ISSUE	INAC	GN	EC	AE	BGC	NWB	Proposed Action by GN	July 11 2007 Meeting Resolutions
Application before the NWB	The proponent is encouraged to submit a license renewal application that addresses all municipal activities related to freshwater consumption and waste disposal practices as soon as possible.						No Action	Note that Dillon is not the Applicant.
	The need for developing a municipal license application supplementary questionnaire should be considered.						No Action	
Construction of P-Lake Sewage Lagoon								
Design	INAC recommends that the NWB require the applicant to file final design plans that are stamped, signed, and dated by a qualified professional, with in advance of project implementation.	NWB ensure that all final design and construction drawings are signed by a registered professional engineer, registered in Nunavut, prior to issuing the water license.	Proponent is to ensure that all construction activities on the sewage lagoon do not result in sedimentation of any surrounding water bodies. Preventative measures, such as the use of silt curtains/fences should be used to help mitigate any potential impacts.	A concern that the Board is being asked to use an engineering document to support an amendment application that may not have been sealed by a Professional Engineer.	3.1(1)The review copy is not signed and professionally sealed. The Board should confirm to BGC that the original documents received from Dillon are signed and bear the professional seal of the responsible engineer, registered to practice in Nunavut.		Seal Documents have been received by NWB.	Confirmed
					3.1(2) In Section 1 there should be a paragraph noting that this document addresses the concerns and issues raised by the previous review, particularly the items noted to Dillon during the September 19, 2006 Technical hearing.		This does not impact the licence process.	NWB to provide internal document (containing issues from previous review) to Applicant. Issues in document should be addresssed by Applicant. Some of issues may be addressed in this (July 11 2007) meeting and these should be noted. Estimated date to submit information to NWB is beginning of August if practical.
					3.1 (4) In section 2 the water license requirements should include the technical requirements derived from the technical hearing held in Cape Dorset, September 19, 2006		NWB to provide specifics for these items.	see comment for 3.1 (2) above.
					3.1(5) There is no section that discusses the design criteria or design constraints.		Will address	Applicant to address BGC June 2006 correspondence on the issue. Correspondence should be available from NWB ftp site.
					3.1(6) There are numerous typo's, formatting problems and missing details [ ] to suggest that this is draft version, not a final document. The Board should insist that Dillon submit a completed version, especially considering that the report may not be signed and sealed.	Confirm hardcopy on the public registry signed and sealed by Dillon	This does not impact the licence process.	Confirmed that electronic version is the same as the hardcopy final document received at NWB head office
					3.1(7) In Section 4.1 there are minor discrepancies with respect to the design volume of sewage to be treated. At he top of page 9, a value of 96,100 m3 is given, Table 4.1 shows 96,047 m3 and at the bottom of the page it is set at 96,000m3.		This does not impact the licence process.	96,100 m3 is the final design volume. Discrepencies are due to rounding of significant figures.
Qualitative and Quantitative Effects of the Deposit of Waste				p.9, Section 5 Qualitative and Quantitative Effects of the Deposit of Waste, 1st para.; states that "aquatic life in P Lake will be adversely affected but the report does not say how or why	3.1(8) In Section 5.4 Dillon noted that chart 5.1 indicates a significant recharge component to P Lake an that in this respect, P Lake is not practical as a sewage lagoon unless recharge water is directed away from the proposed lagoon. Therefore the use of ditching to divert recharge water is carried forward in the conceptual design development. There is however, no further discussion of this issue in the rest of the design document, nor are diversion ditches shown in the drawing or mentioned in the specifications It is noted that the north and south berms are intended to act as diversion berms. However they are constructed out of granular materials of their effectiveness needs to be demonstrated. BGC also notes that use of ditches in permafrost affected terrain in not recommended.		Will address	**AE:** Dillon confirms that there are no fish in P lake. DFO verbally expressed satisfaction as long as applicant meets 1992 guideline at ocean. NWB to request DFO to confirm in writing (email sufficient) that P Lake is not a fishery. Also refer to June 7 2007 letter from EC. **BGC:** Applicant to provide drawings that indicates ditch drainage detail. Since ditches are contained in rock with GCL ditch side BGC is satisfied.
				clearly the applicant's responsibility to demonstrate, from an engineering and geotechnical perspective, that this proposed lagoon system would retain effluent for the prescribed retention period in order to achieve the required treatment prior to being able to safely release treated effluent back to the environment. Given the geotechnical concerns noted in all of BGC Engineering's comments on Dillon's and AMEC's work to date, there are reasons to be concerned that this system may not be sufficiently 'water-tight' and therefore with less retention time available, may not treat the sewage as predicted in this report.	3.1 (9) The statements made in Section 5.5 regarding groundwater movement from the lagoon are not supported. As discussed later in subsequent section of this memorandum, the site investigation and analyses completed to date do not support the fact that the lagoon, as currently designed will hold water.		AMEC has presented their data and information. There needs to be more specifics from the reviews on why they do not agree with the AMEC geothermal model.	See resolution to BGC issue 3.1(5). AMEC to confirm date of latest drilling program, particularly whether date was before or after September 2006 technical meeting. Applicant will define water tightness, define design criteria, and develop mitigative steps on a conceptual level for various contingency scenarios.

Note: Minutes from September 2006 technical meeting are not available.

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				On page 12, references for the assumed temperatures and treatment times are not indicated in the report text. These elements are fundamental and critical in the use of this formula, however treatment times of 70 to 90 days appear to be reasonable in this case. Are there any typical temperatures available from other NWT or Nunavut systems at this latitude to verify the 7 dC temperature limit ?			No there is insufficient data to provide the information requested.	Lagoon water temperature of 7 degrees is referenced from Northern Territories response to Canada Wide Strategy (see EC letter June 7 2007). Note that strategy may not be a public document. Applicant to clarify reference in final response to NWB. AE is satisfied.	
Fisheries				p.16, Section 6 P Lake Fisheries; re; the reference to forage fish – what is the source of this information and how were the specific species derived ? Are the Sticklebacks considered by DFO to be an important species that may be affected by the release of this effluent ? Under 6.1 why was there no electro-fishing done to determine the fish resource in P Lake ? What fisheries resource is present at the determined compliance point at Telik Inlet and what is the impact of this effluent on the ocean environment and fish habitat ? It appears that while a very short term fishery survey was carried out on P Lake, no such investigation was done for the fish habitat at the suggested compliance point.			No action	See resolution to AE issue pg9 Section 5 (line11). Applicant to forward previously prepared information on fisheries issue to the Board and discuss 1992 criteria for marine discharge. Date of applicant submission based on hearing schedule. Note that NWB has obligation to ensure that terms are as strict or stricter than any other regulations.	Note that NWB should confirm whether it can licence marine issues. Applicant was previously informed by Joe Murdock that NWB does not licence marine issues.
				p. 21, Section 6.3 Conclusion of Fisheries Investigation; Section 6 of the report concentrates on the possible fisheries resource and habitat implications at P Lake, rather than the location of the suggested compliance point at Telik Inlet where virtually no time or effort was spent trying to characterize that environment in terms of fisheries resources, background environmental information and water quality or the possible impact of this effluent release to the ocean.			No action	Applicant to provide more information on Telik Inlet fisheries	
					3.1(10) The design report lack details concerning the design and construction of the lagoon dikes. This is a major deficiency, considering the previous comments made by BGC, the discussions of the technical hearing and the fact that additional site investigations were carried out, leading to a revised design. No discussion is provided regarding the basis for the design changes from the previous submission.		There submission contained a re-designed berm, and the follow-up geotechnical investigation.	Applicant to provide stability, seepage, and geothermal designs for dikes. Information may have been submitted previously. Does BGC have Annex to GN submission? Dillon to review what reports should have been submitted to NWB from GN (provide list) . NWB to confirm what information was distributed for review in May. Confirm that all appropraite information has been reviewed by BGC.	
					3.1 (11) In section 11, Dillon noted that "The design elements have used standard engineering practices an reviewed by the geotechnical engineer:. This statement is not supportable based on the geotechnical deficiencies noted in this memorandum. In addition, this section omits addressing the specific issues previously raised by the Board.		No action. Dillon's statements are valid.	Applicant to provide stability, seepage, geothermal designs. Information may have been submitted previously. BGC has seen 2005 and 2006 investigation. Does BGC have Annexs to GN submission? Dillon to review what reports should have been submitted to NWB from GN (provide list) . Confirm what information was distributed for review in May. Confirm that all inforamtion has been reviewed by NWB consultants?	
				qualitative and quantitative effects of the use of waters or the deposit of waste (i.e. treated sewage effluent) on the drainage basin where the use is to be undertaken … and the anticipated impact of the use or deposit on other users.			no action	see resolution to AE issue p. 21, Section 6.3 (line 15)	Dillon confirmed that wetland and waterfall is considered receiving environment, not part of treatment system.
				report should go further in providing the Board with more information regarding the system's treatment capability, in the removal or reduction in nutrients, additional treatment capability of P Lake, the downstream wetlands and drainage course to Telik Inlet as well as the possible impact on fish and the environment in Telik Inlet to satisfy the applicant's responsibilities to meet this requirement of the Nunavut Waters and Nunavut Surface Rights Tribunal Act.			There are no available models that have been calibrated to the environment in this community. We have provided the best available assessment based on know information.	see resolution to AE issue p. 21, Section 6.3 (line 15)	
				There is no mention in the report of the effects of winter temperatures on the operation of the lagoon system – is the 0.5 m allowance for sludge enough depth to prevent the lagoon from freezing to the bottom once it is discharged to that elevation in the fall ? If not it will freeze to the bottom and result in sheet flow freezing solid as sewage is discharged from the truck down the discharge flume. In the spring then the entire lagoon could be frozen and the possible impact on the system's treatment processes and capability should be further examined.			There are no available models that have been calibrated to the environment in this community. We have provided the best available assessment based on know information.	see resolution to AE issue on pg 12 (line 13). Dillon confirms that lagoon effluent calculation recognizes that lagoon will freeze to bottom over winter.	

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				p.25, Section 11 Assessment of the Requirements of the Nunavut Water Board; we do not believe the applicant through this report has fully investigated the qualitative and quantitative effects of the deposit of this waste on the P Lake basin, or more importantly, the Telik Inlet environment. Further not all of the possible adverse impacts of this potential effluent release have been fully identified or investigated.			There are no available models that have been calibrated to the environment in this community. We have provided the best available assessment based on know information.	see resolution to AE issue p. 21, Section 6.3 (line 15)
Talik under P-Lake			The proponent should provide confirmation the presence of a through talik under P-lake that could result in contamination of groundwater and facilitate the transport of contaminants. If a through talik is present, EC recommends that the bottom of the lagoon be lined with an impermeable liner to prevent contamination of the groundwater. Movement of sewage through ground water is not to be used as a dilution factor for treatment.				See geotechnical report	no issues brought to table by AE or BGC, will be addressing in response for P.H.
Technical Specifications					3.3 (1) The specification do not seem to be properly updated: [ ] The Board must be satisfied that this supporting document to the water license application reflects the current plans.		No action	Dillon confirmed that specs have not changed and cannot change because the specs are now part of a signed contract. Documents are current.
					3.3(2) What is the revised construction schedule?		Not related tot eh licencing process.	Dillon confirmed completion by August 1, 2007
	The proponent should state whether berm liners will extend into non-fractured bedrock so as to reduce the likelihood of subsurface water flow beyond the sewage lagoon footprint.			Has the requirement for a full liner across the entire bottom and sides of the pond to fully contain the treated effluent and achieve the desired level of treatment been examined and investigated ?	3.3(4) In section 02072 "Geotextiles":		See goetechnical report. The use of a full liner has been investigated, but the use of a lined berm was selected.	Dillon confirmed that full liner is cost prohibitive.
					Part 1.3.1 define "GCL";			Dillon confimed GCL is Geosythetic Clay liner
					Part 2.1.1, 2.1.2 and 2.1.6, and Tables 1523-3-1 and 1523-3-2 were not found.			Dillon to provide shop drawings. Table numbers may have changed.
					Part 3.1.10 seems to be written generically. The Drawings do not show a clay liner, a granular sub-liner sampler blanket or a geomembrane. The term "geosynthetic clay liner" is introduced. If this means "GCL" then it is in conflict with the drawings , which show "Granular Clay Liner"		The term GCL has been disucsussed in many comments. The liner to be used is Bentomat ST Geosynthetic Caly Liner, as supplied by CETCO lining Technologies.	See proposed action by GN. Resolved.
					3.3(5) Section 02315, "Excavating, Trenching and Backfilling", Part 1.3.4, unsuitable materials should include massive ice lenses.		Agreed	resolved above.
					3.3(6) Section 02316, "rock Removal":		No action	
	The proponent should state which aggregate borrow sources it intends to exploit for the sewage lagoon's		Any stockpiled material should be stored above the high water mark of any water body and in		Part 1,2,1 , not sure what circumstances would warrant a minimum rock excavation of "50mm"		No action	resolved above. Clarification provided.
					Part 3.2, the drawings do not distinguish between soil and rock, but show excavated slopes (i.e. liner trench) vertical, assuming rock conditions. There is no guidance with respect to excavated slopes in soil.		A geotechnical engineer will be on site to direct the contrctor during excavation.	Dillon confirmed that there is no guidance with respect to slopes and soil. See proposed action by GN
					3.3(7) Section 02661, "Sewage Storage Lagoons";			BGC, confirm, no issue remains.
					Part 2, in several locations there is reference to a rip rap specification. There is no Section 02371 [ ] or Section 02454 - Rip Rap.		Material selected on site by engineer.	Dillon confirmed that Riprap being used on site is being inspected on site as agreed to by contractor and engineer. Using quarry blast rock from island. Dillon agrees to provide as built details (likely not available before final hearing)
	The proponent should provide justification that its frozen core dyke concept is realistic. Furthermore, the proponent should explain whether a low-permeability soil cut-off wall designed for unfrozen performance will be established within the dyke and if or if not, why?				Part 3.3.2, indicates that dike is to be constructed in the summer in unfrozen conditions. There is no statement regarding the foundation condition, although summer construction would indicate that it too would not necessarily be frozen. Based on these specifications, the berms are not being constructed as a frozen dam. As such the GCL is the primary liner. This is not the normal application of a GCL. The role of a GCL is to act as a secondary liner as would have been the case if the berm was designed and constructed as a frozen dam. A HDPE liner is considered to be a primary liner and should be backed up with a GCL for secondary containment.		The use of a GCL as a primary liner is common practice in both northern and soutern Canada for lagoons.	refer to resolution to BGC issue 3.1 (5) (line 8). Dillon to rerun geothermal analysis to reflect what is being built and materials being used. Demonstrate containment through freeezing.

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					Part 3.3.3 ASTM D 698 [application in question for the type of material] For this material, compaction specifications should be based on relative density, as per ASTM D4253 [ ] and D 4254 [ ]. The dike fill is considered to be structural fill and should be places as dense as possible, based on field trials. Compaction of granular fill should include moisture conditioning to improve density. The field trials should establish the maximum relative density achievable using the available equipment.		Proctor values are being used along with on site nuclear densometer testing to control berm construction.	Dillon confirmed that fill has sufficient fines to meet spec. Dillon will provide construction records for fill material. Resolved.
					Part 3.5 Flexible Lining - assume this is the same as GCL. Terminology for the liner should be consistent.		See above	no action needed. Dillon confirmed that flexible lining is GCL.
					Part 3.5.1 requires that a layer of granular material in unfrozen condition be placed on the bottom and sides of the lagoon as indicated. Where is this detailed indicated? Normally there should be a layer of bedding sand on either side of the GCL. This is not shown. Note that the liner is shown being placed on a 1:1 slope on Drawing 111. This slope appears too steep to safely work on and to carry out the installation procedures as specified and would also be too steep for placing any of the bedding material that has been omitted from the drawings, but alluded to in the specification (part 3.1.10). Compaction of the cover layer on a 1:1 slope would be difficult. Dillon should confirm if placing the liner on a 1:1 slope is in compliance with the manufacturer's specifications. [ ] Dillon should present a stability analysis to confirm that the proposed liner configuration is stable.		AMEC provided the review of the liner installation.	Dillon confirmed that sand bedding is being provided from site gravel source at 300mm thickness. AMEC to peform stability analysis on dyke at 1:1 GCL slope under thawed conditions. Ensure design meets GCL manufacturer specifications. Ensure design meets safety standard for slopes.
					Part 3.5.9 indicates that the liner sheets are to be cut to fit accurately around inlets, outlets, sleeves, concrete structures and other projections through the lining. There are no further details provided in either the specification or the drawings with respect to this critical component of the lagoon retention system.		Will provide response.	Dillon will provide record drawings and contractor procedures
					Part 3.7 Leakage Testing. This section is completely inadequate for the purpose intended and poorly conceived. The purpose of the lagoon is to retain water in order for the sewage to be treated. There is no way that the method given in the specification will yield any defensible data to determine that a leak exists or to conclusively direct the contractor to undertake repairs at no cost to the owner.		agreed - no leakage testing will be completed.	resolved by stated action. Test in that is in spec, is not what will be done. No in-situ hydraulic testing will be completed.
					Some of the major concerns with respect to the methodology provided are as follows: **[refer to page 7 of the submission from BGC]**			resolved as above (line 40) Part 3.7.
Drawings	INAC also recommends that the NWB require the applicant to file final as-built designs that are stamped, signed, and dated by a qualified professional, prior to the lagoon's start-up operation date.				BGC was provided copies of drawings 101, 109, 111, and 112 to review. These copies were unstamped-presumably originals on file with the Board are stamped copies. If not, they should be.	NWB has stamped/sealed drawings "issued for tender March 2006"	No action	resolved
				the access road, should be regulated as it is a key component to the success of the proposed sewage collection and treatment system and should be properly engineered and constructed under license terms and conditions.	It is assumed that other drawing pertain to the access road and were not included in the present submission. The Board should however be satisfied with the details and the as-built information with respect to the road, for completeness, in order to issue a water license for the entire facility.		No action	Access Road is only an NWB issue if stream crossings are involved or road causes impacts to waterbodies. INAC has indicated that the road is outside the NWB jurisdication in email dated sometime in 2005(?) NWB to locate the email and contact Dillon if unable to locate. Review road with respect to operations and maintance. Issue with AE resolved.
					Drawing 101: There is no information to show that the lateral extent of the GCL is sufficient to prevent end=run seepage around the ends of the liner at the abutments for both the east and west berms.		Liner extended past the limt of the berm by a minumum of 2.0 meters.	Dillon confirmed that GCL will extend beyod the 2m indicated if shattered rock is found. Resolved.
					Drawing 109: The north berm is constructed using Type II granular material. It is also designed to act as a surface water runoff diversion berm. There is a minor fines component in this material, however it will not act as a seepage barrier, particularly since the steepest hydraulic gradient is straight through he berm. Therefore , some seepage into the lagoon can be expected. The same problem applies to the road on the south side of the lagoon.		See note above on ditching.	See resolution to BGC issue 3.1(8) line 11

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					Drawing 111 **[Refer to submission from BGC page 8-9]**			Resolved. Dillon will submit record drawings and AMEC will rerun geothermal model on as constructed. Possible to submit before hearing but not 30 days in advance. Confirmed that excavating 2m below stripped surface of foundation. Confirmed backfilling GCL trench with sandy silt.	
								Re Detail 4: Confirmed that detail is longitidual section of abutment tie into main berm. As built details will be provided.	
								Re Detail 6: Dillon confirmed they will provide bedding and as-builts; see note under detail 6 regarding bentonite; may need to inspect HDPE outfall pipe downstream of liner; not a structural key, just to access bedding under manhole.	
								Re Detail 8: Dillon to clean up detail 8, particularly downstream toe	
								Detail 10: Dillon will issue field instruction to contractor to place geoweb on top of GCL and show on as-builts.	
Geotechnical Investigations				there is no mention in the report of any predictable thawing/settlement of the underlying permafrost, which could de-stabilize the lagoon berms/dyke, or necessary mitigation thereof. Is the underlying soil at this site thaw-stable ?	**Refer to submission from BGC Section 4/5 page 9-13**		See AMEC geothermal assessment.	Dillon confirm that site is thaw stable. BGC issues resolved by Dillon commitment to geothermal remodeling of as built conditions. Ensure what is built, is modeled.	
Water Use									
Waste Disposal									
Sewage Effluent	The proponent proposes that the new sewage lagoon's effluent have a discharge criteria of 80 mg/L biological oxygen demand, 100 mg/L total suspended solids, and 10E fecal Coliforms.	For a marine discharge of 150-600 liters per capita per day with a mixing conditions similar to a bay or fjord these standards are; BOD 120 mg/l and TSS 180 mg/l. Additionally as the proposed discharge point is close to local harvesting and recreational areas, criteria for fecal Coliform should also be applied;	Hamlet must ensure that any effluent discharged must be in compliance with Section 36(3) of the Fisheries Act.	This report is silent on whether or not the predicted quality of this effluent will not be toxic to fish in terms of nutrient reduction or removal.			No action	Dillon confirms effluent from designed lagoon will be toxic to fish. Dillon confirms that they will not be in compliance with Section 36(3) of Fisheries Act. Question is for EC.	Note: Final Hearing Issue
				Section 6 does not explain why the regulation point, or more correctly, the compliance point, is at the edge of Telik Inlet as suggested here, especially when the estimated effluent quality is for the outlet of the lagoon. If the two federal departments have agreed that effluent meeting the criteria set out in the Guidelines for the Discharge of Treated Municipal Wastewater in the Northwest Territories, 1992, is applicable to the Telik Inlet location, this should be fully referenced (who, how and when). I would suggest that effluent being discharged at this compliance point should be non-toxic to fish per the Fisheries Act (as measured by an LC50 bioassay test) and this report is silent in this regard.			This is a suggestion to the Baord - no action by GN.	Resolved. Agreed that issue is up to Board. Dillon confirms that they would like compliance point to be edge of inlet.	
				p.13, Section 5.7 Fecal Coliform Reduction; the reference for the influent fecal Coliform figure is text book and it would be beneficial to confirm this with some typical similar data from other North of 60 communities. The approach here may be considered to be too generic an application – can this be verified with data from other northern community lagoon systems ? Previously Dillon had stated that a "design standard" of 10^4 for Fecal Coliform coming out of the constructed retention lagoon and then P Lake was to be met. Is that standard still to be followed and if so what is that standard based on ?			We have provided other community data previously.	See resolution to AE issue pg 12 (line 13). Dillon confirms they are above standard for fecal coliforms ($1.5x10^4$). Dillon to include wetland in effluent calculations. Resolved.	
				p. 15, Section 5.8 TSS Reduction, 1st para.; is the reference to 85% to 95% reduction in TSS in lagoons with detention times over 180 days for single celled lagoons or multi-celled lagoons as a comparison to this proposed single celled lagoon ?			This information is based on the est Practices issued by INAC.	Dillon will verify the reference and answer question prior to the 30 day review period, before comment deadline for final hearing.	
Solid Waste									
Hazardous Waste									

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Waste Oil									
Spill Contingency Planning		DOE would like to ensure that as condition of the license an updated plan is submitted to NWB prior to commissioning of the new facility	The proponent should produce a Spill Contingency Plan which includes the new operations and infrastructure. The plan should facilitate response to spills which might occur during construction and operation of the project. The plan should include a list of available spill response equipment and the names of trained personnel who will be on-site and available in the case of a spill.				Agreed as part of the terms of the licence.	If provided as part of terms of Licence, then the condition may state "have in place prior to operation of the facility", would be good timing to have a SCP submitted prior to the hearing. (added by DH)	
Operation and Maintenance		DOE requests that submission and approval of sewage disposal plan be a condition of the license.	An updated Operations and Maintenance Manual should be submitted for approval. The O & M Plan should include removal and disposal of sewage sludge. Estimates should be made of the quantities of sludge likely to be produced, the required frequency of extraction from the lagoons; and operational procedures developed for environmentally sound removal and disposal.				Agreed as part of the terms of the licence.	See above Plan	
Abandonment and Restoration									
Monitoring	The proponent should commit to monitoring the effectiveness of its sewage lagoon's treatment process. Developing a municipal wastewater effluent quality trend analysis for these three parameters and others of interest, such as pH, ammonia nitrogen, and total phosphorus, effluent temperature, and air temperature would be a useful. By doing this, the proponent can analyze colleted data and determine whether the timing of effluent discharge is adequate.	DOE would like to see the license specify a monitoring station at the last point of effluent control. With a likely fall discharge period of approximately 60 days, samples taken for the purposes of monitoring effluent quality should be collected on the first and last day of discharge, and 30 days after the first day of discharge.	the proponent monitoring the quality of the effluent being discharged at the outlet of the wetland treatment area, sampling be completed at the outfall of the lagoon, in order to understand treatment efficiency.	p. 15, Section 5.8 TSS Reduction, last para.; no details are provided for the suggested operational sequence of a fall discharge from the lagoon, such as start and end dates, rate of discharge, monitoring of effluent water quality and discharge flow rates, maximum flow rate to prevent rapid draw-down failure of the lagoon berms, etc.			Agreed as part of the terms of the licence.	Dillon to provide concepts of O&M issues before 30 day review period	Note: NWB Licence issue. Require operations and maintenance plan as term in water licence
	The proponent should establish subsurface water quality monitoring wells down gradient of the proposed sewage lagoon to determine whether municipal wastewater effluent is seeping through the lagoon's base into the active layer, and if so, whether the quality of the subsurface water meets requirements set by the NWB.						Agreed as part of the terms of the licence.		
	The proponent should develop a detailed monitoring program for the NWB's consideration as it drafts municipal license terms and conditions. This is due to the proponent's familiarity with the project area. A monitoring program should specify sampling site locations by global positioning system coordinates, parameters to be analyzed at each sampling site, when samples are to be taken, who will collect the samples, where the samples will be sent, and a quality assurance/quality control plan for sample collection procedures.			other than the reference to a general sampling program in a proposed sampling/monitoring program found in Table 9.1, there are no specifics in the report regarding the expected degree of nutrient removal and toxicity to fish with respect to the proposed treatment and disposal system.			The proposed monitoring program was included in the submission.	resolved by proposed action. Note: all monitoring that is required by the Applicant should be included in the proposed program along with justifications for parameters and frequency. This will provide the Board some direction in the event that none of the intervening statements discuss the monitoring issue. (inserted by D.H.)	

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				p. 12, Section 7 The Impact of the Deposit of Waste; While the text states that the deposit of waste will adversely impact the water quality of P Lake, the report does not indicate how or by how much or for what parameters. And nothing is indicated for the possible impacts on the water quality of Telik Inlet. o p.23, Section 9.1; Sampling Protocol; we agree that the proposed sampling locations are appropriate, however no sampling location was identified for the compliance point located just before the effluent would enter Telik Inlet (unless the applicant is saying that water sampled at the end of the wetlands is considered to be the same water quality as that which would enter Telik Inlet). Individual effluent parameters to be monitored should include BOD, TSS, pH, Oil & Grease, dissolved oxygen, Fecal Coliforms, Total Coliforms, toxicity to fish - Biosassy Concentration (LC50), Toxic Organic Substances, Phosphorus and Ammonia (Nitrogen).			There are no available models that have been calibrated to the environment in this community. We have provided the best available assessment based on know information.	Dillon confirms that one of sampling points will be a top of water fall. Also discussed the practicality of obtaining samples and having them delivered to an lab, on time, to satisfy methodology. Very difficult.(2nd part insert by D.H.)