

Technical Meeting / Pre-Hearing Conference
Compilation of Issues

ISSUE	INAC	GN-DOE	EC	DFO	GN-CLEY
Completeness					
	The following items remain outstanding and were required as part of a complete application:				
	1a) Operating capacity of pump used and intake screen size used.				
	1b) Conditions applying to the monitoring Program of the water licence; water sampling is required. (see Part H of the licence)				
	1c) Monthly and annual data for water use and waste disposal is based on water delivery records (water delivered equals effluent waste disposal). INAC considers this an adequate record				
	1d) Items under Part B Item #1 of the water license remain outstanding. These include i) tabular summaries of all data generated under the Monitoring Program. ii) a summary of modifications and major maintenance work carried out on water supply and waste disposal facilities. iii) list of unauthorized discharges. iv) a summary of abandonment and restoration work completed and any work anticipated for the next year.				
	1e) Hazardous waste management plans, procedures and protocols should be adopted.				
	The outstanding items in comments on completeness, 1b, 1c, 1d, & 1e; and on contaminated soil and ponding, 2a, 2b, should be addressed but are not critical to the issuance of the licence.		The application documents contain conflicting information on many matters, and clarification was sought in the letter previously submitted to the Nunavut Water Board (NWB) by Environment Canada as part of the Board's Completeness Check. Information that remains outstanding include: -Number of sewage lagoons currently in use, and status of those not in use, if any. -Confirmation on the current sewage lagoon wetland flow path(s) -Sewage Lagoon discharge time, duration and method. -Identification of SNP ARV-2 location		
Technical Review					
Water Supply					
Water supply filtration changes	Water supply filtration changes are mentioned in the license application and should be included in the Operation and Maintenance plan.				
Drawdown of Wolf River				In order to provide our advice with respect to the impact of fish and fish habitat or determine our potential role related to this Type "A" Water Licence, we require at a minimum, the following additional information on impacts to fish and fish habitat: A detailed description of the proposed water volume of water to be withdrawn from Wolf River against total annual recharge and the potential ramifications of draw down.	
Water intake				In order to provide our advice with respect to the impact of fish and fish habitat or determine our potential role related to this Type "A" Water Licence, we require at a minimum, the following additional information on impacts to fish and fish habitat: A detailed description of the proposed water intake. Refer to the Freshwater Intake End-of-Pipe Fish Screen Guidelines (DFO 1995), which is available at www.dfo-mpo.gc.ca/library/223669.pdf .	

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				March 30 and 31, 2010: DFO attended a NWB led Technical Meeting and Pre-Hearing Conference. The GN-CGS agreed to collect additional information through 2010 to assess the potential impacts of river draw down on the aquatic environment and confirm the information submitted by GN-CGS regarding the water intake structure. DFO asks that the information be submitted as it becomes available	
Pipeline					The department does not object to the application. However, we have concerns because of threats posed by the proximity to known archaeological sites near the southern limits of the water pipeline location.
Solid Waste					
Bulky Metal Storage and Contaminated Soil Site	2a. It is stated in the O & M Plan that "seven hundred and fifty cubic meters of contaminated soil was reportedly removed from the N.W.T. Power Corporation (NWTPC) tank farm and brought to the Bulky Waste site for landfarming. Some of the soil has been spread over the former landfill with approximately 300 m3 still in piles. The soil is believed to be contaminated with diesel. The proposed new landfill site will have an area set aside for bulky metals and a landfarm. It is proposed that the contaminated soil at the bulky metals site be evaluated and handled according to regulations. No time table has been set to address this issue." Nuna Burnside. Standard operating procedures should be provided to indicate how the contaminated material and any run off will be minimized including appropriate timelines and future activities.		A separate Solid Waste site has been identified at 500m south of the community containing vehicles, heavy equipment, tires, appliances, snowmobiles, and 45 gallon drums as well as hydrocarbon contaminated soil. Leachate from this site is unmanaged. EC recommends that this site be captured by this new Type A water licence and require appropriate Bulky Waste management as well as landfarming and monitoring of the contaminated soil. EC recommends decommissioning and restoring this site as soon as an appropriately lined site becomes available. In the meantime, leachate sampling would provide useful information to identify the geographical extent of environmental impact.		
			EC recommends the licence include a condition requiring monitoring of leachate from the Bulky Waste Site with an additional Surveillance Network Program sampling site to be sampled twice annually when surface water is present. The Solid Waste Facility Operation and Maintenance Plan should include a section specific to the Bulky Waste Site.		
Runoff from the Solid Waste Disposal Facility	Runoff from the solid waste disposal site is required to be prevented and controlled from moving into the environment. As of the last INAC inspection this has not been done. Use of contaminated soil as cover material may accelerate existing runoff from landfill.				
	2b) Ponding and runoff from the solid waste disposal site is required to be prevented and controlled from moving into the environment. As of the last INAC inspection this has not been done.				
Hazardous Waste storage			f		
Solid Waste Operations and Maintenance Plan			EC considers this document to contain pertinent information and references. The Solid Waste O&M Plan should be revised and resubmitted for approval upon issuance of a new water licence.		
			The Solid Waste Facility contains leachate-impacted surface water within the fenced area of the facility as well as adjacent to the site. Containment, treatment and drainage control are required both while the facility is in the operational and decommissioning phases. A licence condition for a Solid Waste Water Management Plan to be submitted for approval to the Board within 6 months of issuance of the licence. This plan should cover water containment, treatment and drainage control of water within the boundaries of the Solid Waste Facility.		

Note: This document may not represent a complete compilation and is NOT intended to replace official submission filed by the Parties.

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Burning	The Operation and Maintenance (O and M) plan for the solid waste facility states: that the Hamlet burns combustible waste as a way to reduce volumes of wastes. This, however contradicts the water license application where it is stated that burning of combustible waste does not take place	The DOE recommends that wood which has been treated with preservatives (such as creosote, pentachlorophenol, or heavy metal solutions) should not be burned.	Section 3.3 Landfill Operation (Burning) In the Water Licence Application, it is stated that “the Hamlet does not conduct burning.” However, the O&M Plan explains that “Burning is used to reduce volumes of waste and is uncontrolled with no segregation of combustible material from non-combustible materials.” Furthermore, explicit directions on conditions and methods of burning are provided in the O&M Plan. If burning is not a practice at this landfill, EC recommends that all reference to burning should be removed from the O&M Plan. If burning is indeed occurring as a management measure at the Solid Waste Facility, the following comments are provided: <input type="checkbox"/> In order to provide clear operational instruction regarding material suitable for burning, EC recommends including lists of material that are suitable or non-suitable for open burning. <input type="checkbox"/> A reference should be made in this section to the Government of Nunavut Department of the Environment (GN-DOE) Policy entitled “Municipal Solid Wastes Suitable for Open Burning.		
Hazardous Waste		The DOE monitors the movement of hazardous wastes, from generators, carriers to receivers of the wastes, through the use of a tracking document known as a Waste Manifest. A Waste Manifest must accompany all movements, and all parties must register with DOE by contacting: Robert Eno (867) 975-7729 reno@gov.nu.ca Ian Rumbolt (867) 975-7748 irumbolt@gov.nu.ca This procedure should be stated in the Environmental Emergency Contingency Plan as well as the Solid Waste O&M Plan.	Section 3.4 Hazardous Waste In order to provide clear operational instruction regarding Hazardous Waste, EC recommends including a list of typical Hazardous Wastes as well as a reference to the location of the Hazardous Waste Disposal Area. Futhermore, the GN-DOE Environmental Guideline for General Management of Hazardous Waste should be referenced in this section.		
Reuse/ recycle			Section 3.9 Reuse Recycle This section contains one paragraph relating to a Reuse Recycle Area followed with a section relating to Hazardous Waste. EC recommends moving the Hazardous Waste information to Section 3.4 Hazardous Waste.		
Landfarming contaminated soil			Landfarming of Contaminated Soil The application documents indicate that 750m3 of diesel contaminated soil is present at the Bulky Metals Sites. However, no operational instruction is given on the proper handling of hydrocarbon contaminated soil. EC recommends including landfarming methods, containment, and sampling as part of this O&M Plan. Please find attached EC’s Landfarming Recommendations for your consideration.		
			EC agrees with GN-CGS’s recommendation to include a licence condition to conduct an inventory and assessment of all contaminated soil in the community, and develop a plan for treatment and disposal of the soil. EC recommends this inventory, assessment as well as the treatment and disposal plan be submitted within 6 months of issuance of the licence.		
Sewage					
Sewage seepage	3a. In the Operation and Maintenance plan of sewage lagoons it states that the lagoon continuously seeps sewage through the berm to the wetland area. The O and M Plan states that the seepage out of the lagoon equals input into the lagoon as the level of the lagoon remains constant. The O and M plan also calculates retention time in lagoon as 149 days, but this calculation does not consider seepage amounts.				

Technical Meeting / Pre-Hearing Conference
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	Specifically our concern is around the lack of knowledge of the impact of the sewage seeps through the berms. The concerns are based on the seeps affecting the integrity of the berm and the impact of seepage on the environment as there is no monitoring data to assess impacts. INAC inspectors have noted CCME exceedances during previous inspection years. Clearly the lagoon would afford some form of the intended treatment if some retention time was provided, rather than seeping out at a constant rate as suggested by comment #3a above. Repairs to the berm along with some monitoring would provide some assurance that the lagoon is operating as intended reducing the potential for environmental impacts as well as the potential for catastrophic failure of the berm.				
	Comments on sewage seepage and berm, 3a & 3b integrity should be resolved prior to the issuance of the licence.				
Sewage decant/ discharge	There is no decanting/discharge schedule provided in the submission. However, in the supplemental Questionnaire to the water license application the proponent states that there is a seasonal discharge of sewage to the wetland area of 3-4 weeks in June and again in September if necessary. No discharge should take place without advising an INAC Inspector first as per water license. Decant operations should also be included in the O and M Plan of the Sewage Treatment Facility.				
Abandonment and restoration	3b. There are two discontinued sewage lagoons that are no longer in use. As a result there should be an abandonment and restoration Plan		EC recommends that Abandonment and Restoration Plans be submitted to the Board for approval for the old Sewage Lagoons if not in use and the current Solid Waste Facility.		
			The GN-CGS recommended that a site assessment be done, and an Abandonment and Restoration plan be developed by Dec. 31, 2010 (Recommendation #2, March 23rd, 2010 Response letter to comments). EC concurs with GN-CGS's recommendation and recommends a timeline of 12 months following the issuance of the licence to provide an Abandonment and Restoration Plan for approval to the Board.		
Effluent			The Hamlet must ensure that any effluent discharged from a system's final discharge point is in compliance with Section 36(3) of the Fisheries Act. According to the Fisheries Act, Section 36(3), the deposition of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.		
Sewage Disposal Facility Operations and Maintenance Plan			EC considers this document to contain pertinent information and references. The Sewage Treatment Facility O&M Plan should be revised and resubmitted for approval upon issuance of a new water licence		
Lagoon storage capacity			Section 3.1.2 Lagoon Storage Capacity This section indicates that sludge removal should be considered starting in 2014. Prior to sludge removal, sludge blanket thickness will need to be assessed. EC recommends including details on how to monitor or assess sludge thickness as part of the O&M Plan.		

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			At the Pre-Hearing Conference presentation, held on March 30th, 2010, the GN-CGS made the recommendation that an evaluation of the lagoon and its current and predicted long term impacts to the environment was required, and suggested that the license include "Conditions" to conduct studies and provide the findings with recommendations by December 31, 2010. EC agrees with GN-CGS's recommendation and suggests a timeline of 12 months beyond issuance of the licence.		
			EC recommends that the licence include the condition that the Hamlet develop a sludge management plan by December 31st, 2013. EC also recommends that the licence require sludge management, assessment, and disposal techniques be detailed in the Sewage Facility Operation and Maintenance Plan, and that this update to the plan be submitted to the Board for approval.		
Wetland					In addition, there is one other known archaeological site within the wetland treatment area which is downstream of both the active sewage lagoon and landfill site area. Accordingly, we recommend that an assessment of potential impact of this project on resources be completed.
Drawings					
Design Drawings			EC recommends that design drawings be submitted to the Board for approval prior to construction of the new Solid Waste Facility.		
			The Sewage Disposal Facility consists of a single engineered cell, discharging by twice-annual decant and by ongoing seepage through the berm, with effluent flowing through a wetland prior to its marine discharge to Hudson Bay. In the absence of design documents, it is unclear whether the effluent is intended to seep at the locations and rates that they are described in the application documents. Effective management and operation of a lagoon and wetland facility requires understanding of its function and design to mitigate environmental impacts. EC recommends the licence include a condition to provide to the Board with the Sewage Lagoon and Wetland design plan and drawings within 6 months of issuance of the licence.		
As-Built Drawings			Furthermore, EC recommends that As Built Drawings be submitted for the new Sewage Lagoon and the new Solid Waste Facility when it is completed.		
			EC recommends the licence include a condition to provide As-Built Drawings of the lagoon and engineered features of the wetland within 12 months of issuance of the licence.		
Monitoring					
Monitoring			No water quality results have been provided with the application, and no sampling is known to have taken place in the community, though monitoring was required under the expired licence. With regards to sludge accumulation, the application indicates that "the sludge has not interfered with the efficiency of the lagoon," yet no water samples have been submitted to verify this statement. Furthermore, in the Supplementary Questionnaire, the wastewater wetland is described as utilizing "complex physical and biological processes to treat the wastewater," yet no work or sampling has been done to verify this statement. Therefore, EC recommends that a thorough lagoon discharge and wetland hydrology study which includes water samples be completed as one of the licence conditions to ascertain this information.		

Technical Meeting / Pre-Hearing Conference
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			In order to monitor the whole effluent effect on the receiving environment, EC recommends including a Pass/Fail Bioassay Toxicity test at an appropriate sampling location prior to effluent discharge to the receiving environment. Toxicity testing provides an evaluation of effluent quality that integrates all the measured parameters, and provides the proponent with an indication of overall effluent characterization with respect to deleteriousness.		
			Work done by Fleming College indicates that the level of treatment in the lagoon is not optimal, and that the flow path of effluent through the wetlands is not well enough understood to be confident that the compliance discharge point (ARV-4) is appropriate. EC recommends that the proponent conduct a thorough lagoon discharge and wetland hydrology study, which includes effluent and water quality samples and a flow pattern assessment, be completed within 12 months of issuance of the licence. Submission of a study design to the Board for approval could be set as a licence condition, with the implementation of the approved study to follow Board approval. Upon completion of the study, steps should be taken to optimize operation of the system. This could include management aspects such as manner and timing of decant, or engineering solutions such as installation of retention berms in the wetland area. The Sewage O&M Plan should be updated to reflect best practices for operation in order to maximize treatment. EC recommends the licence include a condition requiring annual sampling of effluent between June and September at ARV-4 or, when flow volume is not sufficient, at an upstream location where adequate flow volume exists. This sample should be sent to an approved laboratory for acute toxicity testing using the rainbow trout pass/fail static bioassay test.		
			Supporting Plans		
Environmental Monitoring Plan and QA/QC Plan			EC considers this document to be a detailed and complete plan to achieve the objectives of high quality sampling, sample transportation and best management practices. In order to ease the interpretation of sample data results, the Monitoring Station Name (ex. ARV-1, ARV-2) should be specifically identified on the sample label. EC suggests that the words "sample name" in section 4.1.7 be replaced with "Monitoring Station Name." The EMP and QA/QC Plan should be revised and resubmitted for approval upon issuance of a new Water Licence.		
Environmental Emergency Contingency Plan			Environment Canada considers this Plan to be a comprehensive and well written plan. The EEC Plan should be revised and resubmitted for approval upon issuance of a new Water Licence.		
		Appendix A (Contact Information) of the Environmental Emergency ContingencyPlan should include the GN-DOE's Manager of Pollution Control, Ian Rumbolt,who can be reached at irumbolt@gov.nu.ca or (867) 975-7748.	Section 2.2.4, pg 5: This section should be revised to clarify whether or not spills from 'Other Hamlet Activities' are covered by this contingency plan. As this section is written, it could be understood that this EEC Plan, and those responsible for implementing the plan, applies to any spill that occurs in the municipality, whether or not it is related to activities described in the Water Licence.		
			Appendix A, Contact Information: EC suggests that the Government of Nunavut, Department of Environment, Environmental Protection Division be added to this list.		

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		<p>The DOE monitors the movement of hazardous wastes, from generators, carriers to receivers of the wastes, through the use of a tracking document known as a Waste Manifest. A Waste Manifest must accompany all movements, and all parties must register with DOE by contacting:</p> <p>Robert Eno (867) 975-7729 reno@gov.nu.ca Ian Rumbolt (867) 975-7748 irumbolt@gov.nu.ca</p> <p>This procedure should be stated in the Environmental Emergency Contingency Plan as well as the Solid Waste O&M Plan.</p>			
		<p>The DOE recommends that, should a spill occur on water or ice, Environment Canada be consulted regarding clean-up methods.</p>			
	<p>Under the Environmental Emergency Contingency Plan, section 1.4 heading states Hamlet of Whale Cove. This Heading should be changed to say Hamlet of Arviat.</p>				
<i>Colour</i>	<i>Meaning</i>				
	Repeated comments in initial & final submissions				
	Comments in final submission only				
	Comments in initial submission only				