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October 18, 2009

Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

By Email: dts@nunavutwaterboard.org and licensing@nunavutwaterboard.org

Attention: David Hohnstein, Director Technical Services

Subject: Response to Reconciliation of Administrative Requirements of Type "A" Water Licence 1AR-POL0311

Dear Mr. Hohnstein,

Thank you for the letter dated September 1, 2009 where a number of administrative issues were identified during the review of Polaris's Water Licence submissions. Our responses to each of the items identified are provided below in the order that they were presented in your letter.

Items requiring Teck provide additional information submission

1. B-3: The 2004 Quarterly reports are not on file.
   Teck Response – At the time that the February 28, 2005 letter of direction was issued, no 2004 reporting had been submitted. The February 28th 2005 letter of direction suggested that "TCL devote its resources towards the submission of one comprehensive final report rather than several smaller ones." Subsequent to the letter of direction, all of the 2004 quarterly data was submitted combined into a single comprehensive report (requiring two 2 ½ thick binders to contain all of the information submitted) along with the information required for the Annual report.

2. B-6(iii): A translated executive summary for the 2006 annual report is not on file.
   Teck Response – A translation of the executive summary was prepared and must have been overlooked when submitting the 2006 4th Quarter and Annual Report. Attached to this letter in Attachment 1 is a copy of the translation.

3. F-1: Design Drawings (for Construction) stamped by an Engineer are not on file for the Reclamation Landfill Cover Design
   Teck Response – The Reclamation Landfill was originally started in 1997 and was actively used through until 2002 while the mine was still in operation. The landfill was covered with fill prior to the current water licence coming into effect. There was never a requirement to provide certified construction drawings for this landfill. However, the Closure Plan for Polaris (which was approved in 2003) proposed that there should be a minimum of 1.5m cover of fill over this area. As the materials placed into this landfill were benign in nature, the purpose of the fill was to prevent frost jacking rather than to

eliminate potential leachate issues. The NWB and INAC issued a letter dated June 2, 2004 responding to reports that Teck submitted and requested that the Teck should provide a report detailing the depth of cover over the landfill and the plans for long term monitoring of the site.

Teck's 2004 combined Quarterly and Annual report for Polaris indicated in Section 5.2.7 that test pitting in the Reclamation Landfill area had been undertaken to verify that the cap in this area was at least 2m thick. The test pitting had identified some areas where the cover was less than 2m thick, and as a result in 2004 additional material was excavated from the New Quarry area and used to thicken the landfill cap to obtain a minimum 2m thick cover in this area. In terms of monitoring of this location, Teck had committed to annually surveying this area during the summer to monitor whether any further subsidence was occurring. Since the annual surveys started in 2004 (and the results submitted each year in the 3rd Quarter site monitoring reports), no movement of this area has occurred.

4. H-6: The 2004 geotechnical inspection report is not on file.
   Teck's Response – There was an inspection done by a registered professional geotechnical engineer in 2004 but the report was never finalized. We received a draft of the report from the engineer but did not receive the final signed copy. The draft report submitted to us was incomplete, and did not identify any significant items related to failures of engineered structures or areas of unacceptable erosion. As we did not receive the final signed copy we are not able to issue this report. It is not possible to correct this deficiency at this time.

   However, it should be noted that INAC conducted two geotechnical inspections in 2004, one of which was the final inspection done upon completion of the reclamation program at the site. The first inspection identified some deficiencies on the construction of the Operational Landfill cap which were corrected prior to the second INAC inspection. The second inspection only identified issues that were cosmetic in nature and these have been resolved subsequently.

5. H-27(iv): Identification of whether composite or grab sample collection methods were used for each effluent sample as required by Part H items 7-9 are not on file for 2003 and 2004.
   Teck Response – They were all grab samples.

6. H-27(vi): Mass loading monitoring results for cadmium and mercury in accordance with Part H item 23 are not on file. This could be as a result of absent monitoring information for H-27(ii)
   Teck Response – Sample were analyzed for both cadmium and mercury. As the monitoring program in the Water Licence mimicked the Metal Mining Effluent Program, the data was reported using the format developed for the MMER program. This format did not include the reporting of loading for cadmium and mercury and this information was overlooked. The missing loading calculations have been completed and are attached in Attachment 2 of this letter.

7. H-27(vii): In 2007, acute lethality was observed in Daphnia Magna. Clarification is required regarding subsequent effluent characterization monitoring requirements in accordance with Part H item 14(i)

   Teck Response – The September 6, 2007 monthly effluent characterization included both a Rainbow Trout Bioassay LC50 test and a Daphnia Magna Bioassay LC50 test. The test results for the Rainbow trout determined that the effluent was acutely non-lethal (96 hr LC50 v/v (%):

>100%). However, the test for the Daphnia Magna determined the effluent was lethal (48 hr LC50: 86.6%) for the Daphnia Magna.

The Water Licence in Part H 12 requires an "Acute Lethality Test" to be conducted monthly on the effluent. If the effluent is determined to be acutely lethal, then Part H 14 requires monitoring frequency to be altered to comply with Part H 14(i) of the Water Licence.

*Referring to Part 2 Definitions of the Water Licence; ""**Acutely lethal effluent"** means effluent as defined in the Metal Mining Effluent Regulations SOR/2002-222 dated June 6, 2002;". Referring to the MMER regulations:*

> *"Acute Lethality Test means the test to determine the acute lethality of effluent to rainbow trout as set out in Reference Method EPS1/RM/13."*
>
> *"Acute Lethal Effluent means an effluent at 100% concentration that kills more than 50% of rainbow trout subjected to it over a 96-hour period when testing in accordance with the acute lethality test."*

As the September 6th tests passed the rainbow trout LC50 test, the effluent by definition is not acutely lethal. Therefore there was no additional testing required under Part H 14(i) of the Water Licence regardless of the results of the Daphnia Magna test.

Teck notes in your letter, identification of the items that would need to be considered for an amendment to our site monitoring requirements.

If there are any further requests for information related to the above correspondence, I would be happy to respond to such requests.

Yours truly,

Bruce Donald
Reclamation Manager

Attachments: 2

Cc: A. Cull (INAC)

ATTACHMENT 1

INUKTITUT TRANSLATION

2006 3RD QUARTER AND ANNUAL REPORT

ᑭᓯᓂᒃ ᐃᓗᓕᖅᑕᖏᓐᓄᑦ ᑎᑎᕋᓱᒪᔪᑦ ᒪᓕᒐᖅᑎ ᐅᓪᓗᕋᐅᓕᖅᐸᒥ
2006ᒥ ᑎᕋᒪᑦᓕᑦᓄᑎᒃ ᑎᕋᒪᐃᓕᖅᑕᖏᓐᓇᓂᑦ ᐅᓂᒃᓕᐊᖅ ᐊᕐᔪᓕᒪᕐᓗᓐ

ᒪᒃᐱᕐᔪᖅ

1. ᑭᓯᒧᒪᖏᑦ…… **1**

2. **2006ᒥ ᑎᕋᒪᖏᓄ ᑎᕋᒪᐃᓕᖅᑕᖏᓐᓇᓂᑦ ᐅᓂᒃᓕᐊᖅ**…… **1**

2.1. ᖃᓄᐃᔨᓂᖅᐸᓂᓐᓄ ᐅᑎᑎᑕᐅᓂᖏᓄ ᐅᓂᒃᖏᖓ …… **1**

2.2. ᓄᓇᖏᓂ ᐅᐊᓯᓂᖅ …… **1**
2.2.1. ᓄᓇᐃ ᖃᐅᔨᕕᖏᑦᑕᐅᓪᓚᑦ ᖃᓄᐃᔨᓕᒪᖏᓄ …… **1**
2.2.2. ᐃᒪᐅᑦ ᐱᐅᓂᖏᓄ ᐅᐊᓯᔾᔨᐅᓂᖏᖓ …… **1**
2.2.3. ᐊᐢᑎᒧᑦ ᓯᓂᐅᑎᐅᓪᓚᑦ ᐅᐊᓯᔾᔨᐅᓂᖓᓕᑦ …… **1**

3. **2006ᒥ ᐊᕐᔪᓕᒫᔭᑎᖏᓄ ᐅᓂᒃᖏᖓ**…… **1**

3.1. ᐊᖏᕐᕕᐅᓯᒪᖓᑐᑦ ᑯᐱᑎᑎᓂᐅᓪᓚᑦ …… **1**

3.2. ᖃᓄᐃᓕᖅᖏᓕᒪᖏᓄ ᐅᓂᒃᑦ ᖃᐅᔨᕕᑕᐅᖃᕐᓯᒪᔪᑦ ᕿᕐᓇᒍᑕᐅᖃᕐᑐᓗ…… **1**

3.3. ᓯᐅᓕᕐᑎᓂᖏᓐᓇᑦ ᓇᐃᓕᓕᐊᕐᓯᒪᔪᑦ ᐅᓂᒃᑦ ᐃᓄᒃᑎᑐᓕᑎᑕᐅᓯᒪᔪᑦ…… **2**

3.4. ᓇᐃᓕᓕᐊᕐᓯᒪᔪᑦ ᒪᑐᓂᖏᓄ ᐊᒪᓗ/ᐅᓪᓗᓂᒃᑦ ᖃᓄᐃᑐᓂᕆᓂᖏᓄ ᐅᑎᑎᑕᐅᓇᓯᓂᖏᓄ …… **2**

3.5. ᖃᓄᐃᑐᓕᖅᑎᑦ ᖃᓄᐃᑐᓂᖏᓄ ᐅᑎᑎᑕᐅᓇᓯᓂᖏᓄ ᐊᒪᓗ ᐅᐊᓯᔾᔨᐅᓂᐅᓂᒃ ᐊᑭᖏᑦ……... **2**

3.6. ᐃᓄᓕᒫᑦ ᐊᐱᕐᓯᕐᕕᐅᓂᖓᓕᑦ/ᐃᓕᐅᑎᑕᐅᓂᖓᓕᑦ…… **2**

3.7. ᐱᓕᓚᐊᖏᔪᓕᓕᕐᑐᑦ ᐱᔨᑎᒋᑦ ᖃᓄᐃᔨᓕᒪᖏᓂᒪᑦ ᐊᑐᕐᕕᐅᓯᒪᔪᑦ ᐅᓪᓗᓂᒃᑦ ᐅᓂᒃᖏᓕᐊᒥᑦ …… **2**

3.8. ᑯᐅᑐᖅ ᐊᒪᓗ ᐃᒪᐅᑦ ᐱᐅᓂᖏᓄ ᖃᐅᔨᕕᑕᐅᓂᓚᓕᐅᕐᑕᖓᓕᑦ …… **3**
3.8.1. ᖃᓄᐃ ᐊᖏᕈᑎᑎᓕᒥ ᑕᓚᐅᖏᖓᑐᑐᒥ ᐃᒪᒥᓵ ᒥᓗᐊᕐᓯᒪᒪᖏᓄ ᓯᐅᐅᖏᓐᓇᑦ ᑕᓯᖏᓂᓕᑦ. **3**
3.8.2. ᑭᐊᖓ ᑕᓯᖏᓄ ᐃᒪᖏᓄ ᐃᒪᖃᓂᖏᓄ ᐅᐊᓯᔾᔨᐅᓂᖏᓄ…… **3**
3.8.3. ᑭᐊᖓ ᑕᓯᖏᓄ ᑯᓂᖏᓄ ᐅᐊᓯᔾᔨᐅᓂᖏᓄ …… **4**

3.9. ᐅᓂᐅᐅᓯᐅᔪᑦ ᐃᒪᐅᑦ ᐊᑐᕐᑕᐅᓂᖏᓄ ᐅᑐᓗᓂᒃ ᒪᓐᓗᑦ ᐃᓕᓴᐅᐃᐅᓯᒪᔪᑦ … **4**

3.10. ᐅᓐᓯᓴᓚᐅᐅᓯᒪᔪᑦ ᐅᑭᓯᓇᓯᑎᓯᒪᔪᓂᑦ ᐅᐊᓯᓂᐅᔪᓂᓐᓄ…… **4**

ᐃᓕᒋᐊᕐᑎᐅᖅ

ᐃᓕᒋᐊᕐᑕ 1 ᓯᕗᓪᓕᓄᖅᓴᖅ ᓇᐃᓕᒋᐊᖏᓪᓚᓴᖅ ᐃᓄᑐᐃᓕᑎᑕᐅᓯᓚᓴᖅ

ᐃᓕᒋᐊᕐᑕ 2 ᑎᑎᖅᐃ ᐊᐸᑎᓕᓗᓵᔨᔪᓕᑦ
- ᔪᓚᐃ 27, 2006Γ ᐱᔪᑎᓕᑲ ᒪᕐᓕᕐᒥΓ 2005Γ ᕿᐃᕐᖏᑦᓯᒪᑦ ᐅᓴᕐᑕᖏᓕᒪᑦ ᔪᑐᒪᖏᒪ ᐊᒪ ᐊᐸᑎᒪᑦ ᓯᓕᖏᑕᐅᓕᖅᑕᒃ ᐅᐊᓯᔾᔨᐅᓕᖅᑕᒃ
- ᓯᑎᐱᓗ 15, 2006Γ ᐱᔪᑎᓕᑲ ᒪᕐᓕᕐᒥΓ ᐊᐸᑎᒪᑦ ᓯᓕᐅᑎᐅᒪᑦ ᐅᐊᓯᔾᔨᐅᓕᖅᑕᒃᑦ ᐊᒪᓗ ᑐᑭᓯᓇᓯᔪᒃ ᐅᓕᖅᓴᑦ ᖃᒥᕐᔾᔨᐅᓕᖅᑕᒃ

ᐃᓕᒋᐊᕐᑕ 3 2006Γ ᖃᓄᐃᓕᐅᒪᖏᓐᓂᑦ ᐅᓕᖅᓴᖅ ᐅᑎᑎᑕᐅᓇᓯᓕᖅᑕᒃᑦ ᖃᓄᐃᑐᓕᔪᓕᖅᑕᒃᑦ ᐅᐊᓯᓕᐅᓗ ᖃᓯᕐᒪᖏᓐᓂᑦ

ᐃᓕᒋᐊᕐᑕ 4 ᒥᐊᒃ ᑕᓯᐅᑦ ᐃᒪᖅᓴ ᖃᓄᐃᑎᐅᓕᒪᖏᓐᓂᑦ ᐅᐊᓯᔾᔨᐅᓕᖅᑕᒃᑦ ᑎᑎᕐᓯᒪᔪᕐᔪᑎᓕᑦ

ᐃᓕᒋᐊᕐᑕ 5 2006Γ ᐊᕐᔪᑕᒧᑦᑭᑎᑦ ᐅᓕᖅᓴᖅ ᑭᖑᓕᓵᖅ ᔪᐃᑎᑕᐅᓕᖅᑕᒃᑦ ᐃᒪᐅᑦ ᖃᓄᐃᑎᐅᒪᖏᓐᓂᑦ ᐅᐊᓯᓕᖅ

ᐃᓕᒋᐊᕐᑕ 6 ᐋᐅᖃᑎᒋᓕ ᐊᐅᖃᑎᒋᓗᒋᑦ ᐊᐸᑎᓕᓗᓵᔨᔪᑦ ᑲᓇᑕᒥ ᑐᓯᕐᓯᒪᓕᖅᑕᒃ ᐃᑲᔪᕐᑐᐅᐸᒪᓗᑎᑦ ᒥᑭᓕᒋᐊᕐᔪᓗᒍ ᐃᒪᐅᑦ ᐱᐅᓕᖅᑕᒃᑦ ᐅᐊᓯᔾᔨᐅᓕᖅᑕᒃᑦ ᒪᓕᑕᐅᔾᓚᐊᖃᓕᖅᓓᑦ ᒪᐅᓕᖅᑕᒥ

ᐃᓕᒋᐊᕐᑕ 7 ᖃᓚᑕᐅᔾᔨᔪᑦ ᑎᑎᕐᑕᐅᔨᓇᓐᑐᑦ ᐊᐸᖏᑦ ᐊᑐᐃᓇᐅᔪᑦ ᖃᓄᑕᕐᒥᑐᑦ

1. ᑭᓯᒧᒪᓂᖅᑐᑦ

ᒪᑕᕐᑭᒥ ᐅᓴᖅᓯᐅᖅᓱᒃ ᓄᖅᑯᐅᓯᒪᔪᖅ ᓯᑎᐱᓗᒥ 2002ᖓᔪᑎᓗᔪᒍ. ᒪᑐᖅᑕᓯᐊᖅᑎᓗᔪᒍ ᐅᓴᖅᓯᐅᖅᓱᒃ, ᖃᓄᐃᑐᓂᓱᓂᖅᓄᓄᑦ ᐅᑎᑎᑕᐅᓇᓯᓂᖅᓄᑦ ᑲᖏᓯᑯᐅᓯᒪᔪᖅ ᒪᑯᓗᑦ ᐊᖏᓯᑕᐅᓯᒪᔪ ᑕᐃᓴᐅᓗᓂ ᐃᔪᑎᓇᓂ ᖃᓄᐃᑐᓂᓱᓂᖅᓄᓄᓐᓂᓗᓗ ᐅᑎᑎᑕᐅᓂᒧᑦ ᐅᕙᓗᖓᐃᓴᕐᑎᑦ ᐊᖏᕐᑕᐅᓯᒪᓗᓂ ᓄᑎᒪᓴᖅᓯᓂᓐᓂᑦ ᐊᒪᓗ ᐃᓄᓕᓇᓴᐃᖅᑐᓂ. ᐅᕙᓗᖓᐃᓴᐅᖅᑎᑦ ᐊᒪᓗ ᐃᓄᓕᓇᓴᐃᖅᑐᓂ ᐃᒪᓕᖅᑐᑦ ᐊᒪᓗ ᐅᐊᓯᓂᒧᑦ ᐱᕙᓇᐅᑎᑦ ᐅᑦᖃᓯᒪᒃᑯᑦ ᐱᓕᕆᔨᒃᑯᑦ ᐊᒪᓗ ᐅᐊᓯᓂᒧᑦ ᐱᓕᕆᔨᒃᑯᑦ ᑕᒪᐃᓂ ᑎᒪᒪᐃᓕᕆᔨᖓᓂᒃᑯᑦ ᐊᒪᓗ ᐊᖏᔪᒪᓕᐊᑎᓂᓐ. ᑕᓚ ᓯᓕᓗᓂ ᑎᑎᖃᓯᒪᔪᖅ ᐱᑕᖃᓐᓄᑦ ᑕᒪᐃᓂ 2006ᒥ ᑎᒪᒪᖓᓂ ᑎᒪᒪᐃᓕᕆᔨᖓᓂᐅᖅ ᐅᓂᒃᖓᖓ ᐊᒪᓗ 2006ᒥ ᐊᖏᔪᒪᓕᐊᑎᖓᑕ ᐅᓂᒃᖓᖓ ᒪᑕᕐᑭᐅᖅ ᐅᓴᖅᓯᐅᖅᐳᓕᓂᓂᐊ ᐱᓪᓗᒍ.

2. 2006ᒥ ᑎᒪᒪᖓᑕ ᑎᒪᒪᐃᓕᕆᔨᖓᓂᐅᖅ ᐅᓂᒃᑲᓇᖅ

2.1. ᖃᓄᐃᑐᓂᑐᖃᓕᓂᖓᓄᓇᓂᓄ ᐅᑎᑎᑕᐅᓂᖓᓂᑕ ᐅᓂᒃᖓᖓ

ᑕᕐᓂ ᑎᒪᒪᖓᓂ ᑎᒪᒪᐃᓕᕆᔨᖓᓂᐅᖅ 2006ᖓᔪᑎᓗᔪᒍ, ᒪᑕᕐᑭᒥ ᐅᓴᖅᓯᐅᖅᓱᒃ ᓯᓂ ᐃᓄᖃᓕᐅᕐᕈᑐᖅ ᐃᖃᓄᐃᓕᖅᑎᑎᑦ. ᖃᓄᐃᑐᓂᖃᓕᓂᖓᓄᓇᓂᓄ ᐅᑎᑎᑕᐅᓇᓯᓂᖓᓄᑦ ᑲᓇᓯᒪᔪᖅᓄᑦ.

2.2. ᓄᓇᖓᓂ ᐅᐊᓯᓂᖅ

ᑕᕐᓂ ᑎᒪᒪᖓᓂ ᑎᒪᒪᐃᓕᕆᔨᖓᓂᐅᖅ 2006ᖓᔪᑎᓗᔪᒍ, ᒪᑕᕐᑭᒥ ᐅᓴᖅᓯᐅᖅᓱᒃ ᓯᓂ ᐃᓄᖃᓕᐅᕐᕈᑐᖅ ᐃᖃᓄᐃᓕᖅᑎᑎᑦ ᐊᒪᓗ ᑕᐃᒪᐃᓂᖓᓄᓇᓂᓄ ᐅᐊᓯᓂᖅ ᑲᓇᓯᒪᔪᖅᓄᑦ ᐃᒪᐃᓗ ᓴᖅᑭᖅᓴᖅᑐᑦ ᐅᐊᖅᑐᓕᕐᕈᒪᒃᑯᑦ. ᑕᐃᒪᐃᓂᖓᓄᓇᓂᓄ ᐊᑐᑐᑦ ᐃᒪᓕᖅᑎᑦ ᖃᐅᔨᓴᕐᓂᖓᓄᓇᓂᓄ ᐃᒪᐃᓗ ᓴᖅᑭᖅᓴᖅᑐᑦ ᐃᒪᓕᖅᑎᑦ ᖃᐅᔨᓴᕐᓂᖓᓄᓇᓂᓄ ᐊᑐ

- ᓴᓗᒪᖏᐃᓚᐅᐅᑐᔪᑦ ᑕᐃᓐᓴᓪᒥᖅ ᒪᖏᓗᓂᓂᓕᓄᑦ ᑕᖅᓭᒪᖅᓄᓂ ᔨᓚᐃ. ᓂᓪ ᑲᔨᓴᑎᓴᓂᐊᖏᑐᔪᑦ ᑕᒪᑐᒥᖅ ᓴᓗᒪᓴᐃᕈᓚᐅᓂᖏᑐᔪᑦ ᐊᖏᔪᑕᒪᑦ ᐃᖅᓱᐃᓴᖏᑐᖅᓯᑦ ᑕᐃᑲᑎᓂᓕᓄᑦ.
- ᑕᐃᓂᐊ ᓇᓗᓀᐃᑕᐅᓇᑕᐅᓪᒪᔨᓴᑦ ᓴᑐᖏᔨᓕᐊᓂᖅᓯᓂᑦ 2005ᒥ ᐊᖏᔪᑕᒪᑦ ᐅᓴᖏᓕᓇᓂᒧᑦ ᖃᐅᔨᖏᑎᐅᖃᓕᖏᑐᑦ ᐊᖏᑕᐅᖃᓕᖏᑐᑦ ᐊᖏᑕᐅᓕᐅᑐᑦ ᑕᐃᒪᐃᓂᐊᓂᖏᓕᐅᓪᒪᓚᑕ. ᐊᒪᓗᓂᓄᓂ ᐊᓕᖏᑐᑦ ᓄᑦᑕ ᓴᑐᖏᑐᑦ ᓇᓗᓀᐃᑕᐅᓇᑕᐅᒥᔨᓴᑦ ᔨᓕᐃ 2006ᖃᐅᑎᓗᔪ ᐊᒪᓗ ᐊᖏᑕᐊᖏᑕᐅᓗᑎᓄᑦ ᐱᐅᓇᑕᐅᓇᑕᐅᖏᑐᑦ.
- ᔨᓕᐃᖃᐅᑎᓗᔪ ᑕᐃᓂᐊ ᓴᓂ ᐊᖏᑕᐅᓕᓪᒪᓇᐅᖏᑐᑐᓄᑦ ᐅᓇᖏᓂᖃᓚᓇᓗᓄᓂᑦ ᖃᐅᐅᓴᐊᑎᓄᑦ ᐊᖏᑕᐅᓇᑕᐅᖏᑐᑦ ᐊᑐᖏᑕᐅᔨᒥ ᒪᖏᓗᓂᓄᓂᑦ ᐃᓕᓴᐅᓗᑎᒃ. ᑕᒪᖏᒥᓇᓱᓄᑦ ᖃᐅᐅᓴᐊᑎᓄᑦ ᓂᓪᓕᓇᖏᓂᖃᓚᓇᓗᓄᓂᑦ ᐊᖏᑎᐊᖏᑕᐅᓇᑕᐅᖏᑐᑦ ᓴᓂᑎᐊᖏᓂᖅᓴᓂᒃ ᑎᑎᖃᐅᓴᖏᓂᖃᓚᓇᓗᓄᓂᑦ ᐊᖏᑕᐅᓇᑕᐅᖏᑐᑦ ᐊᑐᖏᑕᐅᓇᑕᐅᖏᑐᑦ ᐊᖏᑎᐊᖏᑕᐅᓇᑕᐅᖏᑐᑦ ᐊᖏᑕᐅᓇᑕᐅᖏᑐᑦ ᐊᖏᑎᐊᖏᑕᐅᓇᑕᐅᖏᑐᑦ

ᐅᐊᓯᓂᖅᑎᑦ ᐅᓂᒃᓕᐅᖅᑎᑐᓕᕐᓂ. ᐃᓕᓴᐊᕐᓂᑦ 4 ᐃᓗᓕᖅᑐᒃ ᑕᖅᓯᓯᓕᕐᓂᑦ ᓇᓗᓇᐃᔪᑦᑕᓂᑦ 2002ᒥᓂᑦ ᐊᑦᓯ 2006 ᑎᑭᓗᒍ ᖃᓄᐃᙱᓕᐊᓂᐊᕐᓂᖅ. ᑐᓴᕈᑎᓗᐊᑕᐃᑦ ᑕᖅᓯᓯᓕᕐᓂᑦ ᐃᓕᐃᑐᐊᑦ:

- ᖃᓄᑎᒋ ᓴᕆᔨᖅᓴᖅᑕᖃᓕᖓᓂᑦ ᑭᐊᕈ ᑕᓯᖓᓂᑕ ᐃᓕᖓ ᑕᓂ ᓴᕆᔨᖅᖃᓂᖓ ᖃᐅᔨᖅᐅᔪᓕᓗᐊᑕᑐᖅ. ᓴᕆᔨᖅᓴᖅ ᓯᖃᐃᑐᓗᐊᖅᑎᑦ ᒥᑭᓪᓚᕐᐊᖅᓇᓪᓕᒫᑦᑐᖅ
- ᓇᓗᓇᐃᔪᑦᑕᖓ ᖃᓄᑎᒋ ᑕᓗᐅᖃᑎᒌᖅᓂᑦ ᐃᓕᖅ (ᑕᓇ ᓇᓗᓇᐃᓯᔪᖅ ᖃᓄᑎᒋ ᐃᑎᑎᒌᖅᓂᑦ) ᓇᓗᓇᐃᓯᔪᖅ ᑕᓯᖅᑦ ᓯᓂᐊᔪᐊᓗᖅᑐᖅ (ᐅᖃᐅᓯᐅᓪᓚᐅᓯᒪᒪᑦ ᖃᖓ ᐃᓕᐅᓂᐅᓗᓂ ᐃᖃᖓ ᑕᓗᐅᖓᓂᐅᓗᓂ ᑕᐃᓕᐃᓪᓚᓂᐊᓂᕆᑕᐅᓪᓚᐅᓯᒪᒪᑦ)
- ᐊᐅᑎᖅᑐᓂᖅ ᐱᑕᖃᖅᑐᖅ ᑕᑯᐊ ᖃᐅᐅᔨᐅᔪᓂᑦ ᑕᓴᓂ ᐅᐊᓯᐊᖏᓂ ᑐᑎᑦᔨᐃᐅᔪᓂ ᖃᑎᖅᓂ ᑕᓯᐅᑦ ᐊᐅᖏᓂ ᖃᐅᔨᓴᓂᐅᖃᕐᑐᖅᑐᑦ ᑐᑎᑦᔨᓴᓂᐅᔪᓂᑦ ᖃᓂᒋᔭᐅᓂ ᖃᐅᔨᓴᓂᐅᖃᕐᑐᖅᑐᑦ ᑐᑎᑦᔨᓴᓂᐅᔪᓂᑦ ᖃᓂᒋᔭᐅᓂ ᑕᐃᒪᐃᓕᓴᐅᓂᑦ ᖃᐅᔨᓴᓂᐅᔪᓂᑦ ᖃᓂᒋᔭᐅᓂ ᑕᐃᒪᐃᓕᓴᐅ

ATTACHMENT 2

MASS LOADING MONITORING RESULTS

FOR

CADMIUM AND MERCURY

2004 3rd QUARTER GARROW CREEK EFFLUENT MONITORING
SEPTEMBER, 2009 UPDATE
FOR PARAMETERS PREVIOUSLY NOT REPORTED

LOCATION - FINAL DISCHARGE POINT FROM GARROW LAKE

CONCENTRATIONS OF EFFLUENT SAMPLED WEEKLY

Sample Taken During The Week of	Date Sample Taken	Concentration (mg/L) Cadmium	Mecury	Collection Method
5-Jul-04	07-Jul-04	0.000588	0.00001	Grab
12-Jul-04	13-Jul-04	0.000332	pna[2]	Grab
19-Jul-04	20-Jul-04	*0.000109*	pna[2]	Grab
26-Jul-04	27-Jul-04	*0.000140*	0.000010	Grab
2-Aug-04	3-Aug-04	*0.000146*	0.000010	Grab
9-Aug-04	10-Aug-04	*0.000330*	0.000010	Grab
16-Aug-04	17-Aug-04	*0.000230*	0.000010	Grab
23-Aug-04	24-Aug-04	*0.000335*	0.000010	Grab
30-Aug-04	31-Aug-04	*0.000553*	pna[2]	Grab
6-Sep-04	ned[1]	ned[1]	ned[1]	ned[1]
13-Sep-04	ned[1]	ned[1]	ned[1]	ned[1]
20-Sep-04	ned[1]	ned[1]	ned[1]	ned[1]
27-Sep-04	ned[1]	ned[1]	ned[1]	ned[1]

Note [1] - "ned" refers to no effluent discharge to sample

Note [2] - "pna" refers to parameter not analyzed

Concentrations in red italics were set to the detection limit

MONTHLY MEAN CONCENTRATIONS OF SUBSTANCE IN EFFLUENT

MONTH OF	Concentration (mg/L) Cadmium	Mercury
July/04	0.000292	0.000010
August/04	0.000319	0.000010
September/04	ned[1]	ned[1]

Note [1] - "ned" refers to no effluent discharge to sample

Concentrations in red italics were set to the detection limit

MASS LOADING FOR EACH DAY SAMPLED

Sample Taken During The Week of	Date Sample Taken	Kg/day Cadmium	Kg/day Mercury	Average Daily Flow Rate (m^3/day)
5-Jul-04	07-Jul-04	0.010656	0.000181	18,122
12-Jul-04	13-Jul-04	0.124813	pna[2]	375,944
19-Jul-04	20-Jul-04	0.011170	pna[2]	102,479
26-Jul-04	27-Jul-04	0.003951	0.000282	28,218
2-Aug-04	3-Aug-04	0.003862	0.000265	26,450
9-Aug-04	10-Aug-04	0.008545	0.000259	25,894
16-Aug-04	17-Aug-04	0	0	0
23-Aug-04	24-Aug-04	0	0	0
30-Aug-04	31-Aug-04	0	0	0
6-Sep-04	ned[1]	ned[1]	ned[1]	ned[1]
13-Sep-04	ned[1]	ned[1]	ned[1]	ned[1]
20-Sep-04	ned[1]	ned[1]	ned[1]	ned[1]
27-Sep-04	ned[1]	ned[1]	ned[1]	ned[1]

Note [1] - "ned" refers to no effluent discharge to sample

Note [2] - "pna" refers to parameter not analyzed

MASS LOADING PER CALENDAR MONTH FOR EACH PART D-4 PARAMETER

CALENDAR MONTH OF	Kg/month[1] Cadmium	Kg/month[1] Mercury	Average Weekly Flow Rate[2] (m^3/week)	Total Monthly Flow Rate[3] (m^3/month)
July/04	1.1671	0.0072	131,191	4,066,913
August/04	0.0962	0.0041	10,469	324,533
September/04	0	0	0	0

Note[1] - Total Mass Loading for Calendar month calculated by multiplying the Average Daily Mass Loading for the Month x # days in the month

Note[2] - Average Weekly Flow Rate calculated by multiplying Average Daily Flow Rate x 7 days per week

Note[3] - Total Monthly Volume calculated by multiplying Average Daily Flow Rate for the month x days in month

2005 3rd QUARTER GARROW CREEK EFFLUENT MONITORING
SEPTEMBER, 2009 UPDATE
FOR PARAMETERS PREVIOUSLY NOT REPORTED

LOCATION - FINAL DISCHARGE POINT FROM GARROW LAKE

CONCENTRATIONS OF EFFLUENT SAMPLED WEEKLY

Sample Taken During The Week of	Date Sample Taken	Concentration (mg/L) Cadmium	Concentration (mg/L) Mecury	Collection Method
3-Jul-05	06-Jul-05	0.000200	0.00001	Grab
10-Jul-05	13-Jul-05	0.000064	0.000010	Grab
17-Jul-05	16-Jul-05	0.000200	0.000010	Grab
24-Jul-05	23-Jul-05	*0.000079*	0.000010	Grab
31-Jul-05	30-Jul-05	*0.000064*	0.000050	Grab
7-Aug-05	6-Aug-05	0.000200	0.000010	Grab
14-Aug-05	13-Aug-05	*0.000321*	0.000010	Grab
21-Aug-05	24-Aug-05	*0.000267*	0.000010	Grab
28-Aug-05	27-Aug-05	*0.000228*	0.000010	Grab
4-Sep-05	ned[1]	ned[1]	ned[1]	ned[1]
11-Sep-05	ned[1]	ned[1]	ned[1]	ned[1]
18-Sep-05	ned[1]	ned[1]	ned[1]	ned[1]
25-Sep-05	ned[1]	ned[1]	ned[1]	ned[1]

Note [1] - "ned" refers to no effluent discharge to sample

Note [2] - "pna" refers to parameter not analyzed

Concentrations in red italics were set to the detection limit

MONTHLY MEAN CONCENTRATIONS OF SUBSTANCE IN EFFLUENT

MONTH OF	Concentration (mg/L) Cadmium	Concentration (mg/L) Mercury
July/05	0.000121	0.000018
August/05	0.000254	0.000010
September/05	ned[1]	ned[1]

Note [1] - "ned" refers to no effluent discharge to sample

Concentrations in red italics were set to the detection limit

MASS LOADING FOR EACH DAY SAMPLED

Sample Taken During The Week of	Date Sample Taken	Kg/day Cadmium	Kg/day Mercury	Average Daily Flow Rate (m^3/day)
3-Jul-05	06-Jul-05	0.001694	0.000085	8,471
10-Jul-05	13-Jul-05	0.000233	0.000036	3,636
17-Jul-05	16-Jul-05	0.000669	0.000033	3,343
24-Jul-05	23-Jul-05	0.000430	0.000054	5,443
31-Jul-05	30-Jul-05	0.000145	0.000113	2,260
7-Aug-05	6-Aug-05	0.001349	0.000067	6,747
14-Aug-05	13-Aug-05	0.003606	0.000112	11,234
21-Aug-05	24-Aug-05	0.004732	0.000177	17,722
28-Aug-05	27-Aug-05	0.002869	0.000126	12,583
4-Sep-05	ned[1]	ned[1]	ned[1]	ned[1]
11-Sep-05	ned[1]	ned[1]	ned[1]	ned[1]
18-Sep-05	ned[1]	ned[1]	ned[1]	ned[1]
25-Sep-05	ned[1]	ned[1]	ned[1]	ned[1]

Note [1] - "ned" refers to no effluent discharge to sample

Note [2] - "pna" refers to parameter not analyzed

MASS LOADING PER CALENDAR MONTH FOR EACH PART D-4 PARAMETER

CALENDAR MONTH OF	Kg/month[1] Cadmium	Kg/month[1] Mercury	Average Weekly Flow Rate[2] (m^3/week)	Total Monthly Flow Rate[3] (m^3/month)
July/05	0.0197	0.0020	32,412	143,540
August/05	0.0973	0.0037	84,501	374,218
September/05	0	0	0	0

Note[1] - Total Mass Loading for Calendar month calculated by multiplying the Average Daily Mass Loading for the Month x # days in the month

Note[2] - Average Weekly Flow Rate calculated by multiplying Average Daily Flow Rate x 7 days per week

Note[3] - Total Monthly Volume calculated by multiplying Average Daily Flow Rate for the month x days in month

2006 3rd QUARTER GARROW CREEK EFFLUENT MONITORING
SEPTEMBER, 2009 UPDATE
FOR PARAMETERS PREVIOUSLY NOT REPORTED

LOCATION - FINAL DISCHARGE POINT FROM GARROW LAKE

CONCENTRATIONS OF EFFLUENT SAMPLED WEEKLY

Sample Taken During The Week of	Date Sample Taken	Concentration (mg/L) Cadmium	Concentration (mg/L) Mecury	Collection Method
2-Jul-06	06-Jul-06	0.000055	pna	Grab
9-Jul-06	15-Jul-06	0.000083	0.000010	Grab
16-Jul-06	21-Jul-06	0.000157	0.000010	Grab
23-Jul-06	26-Jul-06	*0.000099*	0.000010	Grab
30-Jul-06	No Sample			
6-Aug-06	11-Aug-06	0.000192	0.000010	Grab
13-Aug-06	17-Aug-06	*0.000236*	0.000010	Grab
20-Aug-06	23-Aug-06	*0.000333*	0.000010	Grab
27-Aug-06	1-Sep-06	*0.000374*	0.000010	Grab
3-Sep-06	9-Sep-06	*0.000374*	0.000010	Grab
10-Sep-06	14-Sep-06	*0.000404*	0.000010	Grab
17-Sep-06	ned[1]	ned[1]	ned[1]	ned[1]
24-Sep-06	ned[1]	ned[1]	ned[1]	ned[1]

Note [1] - "ned" refers to no effluent discharge to sample

Note [2] - "pna" refers to parameter not analyzed

Concentrations in red italics were set to the detection limit

MONTHLY MEAN CONCENTRATIONS OF SUBSTANCE IN EFFLUENT

MONTH OF	Concentration (mg/L) Cadmium	Concentration (mg/L) Mercury
July/06	0.000099	0.000010
August/06	0.000254	0.000010
September/06	0.000389	0.000010

Note [1] - "ned" refers to no effluent discharge to sample

Concentrations in red italics were set to the detection limit

MASS LOADING FOR EACH DAY SAMPLED

Sample Taken During The Week of	Date Sample Taken	Kg/day		Average Daily Flow Rate (m^3/day)
		Cadmium	Mercury	
2-Jul-06	06-Jul-06	0.000361	npa	6,566
9-Jul-06	15-Jul-06	0.000997	0.000120	12,010
16-Jul-06	21-Jul-06	0.001433	0.000091	9,129
23-Jul-06	26-Jul-06	0.001091	0.000110	11,016
30-Jul-06	No Sample			
6-Aug-06	11-Aug-06	0.002280	0.000119	11,875
13-Aug-06	17-Aug-06	0.002719	0.000115	11,521
20-Aug-06	23-Aug-06	0.002097	0.000063	6,298
27-Aug-06	1-Sep-06	0.002263	0.000061	6,052
3-Sep-06	9-Sep-06	0.001453	0.000039	3,884
10-Sep-06	14-Sep-06	0.000392	0.000010	971
17-Sep-06	ned[1]	ned[1]	ned[1]	ned[1]
24-Sep-06	ned[1]	ned[1]	ned[1]	ned[1]

Note [1] - "ned" refers to no effluent discharge to sample

Note [2] - "pna" refers to parameter not analyzed

MASS LOADING PER CALENDAR MONTH FOR EACH PART D-4 PARAMETER

CALENDAR MONTH OF	Kg/month[1]		Average Weekly Flow Rate[2] (m^3/week)	Total Monthly Flow Rate[3] (m^3/month)
	Cadmium	Mercury		
July/06	0.0301	0.0033	67,763	300,092
August/06	0.0725	0.0028	62,555	277,030
September/06	0.0286	0.0008	16,994	72,832

Note[1] - Total Mass Loading for Calendar month calculated by multiplying the Average Daily Mass Loading for the Month x # days in the month

Note[2] - Average Weekly Flow Rate calculated by multiplying Average Daily Flow Rate x 7 days per week

Note[3] - Total Monthly Volume calculated by multiplying Average Daily Flow Rate for the month x days in month

2007 3rd QUARTER GARROW CREEK EFFLUENT MONITORING
SEPTEMBER, 2009 UPDATE
FOR PARAMETERS PREVIOUSLY NOT REPORTED

LOCATION - FINAL DISCHARGE POINT FROM GARROW LAKE

CONCENTRATIONS OF EFFLUENT SAMPLED WEEKLY

Sample Taken During The Week of	Date Sample Taken	Concentration (mg/L) Cadmium	Concentration (mg/L) Mecury	Collection Method
8-Jul-07	08-Jul-07	0.000073	0.000010	Grab
12-Jul-07	12-Jul-07	0.000059	0.000010	Grab
19-Jul-07	19-Jul-07	0.000800	0.000011	Grab
26-Jul-07	26-Jul-07	*0.000168*	0.000010	Grab
1-Aug-07	1-Aug-07	*0.000253*	0.000010	Grab
9-Aug-07	9-Aug-07	0.000249	0.000010	Grab
16-Aug-07	16-Aug-07	*0.000238*	0.000010	Grab
23-Aug-07	23-Aug-07	*0.000292*	0.000010	Grab
30-Aug-07	30-Aug-07	*0.000285*	0.000011	Grab
6-Sep-07	6-Sep-07	*0.000308*	0.000010	Grab
13-Sep-07	13-Sep-07	*0.000299*	0.000034	Grab
20-Sep-07	ned[1]	ned[1]	ned[1]	ned[1]
27-Sep-07	ned[1]	ned[1]	ned[1]	ned[1]

Note [1] - "ned" refers to no effluent discharge to sample

Note [2] - "pna" refers to parameter not analyzed

Concentrations in red italics were set to the detection limit

MONTHLY MEAN CONCENTRATIONS OF SUBSTANCE IN EFFLUENT

MONTH OF	Concentration (mg/L) Cadmium	Concentration (mg/L) Mercury
July/07	0.000275	0.000010
August/07	0.000263	0.000010
September/07	0.000304	0.000022

Note [1] - "ned" refers to no effluent discharge to sample

Concentrations in red italics were set to the detection limit

MASS LOADING FOR EACH DAY SAMPLED

Sample Taken During The Week of	Date Sample Taken	Kg/day		Average Daily Flow Rate (m^3/day)
		Cadmium	Mercury	
8-Jul-07	08-Jul-07	0.000124	0.000017	1,702
12-Jul-07	12-Jul-07	0.000261	0.000044	4,424
19-Jul-07	19-Jul-07	0.005674	0.000078	7,093
26-Jul-07	26-Jul-07	0.001354	0.000081	8,061
1-Aug-07	1-Aug-07	0.001991	0.000079	7,871
9-Aug-07	9-Aug-07	0.002883	0.000116	11,578
16-Aug-07	16-Aug-07	0.003290	0.000138	13,824
23-Aug-07	23-Aug-07	0.002800	0.000096	9,590
30-Aug-07	30-Aug-07	0.001849	0.000071	6,489
6-Sep-07	6-Sep-07	0.004918	0.000160	15,967
13-Sep-07	13-Sep-07	0.007427	0.000845	24,840
20-Sep-07	ned[1]	ned[1]	ned[1]	ned[1]
27-Sep-07	ned[1]	ned[1]	ned[1]	ned[1]

Note [1] - "ned" refers to no effluent discharge to sample

Note [2] - "pna" refers to parameter not analyzed

MASS LOADING PER CALENDAR MONTH FOR EACH PART D-4 PARAMETER

CALENDAR MONTH OF	Kg/month[1]		Average Weekly Flow Rate[2] (m^3/week)	Total Monthly Flow Rate[3] (m^3/month)
	Cadmium	Mercury		
July/07	0.0575	0.0017	37,240	162,921
August/07	0.0794	0.0031	69,092	305,977
September/07	0.1913	0.0156	142,823	632,504

Note[1] - Total Mass Loading for Calendar month calculated by multiplying the Average Daily Mass Loading for the Month x # days in the month

Note[2] - Average Weekly Flow Rate calculated by multiplying Average Daily Flow Rate x 7 days per week

Note[3] - Total Monthly Volume calculated by multiplying Average Daily Flow Rate for the month x days in month

2008 3rd QUARTER GARROW CREEK EFFLUENT MONITORING
SEPTEMBER, 2009 UPDATE
FOR PARAMETERS PREVIOUSLY NOT REPORTED

LOCATION - FINAL DISCHARGE POINT FROM GARROW LAKE

CONCENTRATIONS OF EFFLUENT SAMPLED WEEKLY

Sample Taken During The Week of	Date Sample Taken	Concentration (mg/L) Cadmium	Concentration (mg/L) Mecury	Collection Method
30-Jun-08	03-Jul-08	0.000163	0.000010	Grab
7-Jul-08	10-Jul-08	0.000068	0.000010	Grab
14-Jul-08	19-Jul-08	0.000094	0.000010	Grab
21-Jul-08	24-Jul-08	*0.000141*	0.000010	Grab
28-Jul-08	31-Jul-08	*0.000199*	0.000010	Grab
4-Aug-08	7-Aug-08	0.000261	0.000010	Grab
11-Aug-08	15-Aug-08	*0.000279*	0.000010	Grab
18-Aug-08	22-Aug-08	*0.000359*	0.000010	Grab
25-Aug-08	29-Aug-08	*0.000332*	0.000010	Grab
1-Sep-08	6-Sep-08	*0.000312*	0.000010	Grab
8-Sep-08	ned[1]	ned1	ned1	ned[1]
15-Sep-08	ned[1]	ned1	ned1	ned[1]
22-Sep-08	ned[1]	ned1	ned1	ned[1]
29-Sep-08	ned1	ned1	ned1	ned1

Note [1] - "ned" refers to no effluent discharge to sample

Note [2] - "pna" refers to parameter not analyzed

Concentrations in red italics were set to the detection limit

MONTHLY MEAN CONCENTRATIONS OF SUBSTANCE IN EFFLUENT

MONTH OF	Concentration (mg/L) Cadmium	Concentration (mg/L) Mercury
July/08	0.000133	0.000010
August/08	0.000308	0.000010
September/08	0.000312	0.000010

Concentrations in red italics were set to the detection limit

MASS LOADING FOR EACH DAY SAMPLED

Sample Taken During The Week of	Date Sample Taken	Kg/day		Average Daily Flow Rate (m^3/day)
		Cadmium	Mercury	
30-Jun-08	03-Jul-08	0.000141	0.000009	868
7-Jul-08	10-Jul-08			nfd[2]
14-Jul-08	19-Jul-08	0.000378	0.000040	4,017
21-Jul-08	24-Jul-08	0.000146	0.000010	1,037
28-Jul-08	31-Jul-08			nfd[2]
4-Aug-08	7-Aug-08	0.008245	0.000316	31,590
11-Aug-08	15-Aug-08	0.001635	0.000059	5,862
18-Aug-08	22-Aug-08	0.002458	0.000068	6,847
25-Aug-08	29-Aug-08	0.003289	0.000099	9,906
1-Sep-08	6-Sep-08	0.004755	0.000152	15,240
8-Sep-08	ned[1]	ned[1]	ned[1]	ned[1]
15-Sep-08	ned[1]	ned[1]	ned[1]	ned[1]
22-Sep-08	ned[1]	ned[1]	ned[1]	ned[1]
29-Sep-08	ned1	ned1	ned1	ned1

Note [1] - "ned" refers to no effluent discharge to sample

Note [2] - "nfd" refers to no flow data

MASS LOADING PER CALENDAR MONTH FOR EACH PART D-4 PARAMETER

CALENDAR MONTH OF	Kg/month[1]		Average Weekly Flow Rate[2] (m^3/week)	Total Monthly Flow Rate[3] (m^3/month)
	Cadmium	Mercury		
July/08	0.0069	0.0006	13,818	61,194
August/08	0.1211	0.0042	84,094	372,415
September/08	0.1474	0.0047	106,680	182,880

Note[1] - Total Mass Loading for Calendar month calculated by multiplying the Average Daily Mass Loading for the Month x # days in the month

Note[2] - Average Weekly Flow Rate calculated by multiplying Average Daily Flow Rate x 7 days per week

Note[3] - Total Monthly Volume calculated by multiplying Average Daily Flow Rate for the month x days in month