3). According to the 2007 Water Management Plan, water collected in the Pollution Control Pond will to be pumped to the Tail Lake TIA during operations. The water reporting to the Sedimentation Pond will be sampled and if the analytical results met the effluent quality limits outlined in Part G, 21 (a) of the Water Licence provided in Table 2, the water will be discharged on land immediately south of the pond approximately 500 m from Doris Lake.

Table 2: Effluent Discharge Limits as Per Part G, 21 (a) of the Licence

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)
pH	6.0-9.0	9
Total Suspended Solids	15	30
Total Ammonia –N	2	4
Total CN	1	2
Total Oil and Grease	5 and no visible sheen	10 and no visible sheen on pond
Total Aluminum – T-Al	1	2
Total Arsenic – T-As	0.05	0.1
Total Copper – T-Cu	0.02	0.3
Total Iron – T-Fe	0.3	0.6
Total Lead – T-Pb	0.01	0.02
Total Nickel – T-Ni	0.05	0.1
Total Zinc – T-Zn	0.01	0.02

During the 2011 open water season, the site operated under the previous Interim Water Management Plan (SRK 2011).

3.2 Interim Water Management Strategy

The current water management strategy is to either convey intercepted runoff and underflow to Tail Lake or use the existing water treatment system and a series of new ponds to only discharge compliant water. Water will be managed as described in this plan until the site is in production and tailings are discharged to the Tail Lake TIA. During this interim period, discharging intercepted water directly to Tail Lake is the preferred water management alternative.

The potential impact on Tail Lake water quality was evaluated and confirms there are will be no significant effects. The site water balance and quality model was used to predict water quality in Tail

Lake if runoff and underflow from the Mine Area was discharged to Tail Lake. The results showed that discharging intercepted runoff and underflow from the Mine Area to Tail Lake had no significant effect on water quality in Tail Lake. Concentrations of all constituents were below Item 26 of the Licence. Similarly the water quality in Doris Creek was predicted if Tail Lake water were then discharged to Doris Creek. The predicted concentrations in Doris Creek were lower than Item 28 of the Licence. Water quality predictions indicate that the discharge of Mine Area runoff and underflow to Tail Lake and the subsequent discharge of Tail Lake to Doris Creek will not exceed the water quality criteria in the Licence.

In accordance with this Plan, the water quality of the Tail Lake discharge and Doris Creek will only be monitored when water is discharged from Tail Lake.

3.3 Interim Plan

There are two water management alternatives for the open water season during the pre-production period. Both alternatives were designed to manage water for the design hydrologic conditions. There are water management components common to each alternative. The design basis, common components and the alternatives are described in the sections below.

3.3.1 Design Basis

Precipitation or snowmelt on the rockfill pads is the source of runoff and underflow.

For the purposes of designing this water management plan, we have assumed that 80% of the snow is removed from the Mine Area as part of normal operations. This snow will be stockpiled near the Overburden Stockpile upgradient of the sedimentation berm outside of the Mine Area.

The Plan (facilities and mode of operation) was designed to manage site runoff and underflow for the 1:20 wet year, during which a 1 in 25 year, 24 hour storm occurs during the month with the highest base flow. The maximum runoff volume (i.e. a runoff coefficient of 1) for this storm from Area 2 (84,000 m^2) and Area 3 (128,000 m^2) are 3,200 m^3 and 4,900 m^3, respectively. These are conservative estimates of the runoff volume. The actual volume of runoff would be lower (i.e. runoff coefficient less than 1).

The rockfill pads are relatively permeable and sheet flow over the rockfill has not been observed. Some portion of incident precipitation likely infiltrates into the rockfill pads and then migrates as underflow to the collection point of the mine area watershed. Even during the largest precipitation event in 2011 (July 1 – 17.3 mm) sheet flow over the pads was not observed; however, increased seepage of underflow into the Pollution Control Pond was observed. This indicates that flows intercepted by the Pollution Control Pond and the proposed Sumps will be attenuated because these flows occur primarily as underflow and not surface runoff. In Area 3, surface runoff was observed flowing into the Pollution Control Pond.

In the 2011 open water season, surface water runoff was not observed on the non-contact portion of the site (Area 2). Runoff or underflow did not collect in the Sedimentation Pond. Most of the incident precipitation and snowmelt in Area 2 likely migrated primarily as underflow that deflected eastwardly toward the Pollution Control Pond due to subsurface conditions. Seeps were observed on the south side of the road embankment near the proposed location of Sump 1.

3.3.2 Common Components of Alternatives 1 and 2

The following components are common to both water management alternatives.

Diversion Berm

HBML will construct a diversion berm to separate the Divertible Area from the Mine Area. The purpose of the berm is to divert runoff and underflow from the undisturbed portion of the catchment (approximately 145,000 m^2) to the south west before it contacts the Mine Area. This diversion will reduce the total catchment draining to the Sedimentation and Pollution Control Ponds (i.e. the Mine Area) to 212,000 m^2.

Sedimentation Pond

All facilities constructed on the non-contact side of the Mine Area (Area 2 in Figure 1) are graded to convey surface runoff to the Sedimentation Pond. As mentioned above surface runoff to the Sedimentation Pond was never observed in 2011. At the end of the 2011 open water season, the Sedimentation Pond was fully lined with an impermeable geomembrane liner. Surface runoff, if present, will still flow to the Sedimentation Pond; however, underflow from this portion of the site will bypass the Sedimentation Pond and be captured by the interception sumps. Because the Sedimentation Pond is not expected to intercept any water, it will be used as the Surge Pond in Alternative 1 to provide excess surge capacity for water management during the design event. The Sedimentation Pond has a full storage capacity of 3,325 m^3.

Pollution Control Pond

All facilities constructed on the contact side of the Mine Area (Area 3 in Figure 1) are graded to convey runoff to the Pollution Control Pond. The Pollution Control Pond is partially lined to intercept runoff and underflow from the site. Sheet flow over the crush rock pads during a storm event has not been observed at the site. Seepage into the Pollution Control Pond along the northern perimeter is frequently observed. It is likely that a portion of the incident precipitation would infiltrate into the pads and flow as underflow in the pad or active layer to the Pollution Control Pond. This would attenuate peak runoff during the storm and the volume that is collected by the Pollution Control Pond over the event.

Following the rebuild of the Pollution Control Pond during 2011, the full storage capacity is 2992 m^3. This volume is less than the volume during 2011. The operating strategy for this pond is that pumping capacity (with redundancy) capable of conveying peak flows to the pond will be installed. Intercepted water will be transferred to the Surge Pond (Sedimentation Pond).

Underflow Interception Sumps

Two shallow underflow interception sumps (Sump 1 and Sump 2) will be constructed. These sumps will be constructed on the southeast corner of the Mine Area south and north of the Float Plane Access Road. The sump locations were sited based on the presence of seeps in this area which suggests that it is an area of groundwater discharge from the active layer. The sumps will consist of a 3 m diameter insulated corrugated metal pipe approximately 2.5 m tall. The pipe will be perforated and will have larger slots that extend above the ground surface to intercept surface flow. The pipe will be driven to a depth at least 1 m below the active layer. A float activated sump pump will be used to pump water from the sump. Intercepted underflow will be pumped to the Surge Pond.

Surge Pond

A lined Surge Pond may be constructed (Alternative 2) or the Sedimentation Pond may be used as a Surge Pond (Alternative 1). The purpose of this pond is to hold water from a variety of sources prior to discharge to Tail Lake or treatment. For water management Alternative 1 the Sedimentation Pond will serve as the Surge Pond. The Surge Pond will routinely receive flow from:

- the Sedimentation Pond (under Alternative 2);
- the Pollution Control Pond; and
- the underflow interception sumps.

The Surge Pond may periodically, if warranted, receive water from:

- Landfarm Ponds;
- Quarry 1 Tank Farm;
- Vent Raise Tank Farm;
- Doris North Tank Farm (Pad R);
- Temporary Wash Bay (to be constructed in 2012);
- Roberts Bay Tank Farm (RBTF);
- Other small secondary containment facilities on site; and
- Excess mine water (if encountered or produced).

Water from these locations will first be treated at the source, if necessary, by a mobile oil water separator. Compliant water will then be discharged according to the Licence. If the water is non-compliant with other requirements of the Licence, it will then be discharged to the Surge Pond.

Sewage and grey water will continue to be treated, discharged and monitored in accordance with the Sewage Management Plan.

3.3.3 Alternative 1 Description and Components:

Description

The following is a synopsis of water management Alternative 1:

- Site runoff and underflow will be intercepted by the Sedimentation Pond, Pollution Control Pond and Underflow Interception Sumps;
- Intercepted water will be pumped to the Sedimentation Pond which will serve as the Surge Pond of the system;
- Water will be pumped from the Surge Pond to Tail Lake as per Part G 20 of the Licence;
- Water will be discharged from Tail Lake to Doris Creek such that the water elevation does not exceed 28.5 m above sea level (masl) as per Part G 29 of the Licence;
- The discharge rate from Tail Lake to Doris Creek does not increase the flow in Doris Creek more than 10% above baseline conditions; and
- The water is compliant with Part G 21, 26, 27 and 28 of the Licence.

Specific Components

A pumping system and pipeline will be constructed to convey water from the Surge Pond to Tail Lake. Pumping capacity at each location (Pollution Control Pond, the Surge Pond, and Tail Lake) of discharge will be sized to convey the maximum flows for the design event. Redundant pumping capacity will standby at each location in the event of an upset. The pipeline to convey water from the site to Tail Lake will also be redundant. A pumping system and pipeline will be constructed to discharge Tail Lake water to Doris Creek.

3.3.4 Alternative 2

Description

The following is a synopsis of water management Alternative 2:

- Site runoff and underflow will be intercepted by the Sedimentation Pond, Pollution Control Pond and Underflow Interception Sumps;
- Intercepted water will be pumped to the Surge Pond;
- Water in the Surge Pond will be treated by solids filtration, granular activated carbon filtration and RO;
- RO permeate will be discharged into Clean Holding Ponds;
- RO reject will be discharged to Brine Pond;
- Once quality is verified and discharge approved, treated water from the Clean Holding Ponds will discharged to the tundra; and
- If the quality of water in the Clean Holding Ponds does not meet criteria, the water can either be returned to the Surge Pond for retreatment or be temporarily stored in Contingency Bladders if there is not sufficient capacity in the Surge Pond. When Surge Pond capacity becomes available, the Storage Bladders will be emptied to the Surge Pond and the water retreated.

Schematics of the water management system for Alternatives 1 and 2 are shown in Figures 3 and 4, respectively. The design basis and elements of each alternative are described below.

RO Treatment System

An RO water treatment system will treat water stored in the Surge Pond. The RO treatment system includes pre-treatment to filter suspended solids and adsorb hydrocarbons (granular activated carbon filters). The nominal flow rate of the RO treatment system is 100 US gallons per minute, and the maximum flow is 125 US gallons per minute.

The RO treatment system produces two streams: permeate and reject (brine). The permeate stream will be about 70% to 75% of the influent flow rate, will have very low dissolved concentrations and will be discharged to one of the Clean Holding Ponds. The reject stream will be the remainder of the influent flow, will have relatively high dissolved concentrations, and will be discharged to the Brine Pond.

Clean Holding Ponds

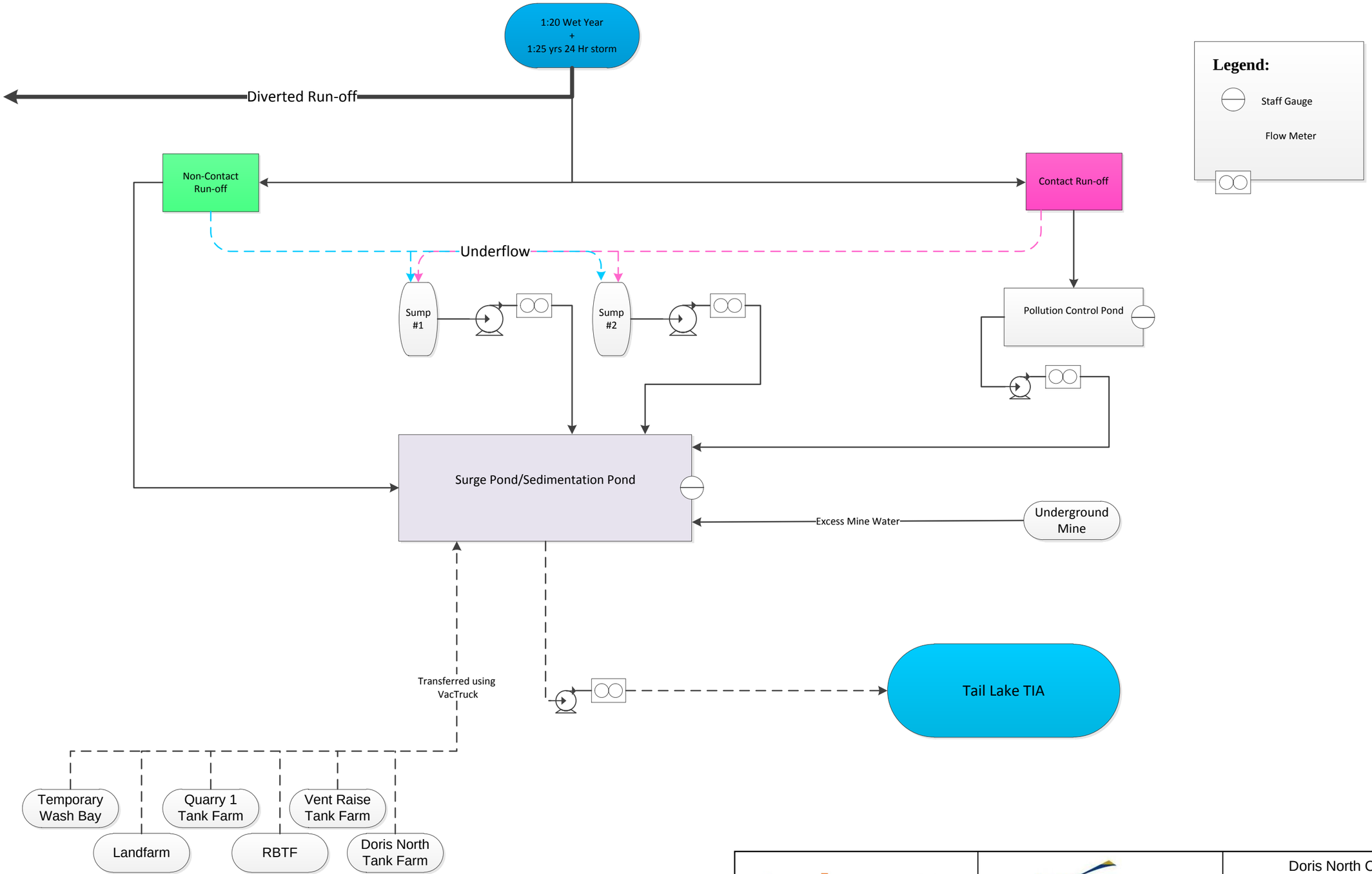
Two Clean Holding Ponds will be constructed, each with at least a full storage capacity of 6,000 m^3. These ponds will be lined and receive permeate from the RO treatment system. The purpose of these ponds is provide capacity to permit a sample of treated water to be tested, the results obtained and submitted to the appropriate regulatory authority for their approval to discharge the water. Permeate will be discharged to a Clean Holding Pond until it is filled. When the first Clean Holding Pond is filled permeate will then be discharged to the second Clean Holding Pond. It is estimated that it will take 5 days to receive the water quality results. The water quality results will then be submitted to the regulatory authority. The regulatory authority then has 10 days to make a decision on whether or not to permit the treated water to be discharged per the conditions in the Licence. After approval is granted the full Clean Holding Pond will be emptied over 10 days. The treated water will be discharged to the tundra. The discharge location will be periodically rotated to prevent erosion of the tundra. If the quality does not meet discharge criteria, the water will either be returned to the Surge Pond or pumped to the Contingency Bladders.

Brine Pond

RO reject will be pumped to the Brine Pond. The Brine Pond will be a lined storage pond with a full storage capacity of at least 13,000 m^3. The purpose of the Brine Pond is to contain RO reject until it can be discharged to Tail Lake, the ocean or completed underground workings at closure. The Brine Pond is sized to contain one year of brine according to the design basis (i.e. 1:20 wet year during which a 1:25 year, 24 hour storm occurs). Makeup water for underground mining will be drawn from the Brine Pond. During each subsequent year following 2012, additional Brine Pond capacity will be constructed during the winter in anticipation of managing water during the following year.

Contingency Bladders

Contingency Bladders will be used to provide at least 1,500 m^3 of storage capacity in the event that water in the Cleaning Holding Ponds does not meet discharge criteria and must be retreated. Water from the bladders will be transferred to the Surge Pond for retreatment as quickly as hydrologic conditions permit.



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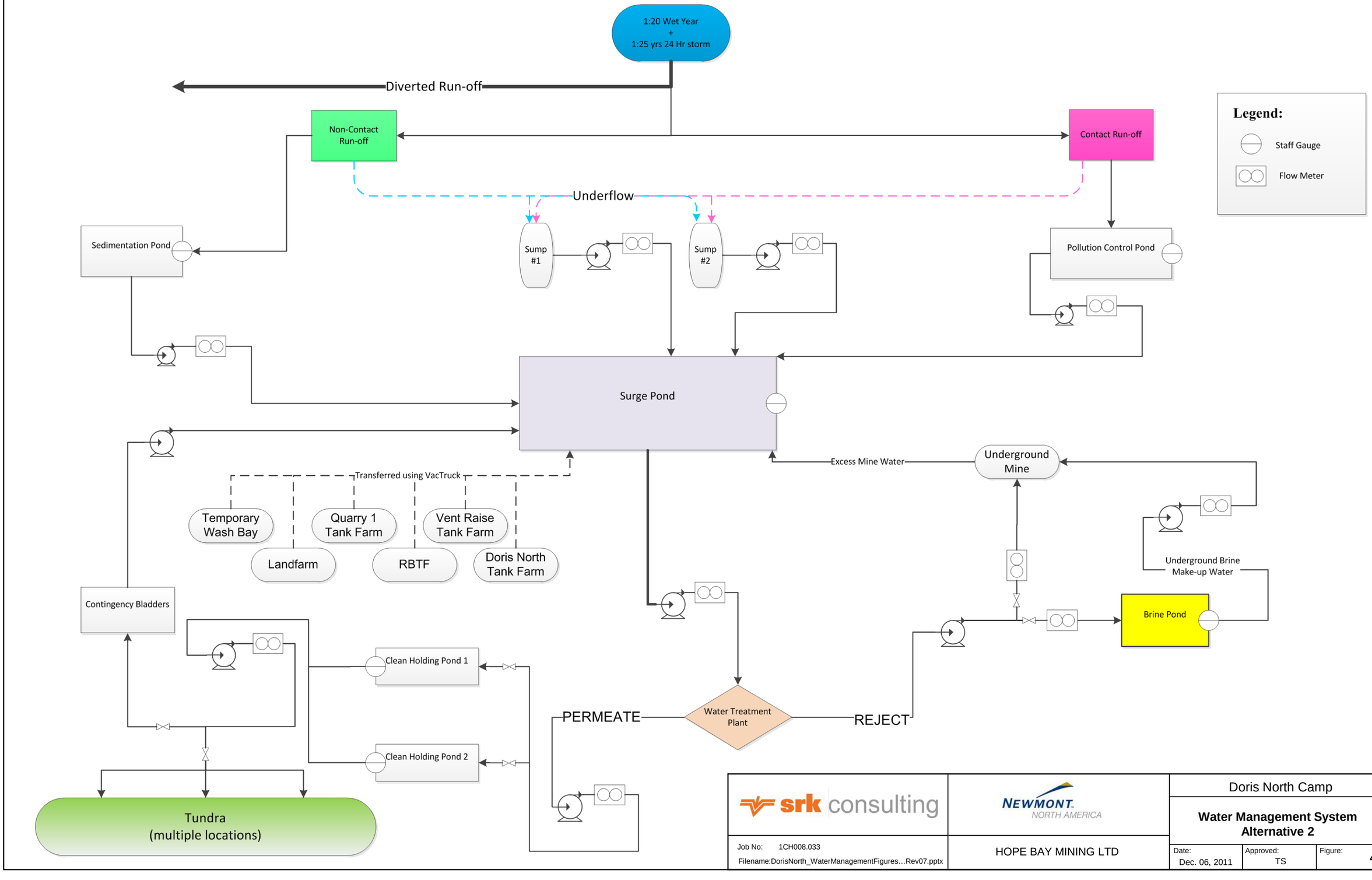

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NEWMONT NORTH AMERICA

HOPE BAY MINING LTD

Doris North Camp

Water Management System Alternative 2

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3.4 Implementation

The water management system described above will be constructed prior to the 2012 freshet. Existing water management components are the RO treatment system, Sedimentation Pond and Pollution Control Pond. The following water management system components will be procured and/or constructed prior to the 2012 freshet for the preferred water management alternative (Alternative 1):

- Diversion Berm;
- Two Underflow Interception Sumps;
- Pumping capacity with redundancy to meet conveyance needs for the design event and redundant pipelines to Tail Lake;
- Pumps, flowmeters and staff gauges as noted in Figure 3; and
- Pumping capacity, pipeline and flowmeters to discharge Tail Lake water to Doris Creek.

The following water management system components will be procured and/or constructed prior to the 2012 freshet if water management Alternative 2 is selected:

- Diversion Berm;
- Two Underflow Interception Sumps;
- Surge Pond;
- Two Clean Holding Ponds;
- Brine Pond;
- Contingency Bladders;
- Pumps, flowmeters and staff gauges as noted in Figure 4; and
- Pipe to connect the components.

4 Quality Management and Reporting

4.1 Inspections

Daily visual inspections of all pads and diversion channels located throughout the Doris North Mine Area will be completed by operations staff. These inspections will look for the following types of issues:

- Drainage channels have not been inadvertently blocked or re-routed in a manner that could alter the intended routing of the clean runoff to the Sedimentation Pond and the potentially contaminated water to the Pollution Control Pond;
- Signs of erosion, occurring during high flow periods;
- Integrity of silt curtains and erosion protection at point of discharge to the tundra;
- Daily inspection of the Diversion Berm – check for structural integrity, blockages and ponding;

- Daily inspection of each pond in the system confirming structural integrity and water levels;
- Daily inspection of all pumps and pipeline checking for leaks, operation of flowmeters etc.;
- Daily inspection of all sumps checking for leaks, operation of flowmeters etc.;
- Daily inspection of discharge to tundra checking for erosion, ponding etc.
- Daily inspection of water treatment plant to ensure it is within operating limits, checking for leaks, filter status etc.; and
- Any irregularities identified during the visual inspections will be recorded on inspection sheets and immediately relayed to the General Manager of Operations and/or the Engineering, Procurement and Construction (EPC) Manager in order to ensure immediate corrective action can be implemented.

Daily inspection sheets must be retained for presentation to inspectors and Environment and Social Responsibility (ESR) upon request. A weekly inspection of all upstream diversion berms will be conducted to ensure the integrity of these structures.

4.2 Monitoring

Continuous monitoring of Doris Lake water levels and outflows will continue under the hydrologic baseline characterization. These data will be used to calibrate the existing water balance and quality model.

All ponds will be constructed with permanent staff gauges to allow for visual monitoring of incoming flows to each pond. Daily volumes will be recorded in a water management operations log sheets. The log sheets will be maintained by the site operations staff.

Instantaneous flow and total volume will be monitored on all transfer pumps shown in Figure 2. These will be recorded in the water management operations log sheets.

In accordance with the Licence requirements the water quality of any water discharged from the Mine Area be tested for compliance with the Effluent Discharge Limits. Confirmation of compliance will be required prior to discharging any water from the facility.

Sampling of the following locations will only occur if water management Alternative 1 is implemented and water is being discharged to and from Tail Lake. Water quality and flow will be monitored in the outflow from the withdrawal point in Tail Lake (TL-1) and at the end of the discharge pipe from Tail Lake to Doris Creek (TL-4). This sampling will continue until sufficient data has been collected to demonstrate that the water quality is the same and only one of the sampling points need be sampled. Doris Creek upstream (TL-2) and downstream of the Tail Lake discharge location (TL-3) will also be monitored.

Water quality in the Pollution Control Pond (ST-2) will be monitored in accordance with the Water Licence (once monthly during the open water season).

If water management Alternative 2 is selected, then the treated water quality will be monitored daily.

The ESR staff will conduct monitoring, under the ultimate accountability of the HBML General Manager of Operations.

All sampling procedures and QA/QC activities are described in the Quality Assurance and Quality Control Plan (HBML 2011).

4.3 Reporting

As per the requirement specified in Item 8, Part D of the Licence, a Construction Monitoring Report will be prepared and submitted no later than March 31 of the year following construction. That report will include responses to the commitments made in the *Water Licence Application Monitoring and Follow Up Plan, July 2007* (MHBL, 2007) and all requirements specified in the Licence.

The Construction Monitoring report will document the construction of new components of the water management system. The report will include but not necessarily be limited to the following:

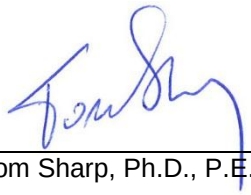
- A summary of all inspections conducted during construction;
- Updated “As-built” drawings of the constructed infrastructure; and
- All inspection and monitoring data compiled will be documented and incorporated into the existing monthly and annual monitoring reports submitted to the Board.

Monthly water quality monitoring reports will be prepared. These reports will include but not be limited to:

- A water quality data summary;
- A summary of flow and stage monitoring in the water management system;
- An assessment of data to identify areas of non-compliance with regulated discharge parameters referred to in Part G;
- A summary of monthly operational assessments of the water balance;
- Water quality model including model calibration; and
- A water balance of all water transfer within the water management system.

The "**Doris North Project - Interim Water Management Plan**", has been prepared by SRK (Consulting) Canada Inc.

Prepared by



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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

Disclaimer

"This report and the opinions and conclusions contained herein ("Report") contains the expression of the professional opinion of SRK Consulting (Canada) Inc. ("SRK") as to the matters set out herein, subject to the terms and conditions of the agreement dated [HBML.BOC-CM.PSA.003] (the "Agreement") between Consultant and Hope Bay Mining Ltd. ("Hope Bay Mining"), the methodology, procedures and sampling techniques used, SRK's assumptions, and the circumstances and constraints under which Services under the Agreement were performed by SRK. This Report is written solely for the purpose stated in the Agreement, and for the sole and exclusive benefit of Hope Bay Mining, whose remedies are limited to those set out in the Agreement. This Report is meant to be read as a whole, and sections or parts thereof should thus not be read or relied upon out of context. In addition, this report is based in part on information not within the control of SRK. Accordingly, use of such report shall be at the user's sole risk. Such use by users other than Hope Bay Mining and its corporate affiliates shall constitute a release and agreement to defend and indemnify SRK from and against any liability (including but not limited to liability for special, indirect or consequential damages) in connection with such use. Such release from and indemnification against liability shall apply in contract, tort (including negligence of SRK whether active, passive, joint or concurrent), strict liability, or other theory of legal liability; provided, however, such release, limitation and indemnity provisions shall be effective to, and only to, the maximum extent, scope or amount allowable by law."

5 References

Golder, 2009. Doris Project Area 2008 Hydrology Baseline Update – Draft Report, December 2009.

HBML, 2011. Quality Assurance and Quality Control Plan, Revision 6, June 2011

MHBL, 2007. Revised Water Licence Application Support Document. April 2007.

MHBL, 2007. Water Licence Application Monitoring and Follow Up Plan. June 2007.

SRK Consulting, 2011. Hope Bay Interim Water Management Plan (revised), August 2011.

Appendix A: Table of Concordance

Concordance Table

Location in Licence	Licence Condition	Document Reference
Part D – 5 (page 5)	The Licencee shall undertake appropriate corrective measures to mitigate impacts on surface drainage resulting from the Licencee's operation.	Sections 3.3.1 through 3.3.4
Part D – 18 (page 6)	The Licencee shall conduct daily visual inspections for all construction activity during spring freshet & during & after remarkable rainfall events with sampling of runoff/seepage where turbidity is evident.	Sections 4.1 and 4.2
Part D – 19 (page 6)	All surface runoff during the construction of any facilities, where flow may directly or indirectly enter a water body, shall meet the following effluent quality limits.	Section 3.1
Part D – 25 (page 7)	The Licencee shall ensure that all containment & runoff control structures are constructed & maintained to prevent escape of wastes to the surface or groundwater systems.	Sections 3.3.1 through 3.3.4
Part F – 1 (page 9)	The Licencee shall submit to the Board for review by May 1, 2008, a revised Water Management Plan.	This Interim Water Management Plan fulfills this condition until tailings are discharged to the TIA.
a	A requirement to continuously monitor Doris Lake levels and outflow during the two (2) years of mining and beyond to confirm water balance model predictions;	Section 4.2
b	Requirements for on-going monitoring and calibration of the water quality model;	Section 4.2
c	A strategy to monitor and remove where necessary snow accumulation in the Pollution Control Pond, roads, ditches, and drainage channels;	Section 4.2
d	The Plan shall consider the monitoring requirements set out in Parts J and K;	Sections 4.1 and 4.2
Part F – 4 (page 9)	The Licencee shall carry out regular inspections of all water management structures during periods of flow (rock drains, culverts, sedimentation and pollution control ponds and associated diversion berms) and the records be kept for review upon request of an Inspector. More frequent inspections may be required at the request of an Inspector.	Sections 4.1 and 4.2
Part G – 2 (page 9)	The Licencee shall ensure that all land applied discharges are performed in a manner that prevents erosion at the point of discharge and downstream.	Section 4.1
Part G – 21 (page 12)	The Licencee shall operate and maintain the Sedimentation Pond in accordance with the following	
a	Water discharged from the Sedimentation Pond at monitoring station ST-1 shall not exceed the following effluent quality limits	Section 3.1
b	The Licencee shall establish compliance with effluent quality limits prior to discharge;	Sections 3.2 and 3.3.4
c	Water from the Sedimentation Pond that is acceptable for discharge under Part G, Item 21(a) shall be discharged immediately south of the facility approximately 500m upstream of Doris Lake, or as designated by an Inspector; and	Sections 3.3.1, 3.3.2, and 3.3.4

Location in Licence	Licence Condition	Document Reference
d	Sedimentation Pond Water that does not meet criteria in Part G, Item 21(a) shall be directed to the Tailings Impoundment Area.	Section 3.3
Part J – 1 (page 18)	The Licencee shall install and maintain flow meters or other such devices, or implement suitable methods required for the measuring of water use and Effluent discharge volumes, to be operated and maintained to the satisfaction of an Inspector.	Sections 4.1 and 4.2
Part J – 18 (page 21)	The Licencee shall ensure that a geotechnical inspection is carried out annually between July and September by a Geotechnical Engineer. The inspection shall be conducted in accordance with the *Canadian Dam Safety Guidelines* where applicable and take into account all major earthworks, including the following:	
j	Sedimentation Pond;	Sections 4.1 to 4.3
k	Pollution Control Pond;	Sections 4.1 to 4.3
Part J – 20 (page 21)	The Licencee shall visually monitor and record observations on a daily basis during periods of discharge, all discharge onto the tundra from the:	
b	Sedimentation Pond;	Sections 4.1 to 4.3
Part J – 21 (page 21)	The Licencee shall, within thirty (30) days following the month being reported, submit to the Board a monthly monitoring report in an electronic and hardcopy.	Section 4.3
Part K – 1 (page 22)	The Licencee shall submit to an Analyst for approval by March 1, 2008, a Quality Assurance/ Quality Control Plan that includes field and laboratory procedures and requirements. This Plan shall be developed in accordance with the *1996 Quality Assurance (QA) and Quality Control (QC) Guidelines for Use by Class "A" (INAC)*.	Section 4.2