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Draft

Mining and Milling Undertaking Supplemental Information Guideline (SIG) for Mine Development (MM3)

Date of Issuance: December 15, 2008

1.0 Introduction

Supplemental information is required as part of the water licence application in accordance with section 48(2) of the *Nunavut Waters Nunavut Surface Rights Tribunal Act* (NWNSRTA or Act) which states:

> *"An application, except in relation to a cancellation, shall be accompanied by the information and studies concerning the use of waters or the deposit of waste that are required for the Board to evaluate the qualitative and quantitative effects of the use or the deposit on waters."*

To provide further guidance for these requirements, the NWB has developed this Technical Guide containing Supplemental Information Guidelines (SIG or Guidelines) for specific classifications of undertakings taking into consideration the requirements of sections 48 (2) and (3) of the Act and section 6 (2) of the *Northwest Territories Water Regulations* (NTWR or Regulations).

These Guidelines are issued to proponents seeking a Type A licence for water use, waste disposal, works and associated activities for an undertaking classified as Mining and Milling in accordance with the Regulations. Further to these Guidelines, the Applicant is referred to the NWB's Draft *Guide 4 - Completing and Submitting a Water Licence Application for a New Licence*. The NWB's draft Guides will be made available to the Applicant in mid January 2009.

On the filing of an application, the Board may provide guidelines to the applicant respecting the information to be provided by the applicant in respect of any matter that the Board considered relevant including the following:

a) The description of the use of waters, deposit of waste or appurtenant undertaking;

b) Confirmation that the Nunavut Planning Commission's (NPC) requirements under the Nunavut Land Claims Agreement (NLCA) regarding land use plan conformity (Article 11 of the NLCA) have been addressed;

c) Confirmation that the Nunavut Impact Review Board's (NIRB) requirements under the Nunavut Land Claims Agreement (NLCA) regarding development impact assessment (Article 12 of the NLCA) have been addressed;

d) The qualitative and quantitative effects of the use of waters or the deposit of waste on the drainage basin where the use is to be undertaken or the deposit is to be made, and the anticipated impact of the use or deposit on other users;

e) The measures the applicant proposes to take to avoid or mitigate any adverse impact of the use of waters or the deposit of waste;

f) The measures the applicant proposes to take to compensate persons, including the Designated Inuit Organization (DIO), who are adversely affected by the use of waters, or the deposit of waste;

g) The program the applicant proposes to undertake to monitor the impact of the use of waters or the deposit of waste;

h) The interests in and rights to lands and waters that the applicant has obtained or seeks to obtain;

i) The options available for the use of waters or the deposit of waste;

j) Abandonment and Restoration;

k) Financial Responsibility; and

l) Specific Undertaking Information Requirements.

Each of the above points is considered in subsequent worksheets.

Submission of the information required by this SIG does not relieve the Applicant from confirming and following up on other information requirements which may be required during the regulatory process.

If the NWB determines that the application is materially incomplete, meaning that items included in Section 2: Minimum Application Requirements are missing, the applicant will be informed by the NWB that their application has been rejected. In other cases, NWB staff will correspond with the applicant to resolve deficiencies before proceeding.

The NWB cannot issue, amend, or renew a licence where there is an applicable, approved land use plan unless the NPC's requirements under the NLCA have been addressed regarding land use planning (Article 11). In addition, the NWB cannot issue, amend, or renew a licence where the appurtenant undertaking requires screening by NIRB in accordance with Part 4 of Article 12 of the NLCA until NIRB has completed its screening. Furthermore, notwithstanding sections 13.5.5 or 12.10.2 of the NLCA, where the appurtenant undertaking requires a review under Part 5 or Part 6 of Article 12 of the NLCA, the Board may not issue, amend, or renew a licence until NIRB has issued a project certificate.

The Board expects that following completion of development impact requirements in accordance with Article 12 of the NLCA, additional Project Specific Information Requirements (PSIRs) will be issued to the Applicant as outlines in section 6.0 of this SIG.

The Applicant is referred to Appendix A of these Guidelines for a list of additional documents, guidelines, legislation and standards that may be of use to the Applicant in preparing the information to address this SIG.

2.0 Minimum Application Requirements (Application Checklist)

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment
Minimum Application Requirements	1	General Water Licence Application Form (see the NWB's draft *Guide 4: Completing and Submitting a Water Licence Application for a New Licence*) or Application for Water Licence Amendment Form, if appropriate (see NWB's draft *Guide 7: Licensee Requirements Following the Issuance of a Water Licence*)					
	2	Information requirement of SIG for Mine Development MM3 including plans, reports and designs					
	3	Executive Summary in English					
	4	Translated Executive Summary in appropriate language and dialect					
	5	Application Fee					
	6	A table indicating concordance of the application and supporting documents to the Guidelines. These generic Guidelines are provided in excel as a tool for Applicants to provide the necessary concordance table.					
	7	Water Use Fee					

Qualifications:

1 Applications that do not include all of the items listed above will be returned to the applicant as incomplete with a request for the deficient information.

2 The application must address the entire scope of the project including not only the primary undertaking, but also related activities for all phases of the project.

3 Information between all documents that make up the application package must be consistent and must be accurately cross referenced.

4 The application must distinguish between recommendations or options and actual commitments to chosen alternatives.

5 For additional guidance regarding the submission of electronic documentation, the NWB refers the Applicant to Draft *Guide 6 - Electronic Documentation: Submissions and*

6 The Applicant, where practical, may combine components of the information requested in the SIG into more concise plans to provide clarity and eliminate duplication. If this practice is considered, then the Applicant shall clearly outline, through proper referencing and clearly detailed statements, how the NWB shall consider the documents that have combined elements of information. Information management is the responsibility of the Applicant.

7 The Applicant shall submit a concise executive summary of the application package. In addition, the Applicant shall submit an executive summary for each separate supporting document, report or study. All executive summaries shall be provided in English, Inuktitut and/or Inuinnaqtun (where applicable).

The Applicant shall complete the orange sections of the worksheet(s). Blue sections are for NWB use only.

3.0 General Water Licence Application - Project Description

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
Applicant	**1**	Provide contact information (see General Water Licence Application Form)						
Applicant Representative	**2**	Provide the name and contact information of any party submitting the application on behalf of the applicant						
	3	Provide a signed letter authorizing a party to be its representative in the licensing process						
Location of Undertaking	**4**	Provide coordinates of the project extents taking into account the local and regional impact area(s)						
	a	Provide location by Latitude and Longitude						
	b	Provide location by UTM coordinates, if available						
NPC Determination	**5**	Provide written confirmation from the NPC confirming that NPC's requirements under the NLCA regarding land use plan conformity (Article 11 of the NLCA) have been addressed						
NIRB Determination	**6**	Provide written confirmation from the NIRB confirming that NIRB's requirements under the NLCA regarding development impact assessment (Article 12 of the NLCA) have been or are in the process of being addressed. Documentation may include:						
	a	NIRB's screening determination						
	b	NIRB's recommendation to Minister regarding the type of review						
	c	Minister's written decision regarding the review of the development proposal						
	d	List of activities requested for exception in accordance with NLCA s. 12.10.2						
	e	Type B water application for any activities to be considered for interim, short term approval in accordance with NLCA s. 13.5.5						
Description of Undertaking	**7**	Provide a complete description of the undertaking with detailed site plan(s) of all project infrastructure for the Local Project Area (LPA) and/or the Regional Project Area (RPA) where applicable, including:						
	a	Raw water intake						
	b	Water storage and treatment facilities including distribution systems						
	c	Existing water bodies/courses and any changes to these water bodies/courses that may have or may occur as a result of water use or waste disposal facilities. Outline of the drainage basin within the RPA						
	d	Location of receiving water bodies and drainage pathways						
	e	Transportation access routes and details of water course crossings						
	f	Locations of environmental monitoring sites						
	g	Traditional water use and land use areas impacted by the project						
	h	Sewage treatment facilities (lagoon, wetland)						
	i	Wastewater treatment area and discharge outlet locations						
	j	Solid waste disposal areas and drainage patterns						
	k	Waste rock piles (PAG and non-PAG)						
	l	Stockpiles						

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	m	Tailing containment areas						
	n	Laydown areas						
	o	Hazardous waste disposal area						
	p	Waste discharge distribution lines						
	q	Fuel and chemical storage						
	r	Abandoned and/or restored water treatment, sewage and solid waste disposal facilities						
	8	Provide a Mine Plan Overview including:						
	a	Details on how facilities, structures, and plans will be operated, maintained and implemented						
	b	Instrumentation and monitoring requirements of the proposed designs and plans						
	c	Indication of camp and mine site operation population projections for each phase of the project						
Nature of Interest in the Land	9	Provide the nature of the interest in the land associated with the proposed undertaking, including:						
	a	Sub-surface leases from Nunavut Tunngavik Incorporated (NTI) and/or Indian and Northern Affairs Canada (INAC) as well as surface authorizations from INAC for crown land use, a Designated Inuit Organization (DIO) for Inuit Owned Land (IOL) use, or the Government of Nunavut for Commissioner's land use						
	b	The date or expected date of issuance of any authorization and the date of expiry. Indicate whether the applicant is the name of the entity holding the authorization for the interest in the land and if not, provide the name of the entity holding the authorization						
	10	Provide the name of the entity(s) that hold the interest(s) in the land						
See Section 4.0 of this SIG for Additional Requirements	**Water Use: (including water works)**	**11**	Provide a detailed description of all forms of water consumption. Categorize use(s) as mining/industrial use and/or domestic use.						
	Water Use: Quality and Quantity	**12**	Provide for each type of water use:						
		a	The source of water including the name of the water body and the location of the water source as shown on a map						
		b	A description of the quality of the water from the source as well as the capacity of the water source						
		c	The amount of water taken from each source and the method of extraction including specific pumping rates, pumping procedures and potential for draw down						
		d	The amount of water to be returned to the source						
		e	Methods to ensure the quality of water returned to the source is of an acceptable quality						
ction 5.0 of this SIG for nal Requirements	**Waste Disposal:**	**13**	Provide a detailed description of all forms of waste disposal indicating the type of waste(s) generated and/or to be deposited.						
	Waste Disposal: Quality and Quantity	**14**	Provide a description for each type of waste generated, its composition, quantity (cubic meters per day), method of treatment and disposal, including:						
		a	System for the treatment and/or disposal of solid waste, liquid effluent, and gaseous materials expected from the operations, including any measures proposed to minimize production of wastes						

	Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
See Sec Additio		b	Substances and their amounts that will be released to the environment, methods of release and any associated control technology						
	Other Authorizations	**15**	Provide a list of any authorizations required in addition to the water licence and a description of how those authorizations may affect the NWB's water licensing process						
		16	Provide an indication of whether any other authorizations are required in relation to the project. Provide the name of the authorization, the administering agency, the project activity requiring the authorization, the date or expected date of issuance and the date of expiry						
		17	Provide an overview of and a description of the status of any existing water licences currently held with the NWB and future plans for the administration of existing licences						
		18	Provide formal applications to the Navigable Waters Protection Program (NWPP) for any works						
		19	Provide a timetable for filing the appropriate plans and procedures required by government parties						
See Section 4.0 and 5.0 for Additional Requirements	**Predicted Environmental Impacts and Proposed mitigation measures**	**20**	Provide a description of the environmental and resource impacts including the following:						
		a	Groundwater and Surface Water including:						
			changes in flow						
			quantity and quality						
		b	Land including:						
			geologic structure change						
			soil contamination						
			compaction, settling and erosion						
			alteration of the permafrost regime						
			riparian zone loss						
		c	Vegetation including:						
			species composition and abundance						
			non-native species introduction						
			accumulation of toxins and heavy metals (in relation to remediation objectives for closure)						
		21	Provide a description of all proposed environmental management systems and monitoring programs for all significant impacts						
		22	Provide a description of all mitigation plans and/or programs						
		23	Provide a description of all remediation plans and/or programs						
	Options (Alternatives)	**24**	Provide a brief explanation of the alternative methods or locations that were considered to carry out the project						
	Existing and Other User Water Rights	**25**	Provide the names, addresses, and nature of use for any known persons or properties that may be adversely affected by the proposed undertaking, including those that that hold licences for water use in precedent to the application, domestic users, in-stream users, authorized waste depositors, owners of property, occupiers of property, and/or holders of outfitting concessions, registered trapline holders, and holders of other rights of a similar nature						

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
	26	Indicate whether compensation has been paid and/or agreement(s) for compensation have been reached with any existing or other users						
	27	Provide a description of the applicant's consultation plan and the concerns expressed during consultation						
	28	Provide a description of how the results of consultation were incorporated into baseline studies						
	29	Provide a description of any potential impacts of the project on other licensees or pre-existing applicants, domestic users, in-stream users, authorized waste depositors, owners of property, occupiers of property, and/or holders of outfitting concessions, registered trapline holders or holders of other rights of a similar nature						
	30	Provide a description of how the results of consultation were incorporated into the determination of effects						
	31	Provide a description of any potential impacts of the project on the quality, quantity, or flow of waters flowing through Inuit Owned Land (IOL)						
Inuit Water Rights	**32**	Advise the Board of any substantial affect of the quality, quantity or flow of waters flowing through IOL, and indicate whether negotiations have commenced or an agreement to pay compensation for any loss or damage has been reached with one or more DIO						
Security	**33**	The Applicant and/or DIO shall advise the Board in writing, if either party is unable to reach agreement on compensation						
	34	Provide a financial security assessment that is prepared in a manner consistent with principals respecting mine site reclamation and implementation found in the Mine Site Reclamation Policy for Nunavut, Indian and Northern Affairs Canada, 2002. The financial security assessment must include:						
	a	An estimate of the total financial security for final reclamation equal to the total outstanding reclamation liability for land and water combined sufficient to cover the highest liability over the life of the undertaking						
	b	The cost of having the necessary reclamation work done by a third-party contractor if the operator defaults						
	c	Contingency factors appropriate to the particular work to be undertaken						
Financial Information	**35**	Provide a statement of financial responsibility						
	36	If the applicant is an entity for which audited financial statements are issued, a copy of the most recent audited financial statements must be attached to the statement of financial responsibility						
	37	Provide the name of a corporation, limited company or other business entity, with a list of the officers of the company and a copy of the Certificate of Incorporation or evidence of registration of the company name						
Abandonment and Restoration	**38**	Provide plans for the abandonment and restoration, or temporary closing of the project including a description of how project equipment and construction materials will be removed and how the site will be reclaimed						

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
	39	Provide a list and description of abandoned or restored site facilities						
	40	Provide details regarding the timing of the removal of any dewatering dikes (if applicable) and the implications of this action on water quality						
	41	Provide detailed information regarding the method used to remove/breach any dewatering dykes (if applicable), including details of any mitigation measures for any adverse impacts.						
Studies and Designs	42	Provide a list of studies, reports and plans relevant to the application that have been undertaken to date including:						
Designs	a	Design rational; design requirements, design criteria, design parameters, design standards/analysis/method						
	b	Design assumptions and the limitations associated with such design assumptions						
	c	The inclusion of clear, definable engineering qualifiers with all design drawings and reports						
	d	Site specific data and analysis to support the design and management decisions made						
	e	Materials that appropriately delineate the particulars of a design or plan						
	43	Provide construction methods and procedures regarding how infrastructure will be put in place on-site						
	44	Provide a timetable for submission of preliminary and final-for construction engineered designs (note: for construction designs are required for NWB approvals)						
Annual Reporting	45	Provide detailed information regarding the content of annual reports and a proposed outline or template of the annual report. The annual report should include the following:						
	a	Water related monitoring results						
	b	Comparison of water quality and quantity monitoring data with the water quality and quantity predictions presented in the application						
	c	A description of how the conditions in the NIRB project certificate related to the NWB mandate have been implemented						
	d	Project changes under Adaptive Management						
	e	Any actions taken in response to direction provided by the Inspector						
		If the application is for a renewal or amendment of an existing licence, provide a status report. This report must document for each condition of the existing water licence, what action the licensee has taken						
		If the application is for a renewal or amendment of an existing licence, provide a compliance assessment. This assessment must indicate when facilities were inspected by regulatory agencies such as INAC or GN and which agencies. The compliance assessment must include any inspection reports and/or directions issued by the Inspector and any responses provided by the licensee. The compliance assessment must also list any spills that have occurred including a description, location shown on a map, and the action taken to address the affected area.						

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Proposed Time Schedule	**46**	Provide the proposed start and completion dates for each phase of development (construction, operation, closure and post closure) and any anticipated periods of seasonal shut down						
Proposed Term of Licence	**47**	Provide a proposed term of licence including the expected date of licence issuance and the expected date of licence expiry						

4.0 Water Use: including Water Works, Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
Water Use: (including water works), Quality and Quantity	**1**	Provide a detailed description of all forms of water consumption. Categorize use(s) as mining/industrial use and/or domestic use.						
Environmental Setting	**2**	Provide a description of the regional and local setting						
	3	Provide a description of the surface water regime						
	4	Provide a description of receiving lakes (lake id, hydrology, water quality)						
	5	Provide a description of the groundwater regime						
	6	Indicate the type of water source(s) as lake, river, well, or other type						
	7	Provide a description of the usual break-up and freeze-up periods						
	8	Provide a description of the site conditions, including the location, topography, geologic and hydrologic characteristics, climate conditions, permafrost conditions and soil and rock conditions (provide test pit/ drill hole logs and laboratory test results)						
	9	Provide a description of the historical uses of the waters affected by the project						
	10	Provide a description of any traditional uses in the project area						
	11	For each water use, provide the following streamflow data in cubic metres per second for all watercourse included in the application						
	a	mean annual flow						
	b	mean summer flow						
	c	minimum summer flow						
	d	minimum annual flow						
	e	mean annual flood						
	f	maximum summer flood						
	g	mean summer flood						
	12	Provide bathymetric information						
	13	Provide results of any assessment of the permeability of any faults and taliks beneath water bodies						
	14	Provide baseline data and an evaluation of baseline data describing surface and groundwater quality in the project area (physical, chemical, and biological characteristics)						
	15	Baseline data and an evaluation of baseline data describing fish and fish habitat in the project area						
Fisheries	**16**	Provide a fisheries assessment including:						
	a	Detailed area description (including photographic record)						
	b	Description of fish habitat (including river or lake bottom substrates such as silt, sand, or cobble)						
	c	Presence of sensitive habitats (spawning, migration corridors etc.)						
	d	Description of aquatic and riparian vegetation						
	e	Fish community and lifestage present						
	f	Depth and width of watercourse						
	g	Max/min water flows, currents, tides						
	h	Turbidity and sediment loads (total suspended solids)						
	i	Sport, commercial, subsistence fishery present						

4.0 Water Use: including Water Works, Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
Water Intake	**17**	Provide the name of the primary water source as well as the name of any alternative water source(s)						
	18	Provide a description of the quality of the water from the source as well as capacity of the water source						
	19	Indicate the amount of water taken from each source and provide a description of the method of extraction including specific pumping rates, pumping procedures and potential for draw down						
	20	Provide the acquisition rate in cubic metres per day and cubic metres per year						
	21	Provide a description of the water intake method including the intake facility, the operating capacity of the pump used, the details of any screening to exclude fish, and the distance the pump will be placed from the ordinary high water mark of the watercourse						
	22	Provide a description of the general condition of any existing water intake facility. Rate the condition of the facility as satisfactory or unsatisfactory and explain the rating						
	23	Indicate whether water is drawn from the source intermittently or continuously and if intermittently indicate during what months it is drawn and for what period it is drawn (days/weeks/months)						
	24	Indicate the amount of water to be returned to the source						
	25	Provide a description of the methods to ensure water returned to source is of an acceptable quality						
	26	Provide a description of the quality of the water source for each season (summer, fall, winter, spring)						
	27	Provide a detailed description of any potential impacts to water quality, quantity, and rate of flow including seasonal rate of flow						
	28	Provide a description of any hydrostatic testing programs, including water sources, and treatment/disposal requirements						
	29	Provide a description of the source of water including the name of the water body and the location of the water source as shown on a map						
	30	Indicate the quantities of water required for ice road construction and provide a description of the methods of ice road construction						
Water Storage	**31**	Indicate whether the project includes water storage and provide the following if applicable:						
	32	A description of any water storage facilities including the type (reservoir/pond, storage tank), location, design, and the water storage volume in cubic meters						
	33	If the water storage facility is a reservoir indicate whether the reservoir is lined, the type of liner and when it was or will be installed						
	34	Provide a description of the general condition of any water storage facility						
Water Treatment	**35**	Indicate whether the project includes water treatment prior to water use and provide the following if applicable:						

4.0 Water Use: including Water Works, Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
	36	A description of the type or method of water treatment involved using a diagram if possible and the capacity of the facility						
	37	The results, if any, of the most recent bacteriological and chemical analyses of water sources						
	38	A description of the general condition of any water treatment system and provide an explanation if it is unsatisfactory						
Water Distribution	**39**	Indicate whether the project includes water distribution and provide the following if applicable:						
	40	Calculate the total water consumed per day (L/day) by multiplying the estimated number of persons on the system by the estimated average water consumption(Litres/ capita/day). Calculate the total water consumed for each individual distribution system if more than one is used (ie. piped water and trucked water).						
	41	Provide a description of the general condition of any existing water distribution system and provide an explanation if it is unsatisfactory						
	42	Provide a description of site water management facilities						
Watercourse Crossings and/or Trainings	**43**	Indicate whether the project includes any watercourse crossings including pipelines, bridges, culverts or roads						
	44	Indicate whether the project includes any watercourse trainings including channel and bank alterations, culverts, spurs, erosion control, and artificial accretion						
	45	Provide a description of proposed works or undertakings (culvert crossing, bridge, intake, infilling pipeline, etc.)						
Flood Control	**46**	Indicate whether the project includes any flood control structures						
Diversions	**47**	Indicate whether the project includes any diversions including ditches and dikes						
Alterations in flow	**48**	Indicate whether the project includes any activities or structures that could alter the flow of a watercourse including dams, spillways, berms, cofferdams, and dikes						
	49	Provide a description of any expected changes in surface water flow or storage						
	50	If the cross-section of any watercourse is changed, provide a description of the change and its effect on the flow capacity of the channel						
	51	If a dam or dyke is used to store or alter the flow of water, provide a description of the effect of the dam or dyke on fish migration or movement						
Dewatering	**52**	Provide a description of dewatering programs, if planned, including estimated quantities, methods of withdrawl, end use or discharge location						
	53	Provide an estimate of the quality of the groundwater that will flow into any open pits						
Predicted Environmental Impacts and Proposed mitigation	**54**	Provide a description of all proposed environmental management systems and monitoring programs for all significant impacts						
	55	Provide a description of all mitigation plans and/or programs						

4.0 Water Use: including Water Works, Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
measures	**56**	Provide a description of all remediation plans and/or programs						
	57	Provide a description of mitigation measures to be undertaken if groundwater monitoring around the tailings facility demonstrates that contamination from tailings is occurring through a fault (if applicable)						
	58	Provide a site water quality model using the updated estimates of the quality of groundwater flowing to the pits, and additional groundwater quality data collected on site. The water quality model should be used to assess the impacts of any pit water discharges on the environment and to develop mitigation measures for disposing of pit water of poor quality						
	59	Provide a description of the measures to be taken to mitigate the project effects on the historical resources or procedures to be followed should artifacts be discovered						
	60	Provide a description of the effects of water usage on the river or lake from which water will be drawn						
	61	Provide a description of the measures incorporated into the project design to mitigate potential impacts to water quality, quantity, and rate of flow including seasonal rate of flow						
	62	If the course of any channel is changed, provide a description of measures to maintain stream bed and bank stability						
	63	Provide a description of the measures incorporated into the project design to mitigate potential impacts of the project on the quality, quantity, or flow of waters flowing through IOL						
	64	Provide a description of the measures incorporated into the project design to mitigate potential impacts of the project on other licensees or pre-existing applicants, domestic users, in-stream users, authorized waste depositors, owners of property, occupiers of property, and/or holders of outfitting concessions, registered trapline holders or holders of other rights of a similar nature						
	65	Provide a description of how the results of consultation were incorporated into the design of mitigation measures						
	66	Provide a description of mitigation measures that will be implemented when working in close proximity to water						
Fisheries	**67**	Provide a description of any potential impacts to fish and/or fish habitat. (Indirect effects may include project effects, water quality, or aquatic organisms. Direct effects may include degradation or alteration of fish habitat)						
	a	potential effects on fish or fish habitat,						
	b	the area square metres to be impacted,						
	c	measures to avoid sensitive periods and habitat areas (i.e., spawning beds, migration corridors),						
	d	measures to avoid physical impacts on habitat,						
	e	measures to maintain flows and fish passage,						
	f	measures to avoid sedimentation,						
	g	detailed habitat no-net-loss plan and site restoration plan,						
	h	macroscopic site surface water and groundwater management;						

4.0 Water Use: including Water Works, Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
	68	Provide a description of plans for the replacement of any fish habitat lost due to the project and provide a schedule for the proposed works						
Studies	**69**	Provide a list of studies, reports and plans relevant to the application that have been undertaken to date, including:						
	a	Water Management Plan including water balance						
	b	Operation and Maintenance Plan						
	c	Remediation Plans for water works infrastructure						
	d	Construction Plan and construction schedule for water works						
	e	Monitoring Plan						
	f	Implementation schedule for construction of works, submission of studies and mitigation plans for operations and closures.						

5.0 Waste Disposal: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
Waste Disposal:	**1**	All forms of waste disposal must be described in detail indicating the type of waste(s) generated and/or to be deposited						
	2	Indicate whether the project includes any deposit of waste (See NWB definition of Waste in the NWB *Guide 2: Terminology and Definitions*)						
	3	Provide a list of the types of waste included in the project						
	4	For each type of waste, provide the location, rate, timing, frequency and duration of the deposit						
	5	For each type of waste, provide the proposed methods and processes for collecting, storing, treating and discharging the waste, as well as the volumes of any waste storage systems						
	6	For each type of waste treatment/ storage/ discharge facility, provide a description of the construction methods, type and composition of the materials to be used in the construction of the structure, equipment to be used, schedule, quality assurance/ quality control measures, and inspection and maintenance procedures						
	7	Provide details regarding chemicals or other hazardous or potentially hazardous materials that will be used and will be in contact with or may impact water either directly or indirectly						
	8	Provide detailed information regarding the disposal of any lake bottom sediments						
	9	Provide detailed water treatment plans for discharges from the Tailings Impoundment Area, as well as treatment plans for discharges from attenuation pond(s) (on a contingency basis). Water treatment plans should include estimates of treatment efficiency for each parameter of concern and a description of pH adjustment methods						
	10	For each type of waste disposal treatment system provide the design plans stamped for construction. The designs shall include:						
	a	Level of treatment (primary, secondary or tertiary)						
	b	A description of the types of waste entering each treatment system or disposal area (if applicable, provide a description of the source, type, and quantity of the commercial or industrial waste)						
	c	Capacity and retention time of the facility						
	d	Estimated rates for discharge						
	e	Concentration of waste						
	f	Geochemical characterization, where applicable						
	g	Discharge effluent criteria proposed						

5.0 Waste Disposal: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
	h	Identification of final discharge point (last point of control)						
	i	Type of discharge (seasonal, annual, continuous)						
	j	Restriction on discharge						
	k	By products of treatment which may require further treatment, characterization, handling and disposal						
	l	Receiving water quality objectives						
	m	Capacity of the receiving environment						
	n	Contingency measures						
	o	Remediation objectives						
	11	Indicate whether any natural watercourse enters the disposal area and if applicable provide a description of the measures employed to decrease the amount of runoff entering the area						
	12	Indicate whether fish, shellfish, or other wildlife are harvested in or near the discharge area and if applicable indicate the species harvested and the level of harvest						
	13	If waste is expected to infiltrate into the ground, provide a description of the sub-surface soil compositions and provide information on groundwater elevations for the project area. Also provide the proximity between the proposed waste disposal system and the groundwater elevation						
	14	All design(s) plans shall include details regarding direction and path of wastewater flow from the area or infrastructure; details of retaining structures; details of the drainage basin; existing and proposed drainage modifications; distance from watercourses and fish bearing waters; details regarding the direction and path of wastewater flow from the area; the distance from watercourses and fish bearing waters; all sources of seepage encountered near watercourse and fish bearing waters; and the volumes (m3/day) and direction of any seepage; and mitigation measures.						
	15	Provide design drawings for the construction of any disposal/treatment facility. Final drawings for construction must be stamped by a Professional Engineer licensed to practice in Nunavut. (See Section 7 of the NWB's *Guide 4: Completing and Submitting a Water Licence Application* for more information regarding design drawings).						
Waste Disposal: Quality and Quantity	**16**	Provide a description of each type of waste generated, its composition, quantity (cubic metres per day), concentration, method of treatment and disposal, including:						

5.0 Waste Disposal: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
	a	System for the treatment and/or disposal of solid waste, liquid effluent, and gaseous materials expected from the operations, including any measures proposed to minimize production of wastes						
	b	Substances and their amounts that will be released to the environment, methods of release and any associated control technology						
	17	For each discharge of waste to the receiving environment provide a description and justification of the proposed standards to be applied						
Predicted Environmental Impacts and Proposed mitigation measures	18	Provide a description of the environmental and resource impacts on the following:						
	a	Groundwater and surface water including:						
		changes in flow						
		quantity and quality						
	b	Land including:						
		geologic structure change						
		soil contamination						
		compaction, settling and erosion						
		alteration of the permafrost regime						
		riparian zone loss						
	c	Vegetation including:						
		species composition and abundance						
		non-native species introduction						
		accumulation of toxins and heavy metals (in relation to remediation objectives for closure)						
	19	Provide a description of all mitigation plans and/or programs						
	20	Clearly outline the proposed discharge criteria, how the criteria were developed, and how these criteria will be used to prevent ecological effects in the receiving environment as a result of reconnecting the pit lakes to the watershed (especially in regards to contaminants, major ions and nutrients)						
	21	Provide detailed treatment plans for the treatment of effluent from attenuation pond(s) and/or reclaim pond(s)						
	22	Provide a discussion of the consequences of long-term stratification in any pit lakes and associated contingency plans						
	23	Provide a description of the ground condition for design and engineering of earthwork infrastructure, including:						
	a	Interim and permanent waste rock facilities						

5.0 Waste Disposal: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
	b	Tailings containment area						
	c	Landfills						
	d	Landfarms						
	e	Fuel and chemical storage facilities						
	f	Explosives management areas and facilities						
	g	Quarries or borrow pits						
	h	Hazardous waste facilities						
	i	Wastewater treatment facilities						
	j	Ore stockpiles and waste rock piles						
	k	Overburden piles						
	l	Dewatering dikes						
	m	Mine rock geochemistry						
	24	Provide designs for the fuel tank farm facilities including a description of the nearest water bodies. Provide an evaluation of impacts and mitigation measures in case of a fuel spill.						
	25	Provide detailed contingency plans for the treatment of turbid water during dewatering activities and/or increased suspended solids during operations (i.e rewatering)						
Studies	**26**	Provide a list of studies, reports and plans relevant to the application that have been undertaken to date. Including design and management decisions. Studies, reports and plans may include:						
	a	Waste management						
	b	Waste rock management						
	c	Tailings management						
	d	Metal leaching / acid rock drainage management						
	e	Landfill management						
	f	Landfarm management						
	g	Incineration management						
	h	Hazardous waste management						
	i	Water management						
	j	Geotechnical and geothermal assessment						
	k	Permafrost protection						
	l	Water quality modeling						
	m	Snow drift assessments						
	n	Leachate and groundwater collection systems						
	o	Wastewater treatment						
	p	Operation and maintenance plan						
	q	General monitoring						
	r	Monitoring plan						
	s	Tailings monitoring						
	t	Mine site water quality						
	u	Receiving water quality						
	v	Aquatic effects monitoring						
	w	Geotechnical and structural monitoring						
	x	Quality assurance and quality control						
	y	Spill contingency and emergency response plans						

5.0 Waste Disposal: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
	z	Interim and final abandonment and reclamation plans for the mine site						
	aa	Remediation plans for waste disposal infrastructure						
	bb	Human health and ecological risk assessment for establishment of remediation objectives for closure						
	cc	The collection of weather data for purposes of mine design						
	dd	Construction plan and construction schedule for waste disposal infrastructure						
	ee	Implementation schedule for construction of works, submission of studies and mitigation plans for operations and closure						
	ff	Options analysis						
Operations and Maintenance	**27**	If the project includes sewage and/or solid waste disposal, provide an Operations and Maintenance Manual in accordance with the "Guidelines for the Preparation of an Operations and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories, 1996"						
Hazardous Materials	**28**	Indicate whether the project includes the handling or storage of petroleum products or hazardous materials						
	29	Provide a description of the type of petroleum products and/or hazardous materials						
Emergency Response and Spill Contingency	**30**	Provide an Emergency Response and Spill Contingency Plan (ERSCP) consistent with established Water Board guidelines						
	31	Plan(s) shall address phases of the project including construction, operation, care & maintenance.						
	32	Provide an explanation of how the Applicant will ensure project contractors meet the Applicants' due diligence standards with respect to oil and hazardous material spill prevention, preparedness, response, and restoration.						
Abandonment and Reclamation	**33**	Provide a description of all remediation plans and/or programs						
	34	Abandonment & Reclamation Plan(s) shall address all phases of the project for construction, operation, care & maintenance and final closure.						

5.0 Waste Disposal: Quality, Quantity, Predicted Environmental Impact and Proposed Mitigation Measures

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
Monitoring	**35**	Provide a Monitoring Plan including a description of the methods, procedures, standards, and schedules proposed. Monitoring may be required for effluent, surface and/or groundwater water quality, water quantity, or flow; ground temperature; ground settlement; etc. The Monitoring Plan must consider the life of the project, temporary closure and permanent closure.						
	36	Indicate who is responsible for sampling including that person's position, contact information and level of training						
	37	Indicate the name and contact information of the certified laboratory performing the analysis of samples						
	38	Provide a description of how the results of consultation were incorporated into the design of the Monitoring Plan						
	39	Provide an Inspection Plan including a description of the methods, procedures, standards, and schedules proposed. Inspections may be required for engineered facilities related to the management of water and waste as well as spills. The Inspection Plan must consider the life of the project, temporary closure and permanent closure.						
	40	Provide a description of how the results of consultation were incorporated into the design of the Inspection Plan						
	41	Provide a description of all proposed environmental management systems and monitoring programs for all significant impacts						
	42	Provide a summary table of all monitoring commitments that details all Surveillance Network Program (SNP) locations. The table should include parameter(s), location, frequency, and mining phase, along with, cross-referencing to sub-documents where detailed information is provided. Where appropriate, a map detailing the location of monitoring sites is to be provided.						
	43	Provide a summary table of the expected quality and quantity of waters, over time in all sumps, SNP, and discharge points, along with i) if applicable, adaptive management criteria to benchmark if mitigation/contingency are to be implemented, ii) if applicable, water quality criteria, and iii) management action.						
	44	Provide a monitoring plan for incinerator emissions (including, but not limited to, stack testing and annual reporting)						

6.0 Project Specific Information Requirements (PSIR)

PSIR's will only be issued following a positive Environment Assessment Review determination by NIRB

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
Applicant								
Applicant Representative								
Location of Undertaking								
NPC Determination								
NIRB Determination								
Description of Undertaking								
Nature of Interest in the Land								
Water Use: (including water works)								
Water Use: Quality and Quantity								
Waste Disposal:								
Waste Disposal: Quality and Quantity								
Other Authorizations								
Predicted Environmental Impacts and Proposed mitigation measures								
Options (Alternatives)								

6.0 Project Specific Information Requirements (PSIR)

PSIR's will only be issued following a positive Environment Assessment Review determination by NIRB

Section Title	Section No.	Information Requirement	Indicate whether Information Requirement is applicable by inserting ' Y ' or ' NA '	If 'NA' provide justification	Insert Title, Author and Date of Document where information is provided	Insert electronic file name of document where information is provided	NWB Concordance Assessment	NIRB Guideline Section No.
Existing and Other User Water Rights								
Inuit Water Rights								
Security								
Financial Information								
Studies								
Proposed Time Schedule								
Proposed Term of Licence								

APPENDIX A: ADDITIONAL SOURCE DOCUMENTS TO ASSIST THE APPLICANT

This appendix provides a list of additional documents, guidelines, legislation and standards that may be of use to the Applicant in preparing the supplemental information.

For the development of additional information the proponent should be guided by, and is directed to, the most recent editions of the following standards/guidelines

- CCME – *Environmental Code of Practice for Above Ground and Underground Storage Tanks Systems containing Petroleum Product and*
- CCME – *Guidelines for the Protection of Freshwater Aquatic Life;*
- DFO – *Decision Framework for the Determination and Authorization of Harmful Alteration, Disruption or Destruction of Fish Habitat;*
- DFO – *Freshwater Intake End-of-Pipe Fish Screen Guide (1995);*
- DFO – *Guidelines for the Use of Explosives In or Near Canadian Fisheries Water (1998);*
- DFO – *Policy on the Management of Fish Habitat and Habitat Conservation and Protection Guidelines;*
- DFO – *Policy for management of Fish Habitat (2001);*
- EC – *Guidelines for the Preparation of Hazardous Material Spill Contingency Plans;*
- EC – *MMER Environmental Effects Monitoring Program Protocol (2002);*
- EC – *Guidelines for the Assessment of Alternatives for Tailings Storage for Metal Mining Projects Proposing to use Natural, Fish-bearing Water Bodies as Tailings Impoundment Areas (Draft July 4, 2008);*
- GN – *Contaminated Site Remediation (2002);*
- GN – *Environmental Guideline for Contingency Planning and Spill Reporting in Nunavut ;*
- GN – *General Management of Hazardous Waste in Nunavut (2002);*

- GN – *Occupational Health &Safety Guidelines (2006);*
- GN – *Spill Contingency Planning and Reporting Regulations (1998);*
- GNWT – *Environmental Protection Act (1988);*
- GNWT – *Ice Road guidelines;*
- INAC – *A Policy respecting the Prohibition of Bulk Water Removal from Major River Basins in Nunavut (2003);*
- INAC – *Nunavut Waters and Nunavut Surface Rights Tribunal Act (2002);*
- INAC – *Mine Site Reclamation Policy for Nunavut (2002);*
- INAC – *Territorial Lands Act (1985);*
- INAC – *Territorial Land Use Regulations;*
- NWB – *Guidelines for Abandonment and Restoration Planning for Mines in the NWT;*
- The Mining Association of Canada "*A Guide to the Management of Tailings Facilities* " (1998), (Referenced within the guidelines as GMTF);
- The proponent where applicable should consider the application of the Canadian Dam Association "*Dam Safety Guidelines* " (January 1999) in the design, construction, operation, monitoring, decommission and closure of dam infrastructure. (Referenced within the guidelines as CDA);
- TC – *Transportation of Dangerous Goods Act/Regulations* ;
- *Workplace Hazardous Materials Information System* (WHMIS);

Copies of all guidelines referenced in this document are available on the NWB ftp site or with Justice Canada for federal legislation and policies. The Applicant may have to contact the appropriate author of the above listed guidelines for a copy if needed.

The Applicant is encouraged to consult with governmental agencies on issues related with the above listed guidelines. When a guideline is used by the Applicant the NWB requests that proper footnoting or referencing be done. It is the Applicant's responsibility to ensure that all necessary standards and guidelines are considered in the water licence application.