

**U.S. Environmental Protection Agency
Region 10**

Response to Comments

On the Draft NPDES Permit for:

**Teck Cominco Alaska, Incorporated
DeLong Mountain Regional Transportation System Port Facility
(Red Dog Port Site)
NPDES No. AK-004064-9**

May 15, 2006

Table of Contents

- I. INTRODUCTION 3
- II. ACTIONS AND NEW INFORMATION AFTER THE PUBLIC COMMENT PERIOD 3
 - A. Updated Effluent Chemistry Data..... 3
 - B. Updated Format 3
 - C. State of Alaska Clean Water Act Section 401 Certification (Certificate of Reasonable Assurance)..... 4
- III. ENDANGERED SPECIES ACT (ESA) INFORMATION 5
- IV. COMMENTS RECEIVED ON THE DRAFT PERMIT 5
 - A. Teck Cominco Alaska, Incorporated, Comments (with the concurrence of the NANA Regional Corporation) 5
 - B. Center for Science in Public Participation (CSP²) Comments..... 21

Appendix A - Spreadsheets with Recalculation of Reasonable Potential and Water Quality-based Effluent Limits for the Final Permit

Appendix B - State of Alaska Department of Environmental Conservation Final Clean Water Act Section 401 Certification

I. INTRODUCTION

On April 26, 2005, the Environmental Protection Agency (EPA) issued a draft National Pollutant Discharge Elimination System (NPDES) permit for the Red Dog Mine Port Site, operated by Teck Cominco Alaska, Incorporated, on behalf of the Alaska Industrial Development and Export Authority (AIDEA) in support of the Red Dog lead and zinc mine. The public comment period for the draft permit extended from April 26, 2005 through May 26, 2005. Discharges include treated discharge from a membrane filtration sewage treatment facility; drinking water desalination plant backwash; and runoff from around the concentrate storage buildings, which is subject to 40 CFR Part 440 (Ore Mining and Dressing) point source categorical standards and treated in an ion exchange plant. These facilities discharge through a common diffuser to the Chukchi Sea. Permitted discharges also include stormwater runoff to tundra from industrial sites and the Delong Mountain Regional Transportation System (DMTS) that are not subject to 40 CFR Part 440 Ore Mining and Dressing Point Source Category effluent guidelines.

EPA received comments from the following:

- Teck Cominco Alaska, Incorporated, in a May 25, 2005 comment letter to Mike Gearheard of EPA from R. G. Scott, General Manager
- NANA Regional Corporation in a May 26, 2005 letter to Mike Gearheard from Marie Green, President
- Center for Science in Public Participation (CSP²) in a May 26, 2005 letter to Mike Gearheard from Amy Crook, Alaska and British Columbia Representative

Information considered by EPA in establishing final permit conditions includes public comments received as well as information from actions by other federal agencies and the State of Alaska. The EPA appreciates the comments received on the draft permit and the time and care taken by the people who reviewed the permit. In the following sections of this document, EPA summarizes the actions and the new information that influenced finalization of the permit, states verbatim the comments received during public notice, and follows up each comment with a response.

II. ACTIONS AND NEW INFORMATION AFTER THE PUBLIC COMMENT PERIOD

A. Updated Effluent Chemistry Data

Since the time that the draft permit effluent limits were calculated, Teck Cominco collected and submitted additional effluent data. ADEC added the data to the database used to calculate the mixing zones and revised the State 401 certification (see II.C. below). EPA added the data to the database used to calculate the reasonable potential for exceedance of water quality criteria and the water quality-based effluent limits (WQBELS) for the final permit. Appendix A contains updated spreadsheets describing calculations.

B. Updated Format

In the draft permit, EPA had used the format from the previous permit. Some of the comments received were on the inconsistency of the draft permit's boilerplate language with more

contemporary permits in the Region. The Region 10 template for all industrial permits, which is consistent with the Federal regulations, has been changed since the previous permit, so EPA reformatted the final permit using the new template. EPA also updated organizational and address information, as well as some wording in the standard and general conditions, but no substantive changes were made except as noted in responses to comments.

C. State of Alaska Clean Water Act Section 401 Certification (Certificate of Reasonable Assurance)

The Alaska Department of Environmental Conservation (ADEC) issued a draft Clean Water Act (CWA) 401 certification of the NPDES permit dated March 21, 2005. Based upon new information, ADEC issued a revised draft 401 certification and re-public noticed it during the period of October 10, 2005 through November 14, 2005. No further comments were received at that time. ADEC issued a final 401 certification on January 9, 2006. Appendix B includes a copy of the final certification.

ADEC placed revised mixing zones, limitations, and monitoring in the final certification, which EPA then incorporated into the final permit.

ADEC authorized a Chronic Criteria Mixing Zone with 117:1 dilution for lead, zinc, chlorine and fecal coliform contained in the discharge from the combined Outfalls 001 and 005 to the Chukchi Sea to ensure that chronic aquatic life and human health criteria are met at all times at the edge of the mixing zone. Modeling done by ADEC demonstrated that lead is the controlling parameter for the chronic criteria mixing zone size for discharges from the combined outfall. The mixing zone is defined as a rectangle 60 meters by 20 meters. The 20 meter axis of the mixing zone is directly above the diffuser (length 20 meters) and oriented perpendicular to shore. The mixing zone extends 30 meters on each side of the diffuser (the side parallel to shore is 60 meters). The mixing zone includes the vertical extent of the water column from the water surface to, but not including, the bottom sediments.

ADEC authorized an Acute Mixing Zone with 34:1 dilution for zinc and chlorine contained in the discharge to ensure that acute aquatic life criteria are met at all times at the edge of the mixing zone from the combined outfalls 001 and 005 to the Chukchi Sea. Modeling done by ADEC demonstrated that zinc is the controlling parameter for the mixing zone size from the combined outfall. The acute mixing zone is defined as a rectangle 23 meters by 20 meters. The 20 meter axis of the mixing zone is directly above the diffuser (length 20 meters) and oriented perpendicular to shore. The mixing zone extends 11.5 meters on each side of the diffuser (the side parallel to the shore is 23 meters). The mixing zone includes the vertical extent of the water column from the water surface to, but not including, the bottom sediments.

For further discussion of ADEC's authorization of mixing zones, see Response to Comment IV.B.7., below. The certified mixing zones were used to evaluate reasonable potential and to recalculate water quality-based effluent limits (WQBELS) for the final permit. Appendix A contains spreadsheets containing calculations.

ADEC also certified discharge of snowmelt and rainfall runoff from industrial sites and the DMTS to the tundra. These snowmelt and rainfall runoff discharges are stormwater discharges that are not subject to 40 CFR Part 440 Ore Mining and Dressing Point Source Category effluent guidelines. The draft permit included these discharges, but EPA made the language in the final permit more specific based on comments received (IV.A.12. and 34., and IV.B.3.).

III. ENDANGERED SPECIES ACT (ESA) INFORMATION

As discussed in the fact sheet, letters requesting current species lists and consultation were sent to the U. S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) on February 18, 2005. The Services responded, and copies of the draft permit, fact sheet and BE, which anticipated no effect on listed species, were subsequently sent to both agencies. In a letter from Ted Swem to Michael Lidgard dated May 10, 2005, the USFWS concluded that this project is not likely to adversely affect listed species and that further consultation under section 7 of the Act regarding the project is not necessary. In a letter from James Balsiger to Michael Lidgard dated May 16, 2005, NMFS agreed with EPA's conclusion that no listed species occur within the project area and that the project would have no effect on listed species. Based on information in the draft permit and attachments, NMFS also concurred with EPA's determination that reissuance of the permit will not adversely affect Essential Fish Habitat (EFH).

IV. COMMENTS RECEIVED ON THE DRAFT PERMIT

A. Teck Cominco Alaska, Incorporated, Comments (with the concurrence of the NANA Regional Corporation)

EPA received the following comments from Teck Cominco Alaska, Incorporated, on May 25, 2005, via a faxed comment letter to Mike Gearheard of the EPA from R. G. Scott, General Manager, and an email to Lisa Olson of the EPA. In a letter to Mike Gearheard dated May 26, 2005, Marie N. Greene, President of the NANA Regional Corporation, expressed the Corporation's concurrence with the comments submitted by Teck Cominco. The NANA Regional Corporation had worked with Teck in reviewing the draft NPDES permit and had contributed to the comments. The response to each comment immediately follows the comment.

1. Comment:

Page 4. Thank you for the "Summary of Permit Submittals" table. Teck Cominco Alaska Incorporated (TCAK) anticipates that this will be extremely beneficial.

Response:

Comment noted and appreciated. Please note that the table is a summary, and therefore is not all inclusive. Complete submittal requirements can be found within the conditions of the permit.

2. Comment:

Page 4. Whole Effluent Toxicity – Acute Toxicity Testing. The “Summary of Permit Submittals” states that the results of acute WET testing shall be submitted with the permit renewal application. Section VIII. E. of the fact sheet supports this statement. Conflicting to these requirements are sections III.A.2 and 4 of the draft permit, which require WET testing to be conducted by the third year following the effective date of the permit and requires reporting in the monthly DMRs and a separate “full” report. In conjunction with comment 19 below, please resolve these conflicting requirements. For the record, would EPA please provide a more detailed explanation for why WET testing is required in this draft permit and the relevance of the timing of the WET testing in the draft permit and the current permit, and how EPA used the WET data provided in the application for renewal.

Response:

Agreed. EPA has changed permit conditions III.A.1 and 4 (final permit conditions I.E.1 and 4.), the conditions requiring submittal of WET reports, to match the Summary of Submittals and the fact sheet, which require the full WET report to be submitted with the application for permit renewal, no later than 180 days before the permit’s expiration date.

WET data collected during the current permit cycle demonstrated no reasonable potential for effluent from the Red Dog Port Site outfalls 001 and 005 to exceed 0.3 TU_a at the edge of the acute mixing zone. However, EPA has required WET testing in the final permit in June, July, August, and September 2008 to ensure that the effluent continues to demonstrate no reasonable potential for criteria exceedance and to provide information for the next permit cycle. The year 2008 was chosen for WET testing as a reasonable period to check on the toxicity and to provide timely information for the next permit application. EPA uses data in the NPDES application, including WET data, to set requirements for the reissuance of the permit. If reasonable potential is demonstrated with data acquired during this permit cycle, WET limits will be placed in the subsequent permit.

3. Comment:

Page 4 and Section II.B. Ambient Monitoring Program Plan Implementation – Similar to the BMP Plan, the ambient monitoring plan should require EPA and ADEC approval. If EPA and ADEC do not respond to the plan submittal within 60 days, the plan should be deemed approved and implemented 30 days following that time.

Response:

Since the previous permit, EPA has discontinued its review and approval of plans such as ambient monitoring plans and BMP plans. EPA has removed final permit language regarding EPA approval of the ambient monitoring plan and the BMP plan. EPA has added language for ADEC approval of the ambient monitoring plan with the provision that if ADEC does not respond within 30 days of submittal, the plan shall be deemed approved.

Thirty days was chosen to agree with the requirement to implement the plan within 30 days of its submittal.

4. Comment:

Section I.A.3. – The last sentence states, “[m]onitoring for salinity shall occur at or before the point of discharge to the Chukchi Sea.” This statement does not definitively define the sampling location. Taken literally, sampling can occur anywhere from the point of discharge to the last treatment step of the STP or even possibly the desalination reject water solely. TCAK does not understand the purpose for this salinity monitoring so it is difficult to suggest the proper location for this monitoring. However, notwithstanding comment 7, TCAK suggests that the sampling location could be more narrowly defined as after the point where the desalination reject water and STP effluent combine but before the point of combination with Outfall 005.

Response:

EPA has removed the salinity monitoring requirement from the permit. See the Response to Comment 7 below.

5. Comment:

Section I.A Table 1 - It is possible that TCAK did not provide the appropriate information for EPA to accurately calculate the STP mass loading limits for TSS and BOD. The Fact Sheet states that the mass loading limits were calculated based on the average design flow rate of 12,000 gpd. However, it would seem that the mass load limits should be based on the STP’s maximum daily capacity, which is upwards of 16,000 gpd. If requested, TCAK could consult with the vendor to more precisely define the STP’s maximum daily capacity.

Response:

EPA uses the maximum monthly average design flow rate to calculate mass loading limits for STPs. Therefore, 12,000 gpd was the appropriate number.

6. Comment:

Section I.A. Table 1 - The draft permit requires monitoring for dissolved oxygen (DO) at Outfall 001. However, given the mixing zones authorized by the State, the STP effluent could have 0 mg/L DO and not significantly effect the DO concentration in the ocean at the edge of the mixing zone. Although the mixing zone dilution factor is set at a minimum size for the permitted parameters, it is more than adequate to deal with a theoretically low DO discharge. There are no other dischargers close by. The treatment system is not a conventional secondary treatment facility. There is no technology basis to monitor for dissolved oxygen in the effluent, and given the small volume of discharge from the STP, combined with dilution from the reverse osmosis reject water and Outfall 005, and the high rate of mixing and the very large volume of the receiving water, there is no potential for the

STP discharge to pose a dissolved oxygen concern to the receiving waters. TCAK requests that DO monitoring at Outfall 001 be removed as a permit requirement.

Response:

EPA has retained the requirement for DO monitoring of Outfall 001 in the final permit, as per ADEC's final 401 certification. DO monitoring frequency in the final permit is the same as the DO monitoring in EPA's general permit for STPs the size of the Red Dog Port Site STP that discharge to marine water. The general permit is titled POTW and Other Small Treatment Works Providing Secondary Treatment of Domestic Sewage and Discharging to Marine Water.

7. Comment:

Section I.A. Table 1 – TCAK does not see the need to monitor Outfall 001 for salinity. For the permit renewal including the State certification, salinity was only used in the ammonia RPA calculation. For this calculation, the salinity monitoring required in the ambient sampling program should be sufficient. Further, there are 5-years of salinity data collected with very high variability depending on whether the desalination plant and/or STP was discharging at the time the sample was collected. The salinity dependence of the ammonia criteria is more dependent on the type of receiving water (e.g. estuary, brackish, etc.) because of the large amount of dilution water at the edge of the mixing zone. Since this is a very small discharge to the ocean, the salinity at the edge of the mixing zone can be assumed to be 30 ppt or greater. TCAK requests that salinity monitoring at Outfall 001 be removed as a permit requirement.

Response:

Agreed. EPA has removed the salinity monitoring requirement from the permit.

8. Comment:

Section I.A. Table 1 – The Fact Sheet states that there was no reasonable potential to exceed water quality standards at the edge of the mixing zone for metals (cadmium, copper, lead and zinc) from Outfall 001. Generally, when the RPA from the previous permit concludes no reasonable potential, but monitoring is required and that monitoring again demonstrates no reasonable potential, EPA does not require continued monitoring in the renewed permit. Outfall 001 is just a combined discharge from a small STP and a desalination plant, neither of which are significant sources of metals to the Chukchi Sea. Currently there are 6-years of metals data (excluding copper) and there are no anticipated changes to the operation that would cause an increase in metals loading to the Outfall. Further, results for these parameters will be required for the next renewal application and TCAK is well aware of the consequences for submitting an application with a small number of sample results. To this extent, the risk is with the permittee. The issues associated with copper in the draft permit are more centered on ambient sampling of copper and there will be representative copper sampling of Outfall 001 required to submit the next permit renewal application. TCAK

requests that metals monitoring at Outfall 001 be removed as a permit requirement as it is already required to submit a permit renewal application.

Response:

EPA has retained metals monitoring requirements for Outfall 001 in the final permit due to the fact that the STP treats wastewater that contains metals, such as influent from the showers and laundry.

9. Comment:

Section I.A. Table 1 Note #2 – Notwithstanding comment 7 and in conjunction with comment 4, note #2 in Table 1 is inconsistent with Section I.A.3. and III.D. as to the location of salinity sampling.

Response:

EPA has removed the salinity monitoring requirement from the permit. See the Responses to Comments 4 and 7 above.

10. Comment:

Section I.A. Table 1 Notes – A note should be added to Table 1 and 2 or to the definition section (VII) indicating that under sampling frequency, “continuous” means uninterrupted except for brief periods of time for calibration, power failures or for unanticipated equipment repairs or maintenance.

Response:

The definition of *continuous discharge*, as referenced in Tables 1 and 2, Sample Frequencies columns, is found in the federal regulations at 40 CFR 122.2. EPA has placed the language below in the definitions section of the permit.

“Continuous discharge means a discharge which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes or other similar activities.”

11. Comment:

Section I.B.3. – Thank you for including a statement that sampling is only required during periods of discharge.

Response:

Comment appreciated. Please note that during periods when there is no discharge, DMRs shall state “no discharge” for that outfall (005).

12. Comment:

Section I. – A new section “C” should be added which authorizes the release of stormwater from areas within the port facility, other than the areas draining to the CSB catchment (Outfall 005), and stormwater from the DMTS. Stormwater discharges are no less significant than discrete discharge points such as Outfalls 001 and 005 and need to be specifically authorized in a NPDES permit. It should be expressed that numeric effluent limits are infeasible for these stormwater releases and other releases from these facilities such as fugitive dust, but discharge of pollutants from stormwater and fugitive dust from these facilities will be controlled or abated through the implementation of BMPs. Consistent with the last permit application amendment, it should also be mentioned that treated mine-site effluent can be used for dust control on the DMTS provided it is regulated through BMPs. The current section “C” could be relabeled as “D”.

Response:

The intent of EPA’s language in Condition I.V. of the draft permit, Best Management Practices, was to address via BMPs all of the storm water discharges at the facility that would be covered under the 2000 NPDES Storm Water Multi-Sector General Permit for Industrial Activities (i.e., those other than Outfall 005 and not subject to 40 CFR Part 440 Ore Mining and Dressing point source categorical standards). EPA has clarified the final permit by including a storm water discharge authorization on the cover page, adding a section I.C. “Industrial Storm Water,” and by adding specific storm water language to the revised Best Management Practices section (permit Part II.). EPA revised the Best Management Practices section to be consistent with similar industrial permits in the Region, with requirements based on conditions found in the Multi-Sector Permit.

EPA did not authorize DMTS dust control using treated mine-site effluent in the final permit. Section I.C.10 of the current Red Dog Mine NPDES Permit No. AK-003865-2 states that the permittee shall not use treated effluent as dust suppressant on the haul road to the Port.

13. Comment:

Section I.C.1. – In a letter dated March 8, 2004 from Patricia A. Cirone (EPA Region 10, Acting Director, Office of Environmental Assessment) to R.G. Scott (General Manager, TCAK), alternate test procedures (ATP) for EPA method 200.8 and 300.0 were approved for use in effluent, ambient and receiving water sample analysis under NPDES permit AK-004064-9. Please include these approved ATP in the renewed permit. Further, notwithstanding comment 7, TCAK has been unable to locate a 40 CFR 136 approved method for salinity. TCAK recommends that SM 2520 B, which reports results in Practical Salinity Units (PSU), or SM 2520 Modified, which reports results in parts per thousand (ppt), be referenced in this section of the permit.

Response:

Agreed. EPA has included methods 200.8 and 300.0 in the final permit as approved ATP. Salinity monitoring at Outfall 001 has been omitted from the final permit.

14. Comment:

Section I.C.4. – Section I.C.4. as well as Note #1 in Tables 1 and 2 require the reporting of actual values for analytical results above the MDL. However, in a recent Region 10 EPA guidance, it was identified that analytical values above the MDL but below the ML (quantification limit) should not be reported or used for compliance evaluation, presumably because these values lack the level of statistical certainty as values reported above the ML. While the referenced guidance pertains to setting WQBEL below MLs and MDLs, the draft permit appears to be inconsistent with the general philosophy of the guidance by not recognizing the quantification limit. TCAK requests that values less than the ML be reported as less than the {numeric value of the ML}.

Response:

Agreed. EPA has placed language consistent with the recent Region 10 guidance in the final permit sections I.D.4 and Tables 1 and 2, as follows:

“For purposes of reporting on the DMR, if a value is greater than the ML, the permittee must report the actual value. If a value is between the MDL and the ML, the permittee must report “less than {numeric ML}” on the DMR. If a value is less than the MDL, the permittee must report “less than {numeric MDL}” on the DMR. For purposes of calculating monthly averages, zero may be used for values less than the MDL, and {numeric MDL} may be used for values between the MDL and the ML. The Permittee shall report the number of non-detects for the month in the comment section of the DMR.”

15. Comment:

Section II.5. – Quarterly biosolids monitoring at a facility of this size is excessive. The State wide general permit (AKG-57-1000) contains no biosolids monitoring parameters. It is unclear to TCAK why facilities of similar size and function have less restrictive monitoring requirements. The Fact Sheet states that the biosolids monitoring requirements are necessary to protect public health under Section 405 of the CWA. However, nearly 6-years of monthly biosolids monitoring (or vacuum filtered mixed liquor solids when biosolids were not generated) have failed to identify any adverse effects to public health. TCAK does not anticipate any changes to the port operation that would result in the STP biosolids becoming a public health hazard.

Response:

Agreed. EPA has taken biosolids requirements out of NPDES permits in anticipation of regulating biosolids with separate permits. EPA has removed the biosolids requirements

from the final permit; however, Section 503 regulations are self-implementing and still apply. EPA omitted draft permit Appendix 1 containing the 503 regulations from the final permit.

16. Comment:

Section II.5. – Notwithstanding comment 15, the permit should indicate that biosolids monitoring is only required when sludge is wasted from the STP during the calendar quarter. There have been several quarters that biosolids have not been generated.

Response:

See Response to Comment 15 above.

17. Comment:

Section II.5.b. – This section should be revised to state, “The biosolids shall be sampled after being thickened in the filter press, but prior to being mixed with other wastes and co-incinerated.”

Response:

See Response to Comment 15 above.

18. Comment:

Section II. – Please provide a definition of biosolids in the definition section (VII) of the permit. Given the configuration of the port STP with the filtration system, how does EPA distinguish between mixed liquor solids and biosolids?

Response:

Since EPA has removed biosolids requirements, the definition was not included in the final permit.

The definition of *sewage sludge* is found in the federal regulations at 40 CFR Sections 122.2 and 503.9(w). EPA considers sewage sludge or biosolids to mean any solid, semi-solid, or liquid residue generated and removed during the treatment of domestic sewage (except grit, screenings, or ash generated by incinerating biosolids). At the Port Site, biosolids are settled solids that have been removed from the treatment system (except grit, etc.), thickened, dewatered, and collected in bags for disposal at the incinerator or alternate approved biosolids disposal site. Mixed liquor is retained in the aeration basin as part of the activated sludge process, not removed as biosolids or sewage sludge.

19. Comment:

Section III.A. - Provisions A.1 and A.2 (pages 10-11) need to be combined and reconciled. Provision A.1 requires one year of biomonitoring while Provision A.2 states that testing shall be once/month during the months of June, July, August and September. Without clarification, someone could argue that Provision A.1 requires 12 months of biomonitoring. TCAK recommends that Sections III.A.1 and 2 be combined to avoid confusion and renumber remaining sections. Suggested wording follows:

1. The Permittee shall perform acute toxicity tests on samples representative of the effluents discharged from outfalls 001 and 005 for purposes of characterization. The tests shall be conducted once each month during the months of June, July, August, and September in [specific year testing should be conducted in, 2007?]. The testing shall include the fish and invertebrate species and methods listed below:

Atherinops affinis (topsmelt)- 4 day static non-renewal, acute test (refer to reference listed in Section III.A.3.b.);

Americamysis bahia (Atlantic mysid) or *Holmesimysis costata* (Pacific mysid)- at least 48 hour static non-renewal, acute test (refer to reference listed in Section III.A.3.b.)

The Permittee shall submit a full report of (see 4. of this section) the test results by November 30, [specific year testing should be conducted in, 2007?].

Response:

Agreed. EPA has reconciled and clarified the sections in the final permit to require WET testing once each month during the months of June, July, August, and September 2008, although the results must be submitted with the application for permit renewal, as agreed to in Response to Comment 2.

20. Comment:

Section III.A. - Provision A.3.a requires series of six (6) test solutions for biomonitoring. This should be changed to specify a minimum of 6 test solutions so that TCAK can use additional test solutions as necessary to increase test sensitivity.

Response:

Agreed. EPA has changed the final permit to require at least 6 test solutions.

21. Comment:

Section III.A. - Provisions 1. and 4., although slightly ambiguous, appear to require WET test results to be reported in both the monthly DMR for the month that the testing occurred in and

in a separate annual “full” report. Further, these sections conflict with the Fact Sheet and page 4 of the permit. TCAK sees no need for redundant reporting requirements. Since there was no reasonable potential to exceed the State narrative toxicity criteria, it would appear that the testing data is intended for use in the next permit renewal cycle. It seems that a single report submitted with the renewal application or at the end of the season of testing would be most logical.

Response:

EPA has revised the final permit to require a full WET report with the application for permit renewal. See Response to Comment 2.

22. Comment:

Section III.B. – The ambient monitoring program and note #2 in Table 3, requires monitoring for dissolved mercury. The aquatic life criteria for both marine and fresh water are expressed as a total recoverable. TCAK does not see the need to sample dissolved mercury.

Response:

The most recently approved Alaska aquatic life criteria for mercury in marine water are expressed in the dissolved form. EPA has retained the requirement for dissolved mercury monitoring in the permit.

23. Comment:

Section III.B.1. – Table 3 specifies minimum detection levels for ambient metals analyses. Because of the difficulty of analyzing sea water for metals, this provision needs to be changed to specify that the minimum detection levels are targets, and failure to achieve them due to matrix interferences will not constitute a permit violation. The minimum method detection limits achievable when analyzing seawater samples will be specified in the Ambient Water Monitoring Program Plan, which should be approved by EPA.

Response:

EPA has changed Table 3 in the final permit to be consistent with other permits in the region. Table 3 now specifies Method Detection Limits with the provision that the permittee may request different MDLs in writing.

24. Comment:

Section III.B.3 - The requirement to collect a minimum of one monthly ambient sample during the months of June, July, August and September continues for each year of the permit. The purpose is to get background ambient data. The requirement should last for just the first three years. By that time there will be twelve different sample periods and that should suffice.

Response:

EPA feels that it is necessary to collect the data to ensure that the questions regarding appropriate background metals levels (especially copper) are resolved. Therefore, EPA has retained the condition in the final permit.

25. Comment:

Section III.B.3. – The last sentence is redundant to section III.H., and should be removed. What and when ambient monitoring is reported should be included in the Ambient Water Monitoring Program Plan, which should be approved by EPA.

Response:

EPA does not agree. The ambient sampling also requires notation of weather conditions. The last sentence of the condition does not specify when sampling occurs. EPA has retained the permit condition.

26. Comment:

Section III.B.4. – The timing of reporting of ambient sampling results should be included in the Ambient Water Monitoring Program Plan, which should be approved by EPA. This provision (Section III.B.4) should be removed from the permit. Requiring the data to be reported in the monthly DMR limits the amount of time the data can be reviewed and checked for quality and reduces the likelihood that the data will be analyzed for trending over time. An annual report allows for a more detailed holistic presentation of the data.

Response:

Agreed. EPA has changed the permit to require annual March 1 reporting of the ambient results for the previous season within an Annual Water Monitoring Summary Report (Part I.H.), which was added in response to Comment IV.B.9., below.

27. Comment:

Section III.C.5. – This provision requires a laboratory certification to be prepared for each DMR. This requirement is burdensome and does not appear to be included in more contemporary permits written by Region 10 EPA (e.g. AK-005334-1). TCAK sees value in requiring a laboratory providing a certification statement once per permit cycle and maintaining the certification on file.

Response:

EPA agrees that the provision has changed in more contemporary permits. EPA has changed the final permit to be consistent with contemporary permits, which do not include the language.

28. Comment:

Section III.D. – The first paragraph may need to be revised based on comments pertaining to salinity and biosolids monitoring.

Response:

Agreed. EPA has omitted salinity and biosolids from the paragraph.

29. Comment:

Section III.D. – The second paragraph contains an unacceptably vague requirement to sample at times other than when routine samples are collected if the permittee believes that a discharge may occur that can be reasonably expected to cause or contribute to a violation of the permit. This provision sets up a requirement that is too subjective and is redundant with the general NPDES conditions for representative sampling. This implies an additional duty for the permittee that is not clearly defined. It should be deleted or revised to the wording presented in the Fact Sheet.

Response:

The language in the second paragraph is included in the permit because routine monitoring could easily miss permit violations and/or water quality standards exceedances that could result from bypasses, spills, or non-routine discharges. This requirement directs the Permittee to conduct additional, targeted monitoring to quantify the effects of these non-routine occurrences on the final effluent discharge.

The requirement in the federal regulations regarding representative sampling (40 CFR 122.41[j]) was expanded to specifically require sampling whenever a bypass, spill, or non-routine discharge of pollutants occurs, if the discharge may reasonably be expected to cause or contribute to a violation of an effluent limit under the permit. This provision is included in the EPA Region 10 NPDES permit template for all industrial facilities and was retained in the final permit. This language is necessary to ensure compliance with the CWA and the limits of the permit and is therefore authorized by 40 CFR 122.43(a) and 122.44.

30. Comment:

Section III.E. – Since the permit requires weekly sampling and since the site is a remote fly-in-fly-out operation, it is often difficult to get the samples to a contract lab, have the samples analyzed, have the lab report the sample results, validate the analytical results and prepare the monthly DMR by the 15th of the following month. TCAK requests that the due date for the monthly DMRs be relaxed to the 20th of the following month. Further, since Red Dog is a remote fly-in-fly-out operation, it is not unusual to have un-flyable weather conditions in excess of 7-days consecutively, which has resulted in a frequent inability to secure postmarks on or before specific dates. Further, there are only two mail flights per week from Red Dog. For these reasons, for the past 5–years at least, TCAK has faxed the signed monthly DMR

cover letter to the EPA compliance officer on or before the due date, and the compliance officer has deemed TCAK in compliance with the reporting deadline. The permit should be revised to reflect that a signed fax of the cover letter determines the date of DMR submittal.

Response:

Agreed. EPA has changed the permit to reflect a due date of the 20th, with a statement authorizing submittal of the DMR or a signed fax of the DMR cover letter by the 20th.

31. Comment:

Section III.F. - Provision F (page 16) requires that all testing be performed with 40 CFR 136 methods, test procedures approved in the permit, or test methods approved under the 40 CFR 136 alternate methods provisions. The ambient monitoring for metals required by the permit cannot be done with 40 CFR 136 methods (special methods for low detection limits in sea water are needed). This may be true of other methods used for ambient testing. Also, testing of the sewage sludge for metals is not done with 40 CFR 136 methods. Thus, this provision should be revised to make exceptions for ambient testing and sludge analytical methods.

Response:

EPA has included approved ATMs for effluent and ambient monitoring in the final permit (see Response to Comment 13 above) and has omitted sludge testing.

32. Comment:

Section III.I. – The last sentence indicates that certain records must be maintained on-site during the duration of activity at the permitted location. It is anticipated that the port will continue operation for an additional 30-years. Certainly, maintaining records for 30-years is not the intent of this provision.

Response:

This condition in the draft permit contained language carried over from the previous permit. EPA Region 10 has since updated the language in the NPDES permit template for industrial facilities. EPA placed the new language in the final permit; the last sentence has been omitted, and the permit now states that records must be retained for five years rather than three, with a provision that EPA or ADEC can ask for an extended period.

33. Comment:

Section IV.1. – This part should be expanded to include all sources of dust emissions from the port facility.

Response:

EPA has expanded the final permit Part II., “Best Management Practices” (draft permit Part I.V.) to be consistent with similar industrial permits in Region 10. Although the draft permit included all sources of dust emissions from the port facility, EPA has clarified the final permit (Part II., “Best Management Practices,” II.C.1., D.6., and E.4.) to more clearly refer to all sources of dust emissions from the facility.

34. Comment:

Section IV.C.3. – A new Part 3 should be added similar in language to Parts 1 and 2, which discusses potential discharges from stormwater from the port facilities other than the CSB drainage area including the release of accumulated water in the secondary containment of the tank farm.

Response:

Agreed. For clarification, EPA has added a new part I.C.3., which applies to storm water other than storm water from construction and storm water subject to 40 CFR 440 effluent guidelines. Storm water discharges in Part I.C.3. shall be managed via Best Management Practices (final permit Part II. “Best Management Practices”). See Response to Comment I.A.12., above.

35. Comment:

Section IV.C.4.(a). – In the listing of “ancillary activities,” fugitive and point source dust emissions should be included.

Response:

EPA has clarified Part II. of the final permit (“Best Management Practices”) to specify all of the sources of fugitive dust emissions at the facility. See Response to Comment I.A.33., above.

36. Comment:

Section IV.D.1.(d). – This part states, “Specific BMPs and SOPs to achieve the above objectives (see below).” This is confusing.

Response:

Comment noted. EPA omitted the language. EPA has clarified the permit as noted in Responses to Comments I.A.12., 33., and 34.

37. Comment:

Section IV.D.1.(e). – This part references “boards of review in paragraph E, below.” Paragraph IV.E. has no reference to boards of review. Please clarify. TCAK has an incident investigation program, but does not have any boards of review.

Response:

The provision was carried over from the previous permit. EPA has changed the permit to require a BMP Committee and responsible manager to be named within the BMP Plan (Part II.D.2.).

38. Comment:

Section IV.D.2.(a) – This part requires a review by plant engineering staff and the plant manager. The port has no engineering staff or manager. TCAK recommends that the BMP plan should specify who should conduct the annual review, and EPA will have the opportunity to approve the plan.

Response:

See Response to Comment I.A.37.

39. Comment:

Section IV.F – See comment #38. The requirement for the plant engineering staff and plant manager to review all changes to the BMP can be deleted. How changes to the BMP plan will be reviewed and approved will be specified in the plan, which EPA will have the opportunity to approve.

Response:

See Response to Comment I.A.37.

40. Comment:

Section V.B. – Section V.B. references sections IV.G. and IV.H. It appears that these references should be V.G. and V.H.

Response:

The final permit Part I.V.B. (“Penalties for Violations of Permit Conditions”) no longer references the sections due to changes in boilerplate language.

41. Comment:

Section V.E. – This section requires the operation of back up or auxiliary equipment only when the operation is necessary to achieve compliance with permit conditions. Since the

port treatment plants are dedicated facilities to treat wastewater to achieve permit limits, compliance with this provision would require completely redundant treatment plants. It seems that there should only be requirements for key components or components that have some level of likelihood of failure.

Response:

EPA has placed more contemporary boilerplate language into the final permit, as follows:

“The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back up or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of the permit.”

42. Comment:

Section V.E. – Provision E (page 26) requires annual surveys of the diffuser by a diver and with a dye tracer study. The dye study is unnecessary to determine if the diffuser is in operating condition and should be deleted.

Response:

EPA feels that it is no longer necessary to require dive surveys and dye tracer studies within the permit and has omitted the requirement from the final permit.

43. Comment:

Section V.F. – The removed substance provision does not appear in more contemporary permits issued by Region 10 EPA. It is unclear why TCAK would be held to different standards than other permitted dischargers. Further, since the regeneration solution from the port IX plant is treated in the mine-site water treatment plant, there is the theoretical possibility that some removed substance for the port could be discharged within the permitted limits of the mine NPDES permit with no detrimental effects.

Response:

Agreed. The provision does not appear in more recent EPA permits, and EPA omitted it from the final permit.

44. Comment:

Section V.H.1. – The last sentence states, “No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for

noncompliance, is subject to judicial review.” This statement is confusing. Can EPA provide clarification? It does not appear appropriate that a permit provision could restrict a permittee’s rights for judicial review.

Response:

Permit language carried over from the last permit omitted part of the regulatory language found in 122.41(n)(2) *Effect of an upset*. The last part of the sentence should read, “...is final administrative action subject to judicial review.” According to personnel in EPA’s Office of Regional Counsel, the provision means that if EPA decides that a facility’s noncompliance was caused by an upset, EPA’s determination cannot be challenged. EPA has corrected the language in the final permit.

45. Comment:

Section VI.C. – The Control of Undesirable Pollutants provisions does not appear in more contemporary permits issued by Region 10 EPA. It is unclear why TCAK would be held to different standards than other permitted dischargers. Further, this provision is somewhat ambiguous and appears to unnecessarily interfere with the operation of the treatment facility and has little to do with protecting waters of the U.S. Operation of the treatment plant is TCAK’s risk and improper operation which results in effluent limit violations is enforceable without this provision. Part C. should be deleted.

Response:

Agreed. The provision does not appear in other Region 10 industrial permits. EPA has removed the condition from the final permit.

46. Comment:

State Certification – The draft permit Fact Sheet states that the maximum flow at Outfall 005 is 750 gpm. Was the State mixing zone size determination consistent with this discharge flow rate? TCAK anticipates that treatment capacity at the IX plant will be increased to 500 gpm and possibly greater in the near future. MZ modeling should be based on 750 gpm.

Response:

EPA based the permit limits on the State’s 401 Certification, which stated a maximum flow at Outfall 005 of 750 gpm.

B. Center for Science in Public Participation (CSP²) Comments

EPA received the following comments from the Center for Science in Public Participation (CSP²) in a letter dated May 26, 2005, addressed to Mike Gearheard from Amy Crook, Alaska and British Columbia Representative.

1. Comment:

The NPDES permit needs to include sediment monitoring.

The port facility uses a conveyor system to transport the ore from onshore to barges. The EPA brought a complaint against the company alleging that ore concentrate from the conveyor system to the barges was discharged to the Chukchi Sea three times in August 2002. Other releases from the conveyor system are likely to have happened.

EPA's draft permit for the Red Dog Port Facility is not as stringent as other mining facilities in Alaska that use similar ore transport systems and have the probability of impacting marine resources. The Greens Creek Mine uses a conveyor system to transport ore to barges. They have also had ore spills into the marine environment and are required to conduct routine sediment monitoring as part of their NPDES permit.

Teck Cominco should be required to conduct similar sediment monitoring at the Red Dog Port facility, especially since there have already been spills into the marine environment. Sediment sampling should be conducted twice per year at sampling stations that are selected for their representativeness, using a minimum of at least six locations and following the protocols and reporting requirements established in the Greens Creek Mine NPDES permit.

Monitoring should also include In-Situ Bioassays using the protocols and reporting requirements established in the Greens Creek Mine NPDES permit. If elevated concentrations are found in the sediment and/or In-situ bioassays show effects, then EPA must require a food web effects analysis and project impacts to threatened and endangered species in the area. It is a grave omission for the NPDES permit to not require routine sediment monitoring.

Response:

EPA did not include sediment monitoring in the NPDES permit. Based on the following information and the facility improvements in fugitive dust control, EPA feels that additional sampling through the NPDES permit is not necessary at this time. EPA will revisit the issue during the next permit reissuance to determine whether sediment monitoring should be required in the subsequent NPDES permit. If it becomes apparent that there is a need for immediate monitoring, EPA will request that it be done at that time.

Response to fugitive dust during barge loading: Extensive improvements have been made in the fugitive dust control systems at the Port Site since 2002, and monitoring of the results of the improvements in ongoing.

Response to comparison to the Greens Creek Mine permit: Sediment monitoring at the Greens Creek Mine was required in the Alaska DEC's 401 certification of the permit. The State's 401 certification for the Red Dog Mine Port Site did not require sediment monitoring

because of a parallel regulatory process that is occurring. For convenience, a response to the comment in a letter from ADEC to EPA dated December 28, 2005 has been included below:

The ADEC/SPAR Contaminated Sites program is currently conducting a Risk Assessment to address the risks posed by soil metals concentrations found in the area. The ADEC will consider the findings of the final Risk Assessment and resulting Risk Management Decision to determine whether sediment monitoring is merited in the subsequent NPDES permit regulating discharges from the facility.

Response to the concern that sediment monitoring is not occurring: The DeLong Mountain Regional Transportation System (DMTS) Fugitive Dust Risk Assessment is an evaluation of water, sediment, and other data from the freshwater stream environments at the mine and port sites, as well as the marine environment at the port site. The purpose is to assess the public health and environmental impacts of fugitive dust deposited along the transportation system. The draft risk assessment was made available for public comment from April 12 through July 11, 2005; Teck Cominco and ADEC are still evaluating the comments received during that period. Toxicologists from EPA's Office of Environmental Assessment Risk Evaluation Unit provided comments on the draft risk assessment. EPA notes and appreciates that CSP² also made comments. Details of the project can be found on ADEC's web site at the following address:

<http://www.dec.state.ak.us/spar/csp/sites/reddog.htm#info>

As the risk assessment is completed, a risk management plan will be developed to identify types and frequencies of monitoring to be done in multiple environments, including the marine sediments. Development of the risk management plan will be a collaborative process involving ADEC and others.

In addition, Teck Cominco has conducted and will continue to conduct marine sediment sampling to evaluate metals concentrations in surface sediments in the Chukchi Sea in the vicinity of the shiploader. Sampling was conducted prior to and during shipping seasons in 2003 and 2004, and during shipping season in 2005, to evaluate sediments after major shiploader and lightering barge improvements were made to control fugitive dust emissions. The 2005 sampling program (approved by ADEC) focused on a subset of stations assessed in the previous events. Sediment metals concentrations showed a decreasing trend, and the concentrations reported in 2004 and 2005 were below risk-based sediment screening benchmarks. Future monitoring frequencies will be addressed as part of the risk management plan.

Sediment sampling is also an ongoing requirement from the 1984 Red Dog Environmental Impact Statement (EIS). Sampling will continue as required in the EIS.

2. Comment:

The evaluation of background metal concentrations is flawed, limiting compliance evaluations.

The previous permit required ambient monitoring of the Chukchi Sea to determine background pollutant concentrations for development of Waste Load Allocations. Ambient parameters sampled were cadmium, copper, lead, mercury, zinc, total suspended solids, salinity, and fecal coliform. Data was collected at three seawater sampling sites near the boundaries of the fecal coliform mixing zone. Some of the metals data, primarily copper, indicated that the seawater sampling sites might not be representative of background concentrations due to high pollutant concentrations. A fourth site, an ambient reference site farther from the facility, was selected for comparison and was sampled in October 2004. Cadmium, mercury and lead results were similar between the original sampling area and the new ambient reference site. Copper and zinc values, however, were lower at the ambient reference site.

The sampling site selected to represent ambient conditions may be affected by contamination. Perhaps metals from the port facility have contaminated the marine waters in a larger area than originally thought. This is a probable scenario because the area of metal contamination along the haul road has been documented to be much larger than originally imagined. The metal particles are very fine and can travel long distances on the wind or in the tides, resulting in soil, water column, and sediment contamination over a much larger area.

The extent of the marine water and sediment area that has already been contaminated by discharges and releases from the port facility needs to be defined. An effort similar to the upland contamination evaluation currently being conducted by Teck Cominco and the State of Alaska on lands along the haul road is needed in the marine environment. The extent of existing sediment and water column contamination needs to be assessed and documented before authorization to discharge more is allowed.

If there is no background data from before the discharge started, EPA must be very conservative in assuming what natural background conditions are. Assuming background metal concentrations are higher than they really are will bias efforts to accurately attribute contaminant increases in the marine receiving environment, if any, from the port facility. This will influence all estimations of what the impacts from the port facility are on the surrounding environment and will influence the clean up efforts that will need to be conducted at this facility. EPA must ensure that accurate background levels of metals in marine waters and sediment are quantified as part of this NPDES renewal.

Response:

EPA requires ambient surface water monitoring to determine background conditions (levels of pollutants outside of the facility's influence) in order to assess a facility's impact on the receiving water. The ambient monitoring is not designed to determine natural conditions, those conditions that occurred before any human influence. As per EPA's Technical Support Document for Water Quality-Based Toxics Control (TSD, EPA/505/2-90-001, March, 1991), EPA takes into account levels of pollutants in the receiving water when developing discharge

limitations - the higher the ambient pollutant levels, the lower the amount that can be discharged in the effluent (i.e. the more stringent the effluent limit).

EPA has required ambient receiving water monitoring in the permit to determine accurate ambient concentrations for assessing the Port Site's impact on the Chukchi Sea and to set appropriate limitations.

Please see the response to Comment IV.B.1. for a discussion of sediment monitoring in the marine receiving environment.

3. Comment:

The draft NPDES permit lacks an adequate storm water monitoring program.

The NPDES fact sheet states (Pg 27):

“Pursuant to 40 CFR 122.26, storm water runoff from the road is regulated via BMPs. The nature of the exposed materials along the road indicates the mine drainage discharges should not adversely affect water quality (assuming appropriate design and implementation of BMPs) therefore the draft permit does not require monitoring of individual culverts along the access road. The Permittee is required to conduct routine inspections and an annual comprehensive site evaluation to evaluate whether actions to reduce pollutant loadings to waters identified in the Plan are adequate and properly implemented.”

The proposed approach of managing stormwater runoff from the haul road with normal BMPs is not appropriate in this instance because there is documented contamination in the drainages downgradient from the haul road. Ongoing analysis of heavy metal contamination along the haul road and at the port site has documented very high concentrations of heavy metals, with concentrations of lead as high as 12,300 mg/kg, zinc 48,300 mg/kg, and cadmium 271 mg/kg (Exponent 2002, National Park Service 2004). The Alaska Department of Natural Resources conducted a study in 2004 (Ott and Morris 2004) that documents elevated levels of cadmium and lead in juvenile Dolly Varden whole body samples downstream of the haul road (Anxiety Ridge Creek, Aufeis Creek), and elevated levels of cadmium in the Omikviorok River downstream of the haul road. This is further justification for stormwater sampling.

It is probable that metals are picked up in rain and snow melt and transported in surface water. The National Park Service study called for a much more thorough analysis of environmental and human health impacts cause by this heavy metal contamination.

Industrial facilities that have non-point pollutant sources should have mandatory storm water monitoring program included in the NPDES permit. The Greens Creek Mine is again an example of a similar facility (heavy metal sources throughout the mine site, neutral metal and acid mine leaching into stormwater). The same requirements included in the Greens Creek Mine NPDES permit should be applied to the Red Dog Mine Port Facility.

Since storm water monitoring has not been required at the Red Dog Port facility in the past, quarterly samples should be required. Monitoring should include sampling for a full suite of metals, oil and grease, TSS, and pH at several sites throughout the port facility that are likely contaminant sources or discharge points. A complete Quality Assurance Project Plan (QAPP) should be required for the stormwater sampling program as part of this permit. All stormwater monitoring results should be included in the DMRs on a quarterly basis.

Response:

EPA feels that placing storm water quality monitoring in the final permit is not necessary at this time. However, EPA has expanded the final permit Part II. (“Best Management Practices”) to be more consistent with similar industrial permits in the Region. (See Responses to Comments I.A.12. and 34.)

BMPs addressing fugitive dust and sediment management on the haul road are adequate storm water controls to place within the permit. Industrial storm water discharges on the Port Site property that are not subject to 40 CFR 440.104 effluent guidelines (i.e. storm water other than the Outfall 005 discharge, which is subject to the guidelines) would not require water quality monitoring under the extended 2000 NPDES Storm Water Multi-Sector General Permit for Industrial Activities. EPA placed conditions similar to the requirements in the Multi-Sector permit into the final permit.

During the next permit reissuance, EPA will evaluate the need for storm water monitoring in the subsequent permit using information obtained from the risk assessment and risk management program.

High levels of metals were documented in runoff past the concentrate storage buildings (CSBs), resulting in a previous permit requirement to collect and treat the runoff from those areas. The runoff past the CSBs is treated in an Ion Exchange plant at the Port Site before discharge as Outfall 005. The discharge must meet limits based on the Effluent Guidelines found in 40 CFR Part 440.104. The previous permit allowed Outfall 005 to discharge to the tundra. However, in the proposed permit EPA did not authorize 005 discharge to tundra; Outfall 005 is only authorized to discharge to the Chukchi Sea (via the same line as Outfall 001).

Response to paragraph 2: Language on page 27 of the fact sheet was carried over from the previous permit. The language contained a misstatement in the following sentence: “The nature of the exposed materials along the road indicates the mine drainage discharges should not adversely affect water quality.” Along the haul road there are no mine drainage discharges as defined by 40 CFR 440.132(h), which states that “Mine drainage” means any water drained, pumped, or siphoned from a mine. EPA did not intend to classify this runoff as mine drainage discharges for permitting purposes.

Response to comparison to the Greens Creek Mine permit: EPA does not agree that the Red Dog Port Site warrants the same level of storm water monitoring as the Greens Creek Mine site. The Port Site permit does not include the mine site and does not have all of the same issues as an active mine site. The Red Dog Mine Site is covered separately under NPDES Permit No. AK-003865-2. Further, according to United States Department of Agriculture (USDA) National Resources Conservation Service data, the annual average precipitation and snowfall at Kotzebue near Red Dog are 9.0 and 49.6 inches, respectively, and the annual average precipitation and snowfall at Juneau near Greens Creek are 58.6 and 92.4 inches, respectively.

Response to Dolly Varden whole body study results as they relate to stormwater monitoring: Creek monitoring for metals is addressed in the ongoing risk assessment and risk management program as part of the evaluation of impacts to human health and the environment from fugitive dust.

4. Comment:

The Red Dog Mine Port Facility needs to institute a groundwater monitoring program.

As discussed before, there are very high metal concentrations in the soils on site at the port facility. The metals on the port site and along the haul road both come from the same source – the Red Dog Mine – and should have the same chemical characteristics. The National Park Service (NPS 2004) documented that zinc levels declined with soil depth rather dramatically, and concluded that zinc is being leached out of the soils and into groundwater. It is very likely that zinc from the port facility, and perhaps other metals, are being leached into the groundwater and perhaps transported off site.

ADEC regulations set acceptable levels for metal concentrations in groundwater and require that there is no migration of groundwater contaminants past the boundary of an industrial site facility (18 AAC 75 345. Groundwater and surface water cleanup levels). It has been established by the National Park Service that this particular type of zinc is leachable and thus mobile in groundwater. Excessive zinc levels could create an environmental hazard for surface and marine water resources and be another unaccounted for pollutant load into the marine water mixing zone. Migration of groundwater contaminants offsite is a violation of ADEC's contaminated sites regulations.

Response:

Ground water monitoring is beyond the purview of the NPDES permit. For convenience, included below is ADEC's response to the comment (from a letter dated 12/28/05):

The option for the discharge to tundra from Outfall 005 as contained in the 1999 NPDES permit has been removed. The ADEC believes that there is not a reasonable risk of groundwater contamination resulting from the permitted discharges in the renewed permit. Groundwater monitoring is not required in the 401 certification of the renewed permit.

Regulations contained in 18 AAC 75 are administered by the ADEC Division of Spill Prevention and Response (SPAR). The ADEC/SPAR Contaminated Sites program is currently conducting a Risk Assessment to address the risks posed by soil metals concentrations found in the area. The ADEC will consider the findings of the final Risk Assessment and resulting Risk Management Decision to determine whether groundwater monitoring is merited in the subsequent NPDES permit regulating discharges from the facility.

5. Comment:

Threats to Endangered and threatened species may have been underestimated.

The fact sheet (page 29) states:

“Based on a more restrictive draft permit and the findings of the BE (biological evaluation), the EPA has determined that the discharges authorized by this permit may affect, but are not likely to adversely affect the endangered or threatened species.” EPA has conducted a biological evaluation of several species including the short-tailed albatross, spectacled eider, Stellers eider, bowhead whale, fin whale, and humpback whale. Many of these species are at the top of the food web and at risk from bioaccumulation of contaminants through their diet. Many contaminants, especially metals, are introduced into the food web through contact with or consumption of organisms that live in or ingest contaminated sediments. The draft permit and fact sheet didn’t present any information on the level of metals currently in marine sediments, or require the monitoring of sediments for contaminant accumulation and biotic impacts. This lack of sediment monitoring is a source of uncertainty and could contribute to underestimation of risks to species that exist in the discharge area and species of concern that frequent the area and consume local organisms.

Contaminant levels in local marine sediment needs to be monitored and factored into a cumulative assessment of risks to threatened and endangered species through a revised biological evaluation.

Response:

Letters requesting current species lists and consultation were sent to the U. S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) on February 18, 2005. The Services responded, and copies of the draft permit, fact sheet and BE were subsequently sent to both agencies. In a letter from Ted Swem to Michael Lidgard dated May 10, 2005, the USFWS concluded that this project is not likely to adversely affect listed species and that further consultation under section 7 of the Act regarding the project is not necessary. In a letter from James Balsiger to Michael Lidgard dated May 16, 2005, NMFS agreed with EPA’s conclusion that no listed species occur within the project area and that the project would have no effect on listed species. Based on information in the draft permit and attachments, NMFS also concurred

with EPA's determination that reissuance of the permit will not adversely affect Essential Fish Habitat (EFH).

EPA feels that ESA requirements have been met for the draft permit. During the next permit cycle there will be information from marine sediment monitoring, the Risk Assessment, and the Risk Management Program, which will be factored into the ESA evaluation at that time.

6. Comment:

Whole Effluent Toxicity tests need to be done more frequently.

The NPDES permit only requires one year of WET testing (actually only four tests in total, one in June, July, August, September). The tests only need to be conducted in one year out of the term of the permit- five years. This is too infrequent to assess the toxicity of a variable effluent. The permit should require toxicity testing every year of the life of the permit.

The WET tests are only required to use acute toxicity endpoints. No chronic toxicity tests are required in the permit, which means that the effluent may still be having toxic impacts, but these will not be monitored or quantified because of a lack of sampling rigor. The Alaska Water Quality Standards establish a WET effluent limit in chronic toxicity units (18 AAC 70.030. Whole effluent toxicity limit).

Monitoring requirements of NPDES permits need to use analytical techniques and assessment endpoints that are the same as used in the Alaska Water Quality Standards so that a compliance determination can be made. Annual chronic toxicity of the effluent needs to be assessed to ensure the Alaska Water Quality Standards are being met.

Response:

EPA has retained the requirement for monthly acute WET testing during the period of June through September 2008 in the final permit.

Response to frequency comment: EPA feels that it is appropriate to require less frequent WET testing in the final permit because reasonable potential to exceed WET criteria was not demonstrated using data from the previous permit. If results obtained during this permit cycle show reasonable potential, WET limits and more frequent testing shall be placed in the subsequent permit.

Response to acute vs. chronic comment: Acute testing was chosen during the previous permit cycle (1999-2004) as per the EPA Technical Support Document for Water Quality-Based Toxics Control (TSD, EPA/505/2-90-001, March, 1991), which recommends either acute or chronic WET testing for discharges with dilution factors between 100:1 and 1000:1 at the edge of the mixing zone. Appendix F of the 1999 fact sheet included calculations done to determine which type of testing would be more toxicologically protective. The results showed that acute WET testing was more protective, so acute testing was placed in the permit for characterization. EPA did the calculations again for the proposed permit using

ADEC's certified dilution factors. The results (more restrictive acute-to-chronic Long Term Average, LTA) indicated that the acute tests would still be more protective. To verify the decision to require acute testing, the permit writer consulted an EPA toxicologist in the Office of Environmental Assessment. The toxicologist stated that it was appropriate to do another round of acute testing before starting chronic testing because a determination on the first round of testing does not preclude toxicity at some point in the future. She indicated that either acute or chronic testing would be fine due to the decrease of the mixing zone (Zodrow 2005, email).

Response to water quality criteria comment: The TSD recommends that in the absence of a State numeric criterion, 1.0 TUc and 0.3 TUa be used as the criterion continuous concentration (CCC) and criterion maximum concentration (CMC), respectively. EPA used 0.3 TUa as the CMC for comparison with the acute WET results. To check reasonable potential to exceed chronic criteria, EPA converted the acute data to chronic using an acute-to-chronic ratio of 10 as recommended by the TSD. No reasonable potential was demonstrated for exceedance of the chronic criteria using the TSD method.

7. Comment:

Acute Mixing Zone needs justification.

The proposed permit limits set discharge limits for zinc, cadmium, lead, copper and mercury. (see Draft Permit: Table 3: Chukchi Sea Limitations and Frequency of Monitoring for Outfall 005) These are technology-based limits -- the highest discharge limits allowed under permit limitations by EPA.

As a result, the mixing zone that is created has an acute portion. There is no listing of the contaminant levels in the current discharge, so for the sake of discussion it is assumed that the actual discharge levels may be lower than the technology-based limits.

Given that it is EPA policy to minimize the size of the mixing zone (EPA Technical Support Document for Water Quality-Based Toxics Control, March 1991, Section 4.3.2), more explanation should be given as why limits less than the technology-based limits were not utilized to minimize the size of this mixing zone.

It should be the goal of EPA and ADEC to minimize the size of the mixing zone, and to eliminate the acute portion of the mixing zone.

Response:

Contaminant levels for monitored parameters and for those listed in the NPDES application as present in the effluent can be found in Appendix B of the Fact Sheet, which contains spreadsheets calculating Reasonable Potential for parameters in discharges from Outfalls 001 and 005. The column in each spreadsheet titled "Max effluent conc measured," notes the maximum effluent concentration values. Some of the maximum effluent values are discussed in the body of Fact Sheet Section VI.D, Effluent Limit Calculations. Similarly,

Fact Sheet Appendix D contains spreadsheets containing effluent concentrations and calculating reasonable potential for parameters with human health criteria. Appendix A of this Response to Comments document contains updated spreadsheets.

Authority to authorize a mixing zone remains with the State of Alaska. The mixing zones are set by Alaska in the State 401 Certification of the permit. Based on the mixing zones authorized by ADEC, for most parameters a comparison of technology-based limits and calculated water quality-based limits showed that the technology-based limits were more stringent. The more protective of the two forms of limits were placed in the permit. Please note that ADEC's revised 401 certification incorporated data collected after the draft permit was written, so some of the maximum effluent values have changed as more data became available. Please also note that the mixing zones were reduced by ADEC in the revised certification.

EPA considers justification of the mixing zone a comment on the State Certification. For convenience, ADEC's response from their December 28, 2005 letter is included below:

ADEC regulations require that mixing zones be as small as practicable [18 AAC 70.240(2)]. ADEC regulations also require that water quality criteria must be met at the boundary of the mixing zone [18 AAC 70.255(b)]. Both the acute and chronic mixing zones were sized to ensure that the water quality criteria are met at the boundary of the mixing zones under all discharge and receiving water conditions reasonably expected to occur.

The department used an approach similar to the reasonable potential analysis described in the EPA Technical Support Document for Water Quality-Based Toxics Control (Chapter 3) to predict the maximum effluent concentration (MEC) reasonably expected to occur from the discharge. This approach consisted of review of the effluent monitoring dataset and choosing the highest measured effluent values for parameters of concern. Effluent values were eliminated from the dataset where concentrations were suspected to have been elevated due to poor treatment plant operation or laboratory analysis errors. Coefficients of variation were calculated for each dataset and a Reasonable Worst Case Multiplier (RWCM) was calculated based on the 99% confidence level and 99% probability basis. The highest measured effluent concentration (excluding values where poor treatment plant operation or laboratory analysis errors were suspected) was multiplied by the RWCM to determine the MEC reasonably expected to occur. The MECs were used in the mixing zone modeling analyses of the effluent discharge to ensure that the water quality criteria are met at the mixing zone boundary under all conditions reasonably expected to occur.

In the mixing zone modeling analysis the current representing the 90th percentile of the receiving water current distribution was used to determine the maximum size of the mixing zone. The 10th percentile current was used to ensure that the acute mixing zone is sized to prevent lethality to passing organisms as required in 18 AAC 70.255(d).

8. Comment:

Fact Sheet Appendix E – Freshwater Chronic and Acute Criteria for Copper

In Step 1 in Appendix E of the Fact Sheet it is stated that the Freshwater Chronic criteria for Copper is 31,354 ug/L (acute criteria is 51,970 ug/L), based on an assumed hardness of 313.2 mg/L. On inspection this appears to be significantly higher than the values calculated for other NPDES freshwater permit discharges. This has also led to the use of technology-based effluent limit for the Tundra discharge (Outfall 005) in the permit.

The expected copper discharge limits would be expected to be about 4 orders of magnitude lower than those calculated in Appendix E. Can you please confirm this calculation?

Response:

This comment was based on the Outfall 005 discharge to tundra from the previous permit and does not apply to 005 discharges in the proposed permit. EPA contacted the Center for Science in Public Participation (CSP²) to discuss the comment.

9. Comment:

Monitoring Data Submission

The permittee should be required to submit an annual report summarizing all monitoring programs, and make it available to the public at the same time it is submitted to EPA and ADEC. The annual report should include a statistical evaluation of the data including trend analysis to detect contaminant concentration increases over time and an objective discussion of monitoring results.

Response:

EPA agrees that an annual summary report should be submitted to EPA and ADEC. EPA has placed a requirement for submittal of an Annual Water Monitoring Summary Report in the final permit (Part I.H.). The report shall be submitted by March 1 of each year.

Monitoring data is considered public information as soon as EPA and ADEC receive it; therefore, it may be obtained from EPA or ADEC at that time.

**OUTFALL 001
REASONABLE POTENTIAL CALCULATION
FOR PROTECTION OF HUMAN HEALTH**

Red Dog Port Site Outfall 001 for web

NPDES Permit No. AK-004064-9

Revised 3/00	Ambient Concentration (Geometric Mean)	Water Quality Criteria for Protection of Human Health	Max concentration at edge of chronic mixing zone.	LIMIT REQ'D?	Expected Number of Compliance Samples per Month	AVERAGE MONTHLY EFFLUENT LIMIT	MAXIMUM DAILY EFFLUENT LIMIT	Estimated Percentile at 95% Confidence	Pn	Max effluent conc. measured	Coeff Variation CV	S	# of samples from which # in col. K was taken n	Multiplier	Calculated 50th percentile Effluent Conc. (When n>10)	Dilution Factor
Parameter	ug/L	ug/L	ug/L	LIMIT REQ'D?	Expected Number of Compliance Samples per Month	ug/L	ug/L	Estimated Percentile at 95% Confidence	Pn	ug/L	CV	S	n	Multiplier	Calculated 50th percentile Effluent Conc. (When n>10)	Dilution Factor
Zinc	18.57	69000.00	21.44	NO	1	NONE	NONE	0.50	0.74	507.00	0.60	0.6	10	0.70	0.00	117.0

**OUTFALL 001
WATER QUALITY BASED
PERMIT LIMIT CALCULATIONS**

PARAMETER	Dilution (Dil'n) factor is the inverse of the percent effluent concentration at the edge of the acute or chronic mixing zone.		Permit Limit Calculation Summary							Waste Load Allocation (WLA) and Long Term Average (LTA) Calculations						Statistical variables for permit limit calculation						
	Acute Dil'n Factor	Chronic Dil'n Factor	Metal Criteria Translat or Acute	Metal Criteria Translat or Chronic	Ambient Concentration ug/L	Water Quality Standard Acute ug/L	Water Quality Standard Chronic ug/L	Average Monthly Limit (AML) ug/L	Maximum Daily Limit (MDL) ug/L	Comments	WLA Acute ug/L	WLA Chronic ug/L	LTA Acute ug/L	LTA Chronic ug/L	LTA Coeff. Var. (CV) decimal	LTA Prob'y Basis decimal	Limiting LTA ug/L	Coeff. Var. (CV) decimal	AML Prob'y Basis decimal	MDL Prob'y Basis decimal	# of Samples per Month n	
Total Residual Chlorine	34.0	117.00				13.00	7.50	185.5	442.0	WQB Limit	442	877.50	141.9	462.8	0.60	0.99	141.9	0.60	0.95	0.99	12.00	1.00

OUTFALL 005 REASONABLE POTENTIAL CALCULATION

This spreadsheet calculates the reasonable potential to exceed state water quality standards for a small number of samples. The procedure and calculations are done per the procedure in <u>Technical Support Document for Water Quality-based Toxics Control</u> , U.S. EPA, March, 1991 (EPA/505/2-90-001) on page 56. User input columns are shown with red headings. Corrected formulas in col G and H on 5/98 (GB)									CALCULATIONS									
Parameter	Metal Criteria Translator as decimal	Metal Criteria Translator as decimal	Ambient Concentration (metals as dissolved) ug/L	State Water Quality Standard		Max concentration at edge of...		LIMIT REQ'D?	Effluent percentile value	Pn	Max effluent conc. measured (metals as total recoverable) ug/L	Coeff Variation CV	s	# of samples n	Multiplier	Acute Dil'n Factor	Chronic Dil'n Factor	COMMENTS
				Acute ug/L	Chronic ug/L	Acute Mixing Zone ug/L	Chronic Mixing Zone ug/L											
Cadmium	0.994	0.994	1.0900	40.0000	8.8000	1.54	1.22	NO	0.99	0.942	9.50	0.86	0.74	77	1.75	34.0	117	
Copper	0.830	0.830	33.3000	4.8000	3.1000	32.69	33.12	YES	0.99	0.903	9.76	0.46	0.44	45	1.57	34.0	117	
Mercury	0.850	0.850	0.1700	1.8000	0.9400	0.20	0.18	NO	0.99	0.599	0.40	0.60	0.55	9	3.16	34.0	117	
Lead	0.951	0.951	4.0400	210.0000	8.1000	17.64	7.99	NO	0.99	0.949	221.00	1.67	1.15	88	2.22	34.0	117	
Zinc	0.946	0.946	56.7500	90.0000	81.0000	88.07	65.85	NO	0.99	0.947	691.00	0.88	0.76	84	1.72	34.0	117	
Nickel	0.990	0.990		74.0000	8.2000	3.45	1.00	NO	0.99	0.010	8.99	0.60	0.55	1	13.19	34.0	117	
Selenium	0.998	0.998		290.0000	71.0000	0.70	0.20	NO	0.99	0.010	1.80	0.60	0.55	1	13.19	34.0	117	
Acute WET				TU _A 0.30	TU _C	TU _A 0.17	TU _C	NO	0.99	0.518	TU _A , TU _C 1.63	0.60	0.55	7	3.54	34		Acute WET
Chronic WET, ACR=10					1.00		0.49	NO	0.99	0.518	16.30	0.60	0.55	7	3.54		117	Chronic WET

**OUTFALL 005
REASONABLE POTENTIAL CALCULATION
FOR
PROTECTION OF HUMAN HEALTH**

Red Dog Port Site Outfall 005 for web

NPDES Permit No. AK-004064-9

Revised 12/04	Ambient Concentration (Geometric Mean)	Water Quality Criteria for Protection of Human Health	Max concentration at edge of chronic mixing zone.	LIMIT REQ'D?	Expected Number of Compliance Samples per Month	AVERAGE MONTHLY EFFLUENT LIMIT	MAXIMUM DAILY EFFLUENT LIMIT	Estimated Percentile at 95% Confidence	Pn	Max effluent conc. measured ug/L	Coeff Variation CV	S	# of samples from which # in col. K was taken n	Multiplier	Calculated 50th percentile Effluent Conc. (When n>10)	Dilution Factor
Parameter	ug/L	ug/L	ug/L			ug/L	ug/L									
Cyanide	0.00	220000.00	0.00	NO	1	NONE	NONE	0.50	0.05	0.00	0.60	0.6	1	2.49	0.00	117.0
Manganese	0.0000	100.00	3.00	NO	1	NONE	NONE	0.50	0.05	141.00	0.60	0.6	1	2.49	0.00	117.0
Mercury	0.0250	0.05	0.02	NO	1	NONE	NONE	0.50	0.94	0.20	2.40	1.4	45	0.12	0.00	117.0
Nickel	0.0000	4600.00	0.19	NO	1	NONE	NONE	0.50	0.05	9.00	0.60	0.6	1	2.49	0.00	117.0
Selenium	0.0000	11000.00	0.04	NO	1	NONE	NONE	0.50	0.05	1.80	0.60	0.6	1	2.49	0.00	117.0
Zinc	18.6	69000.00	20.96	NO	1	NONE	NONE	0.50	0.93	534.00	0.76	0.7	43	0.36	284.00	111.0

50th %ile = 0

**OUTFALL 005
WATER QUALITY BASED
PERMIT LIMIT CALCULATIONS**

PARAMETER	Dilution (Dil'n) factor is the inverse of the percent effluent concentration at the edge of the acute or chronic mixing zone.		Permit Limit Calculation Summary							Waste Load Allocation (WLA) and Long Term Average (LTA) Calculations						Statistical variables for permit limit calculation						
	Acute Dil'n Factor	Chronic Dil'n Factor	Metal Criteria Translat or	Metal Criteria Translat or	Ambient Concentration	Water Quality Standard Acute	Water Quality Standard Chronic	Average Monthly Limit (AML) ug/L	Maximum Daily Limit (MDL) ug/L	Comments	WLA Acute ug/L	WLA Chronic ug/L	LTA Acute ug/L	LTA Chronic ug/L	LTA Coeff. Var. (CV) decimal	LTA Prob'y Basis decimal	Limiting LTA ug/L	Coeff. Var. (CV) decimal	AML Prob'y Basis decimal	MDL Prob'y Basis decimal	# of Samples per Month n	
			Acute	Chronic	ug/L	ug/L	ug/L	ug/L	ug/L		ug/L	ug/L	ug/L	ug/L	decimal	decimal	ug/L	decimal	decimal	decimal	n	
Cadmium	34.0	117.00	0.99	0.99	1.0900	40.0000	8.8000	563.0	1332.0	Tech-based limit	1324	903.16	309.4	377.2	0.86	0.99	309.4	0.86	0.95	0.99	4.00	0.99
Mercury	34.0	117.00	0.85	0.85	0.1700	1.8000	0.9400	29.9	65.4	Tech-based limit	56	90.26	15.2	42.6	0.72	0.99	15.2	0.72	0.95	0.99	4.00	0.85
Lead	34.0	117.00	0.95	0.95	3.9000	210.0000	8.1000	317.4	940.8	Tech-based limit	7011	495.30	931.5	118.9	1.67	0.99	118.9	1.67	0.95	0.99	4.00	0.95
Zinc	34.0	117.00	0.95	0.95	56.7500	90.0000	81.0000	525.2	1255.0	Tech-based limit	1187	2894.00	271.7	1188.4	0.88	0.99	271.7	0.88	0.95	0.99	4.00	0.95

STATE OF ALASKA

FRANK H. MURKOWSKI, GOVERNOR

**DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
WASTEWATER DISCHARGE PROGRAM**

ADEC
610 University Avenue
Fairbanks, AK 99712
PHONE: (907) 451-2142
FAX: (907) 451-2187
<http://www.state.ak.us/dec>

January 9, 2006

Mike Lidgard
NPDES Unit Manager
USEPA
1200 Sixth Avenue
Seattle WA, 98101

File No. 475.45.004
Certified Mail # 7004 1160 0004 2848 6588
Return Receipt Requested

**RE: Certificate of Reasonable Assurance for NPDES Permit AK-004064-9, Delong
Mountain Regional Transportation System Port Facility (Red Dog Port)**

Dear Mr. Lidgard;

In accordance with Section 401 of the Clean Water Act and provisions of the Alaska Water Quality Standards (18 AAC 70), the AK Dept. of Environmental Conservation (ADEC) issues the enclosed Certificate of Reasonable Assurance for NPDES permit AK-004064-9. NPDES Permit AK-004064-9 regulates wastewater discharges from the Red Dog Port facility located about 17 miles southeast of Kivalina, AK.

Notice of the draft 401 certification was published in newspapers of general circulation and public comments were accepted from 10/10/05 to 11/14/05, in accordance with 18 AAC 15.140. Comments were received on the draft NPDES permit and draft 401 Certification. The responses to the comments received on issues concerning ADEC authority were already submitted EPA to include in the EPA response to comments.

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 - 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. An informal review request must be delivered to the Director, Division of Water, 555 Cordova Street, Anchorage, AK 99501, within 15 days of receipt of the permit decision. An adjudicatory hearing request must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 30 days of the permit decision. If a hearing is not requested within 30 days, the right to appeal is waived.

If you have any questions regarding this certification please contact Luke Boles at 907-451-2142 or at luke_boles@dec.state.ak.us.

Sincerely,

SIGNATURE ON FILE
Gretchen Keiser
Program Manager
Wastewater Discharge Program

Clean Air, Clean Water

Enclosures: Certificate of Reasonable Assurance for NPDES Permit AK-004064-9

CC:

Lisa Olson, EPA Region 10, Seattle
Mark Thompson, TCAK
Al Ott, ADNR/OHMP, Fairbanks
Rose Barr, NANA

Amanda Henry, ADNR/OPMP, Anchorage
Tom Crafford, ADNR/OPMP, Anchorage
John Wood, AIDEA, Anchorage

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CERTIFICATE OF REASONABLE ASSURANCE

A Certificate of Reasonable Assurance, as required by Section 401 of the Clean Water Act, has been requested by TeckCominco Alaska for NPDES Permit AK-004064-9 for the discharge of treated domestic wastewater, treated non-domestic wastewater and stormwater from the Red Dog Port Facility.

Public Notice of the application for this certification was made in accordance with 18 AAC 15.140.

Water Quality Certification is required for the activity, because the activity will be authorized by an Environmental Protection Agency permit identified as NPDES Permit No. AK-004064-9 and a discharge will result from the activity.

This NPDES permit certification covers wastewater disposal from the following discharges:

1. Outfall 001 – Discharge from the domestic wastewater treatment plant and desalination plant backwash to the Chukchi Sea. Outfall 001 is located at Latitude 67° 34' N, Longitude 164° 03' W.
2. Outfall 005 – Discharge from the ion exchange plant (treated non-domestic wastewater including drainage and runoff from the concentrate storage buildings) to the Chukchi Sea. Outfall 005 is combined with Outfall 001 and located at Latitude 67° 34' N, Longitude 164° 03' W.
3. Discharge of snowmelt and rainfall runoff from industrial sites and the DeLong Mountain Regional Transportation System.

This certification shall become effective and expire on the same dates as the renewed NPDES Permit.

After review of the public comments received in response to the public notice, the Alaska Department of Environmental Conservation certifies that there is reasonable assurance that the activity and the resulting discharges are in compliance with the requirements of Section 401 of the Clean Water Act, which includes the Alaska Water Quality Standards, 18 AAC 70, provided that the terms and conditions of this certification are adhered to.

The Department reviewed the discharges with respect to the anti-degradation policy of the Alaska Water Quality Standards and finds the reduction in water quality to be in accordance with the requirements of 18 AAC 70.015, provided that the terms and conditions of this certification are made part of the final NPDES Permit.

The Department reviewed the discharges with respect to the Alaska Coastal Management Program (ACMP), required under 11 AAC 110, and finds that there are no major modifications proposed from the previous ACMP consistency finding. This facility was previously found to be consistent with the ACMP on August 29, 2000. Therefore, pursuant to 11 AAC 110.820(k)(3) and (4), consistency review is not required for this permit reissuance.

Through this certification, in accordance with 18 AAC 15.120 ADOPTION OF NPDES PERMITS, the final NPDES permit will constitute the permit required under AS 46.03.100 Waste Management and Disposal Authorization, provided that the terms and conditions of the final certification are made part of the final NPDES Permit. The department specifies the following permit terms and conditions under authority of AS 46.03.110(d):

- 1) The ADEC authorizes a Chronic Criteria Mixing Zone with 117:1 dilution for lead, zinc, chlorine and fecal coliform contained in the discharge from the combined Outfalls 001 and 005 to the Chukchi Sea to ensure that chronic aquatic life and human health criteria are met at all times at the edge of the mixing zone. Modeling has shown that lead is the controlling parameter for the chronic criteria mixing zone size for discharges from the combined outfall. The mixing zone is defined as a rectangle 60 meters by 20 meters. The 20 meter axis of the mixing zone is directly above the diffuser (the diffuser length is 20 meters) and oriented perpendicular to shore. The mixing zone extends 30 meters on each side of the diffuser (the side parallel to shore is 60 meters). The mixing zone includes the vertical extent of the water column from the water surface to, but not including, the bottom sediments.

Rationale: In accordance with State Regulations 18 AAC 70.240, the Department has authority to designate mixing zones in permits or certifications. This mixing zone will ensure that the most stringent water quality standard limitations for lead; 8.1 µg/L (chronic aquatic life criterion), is met at all points outside of the mixing zone.

The Department considered all aspects required in 18 AAC 70.015 (Anti-degradation) and 18 AAC 70.240-270 (Mixing Zones) including, but not limited to, the potential risk to human health and ecological resources based on existing monitoring data of the Chukchi Sea water quality, effluent water quality achieved by existing wastewater treatment at the facility and mixing zone modeling of the discharge.

The Department finds that the size of the mixing zone authorized in this certification is appropriate and provides reasonable assurance that existing uses of the Chukchi Sea outside of the mixing zone are maintained and fully protected.

- 2) The ADEC authorizes an Acute Mixing Zone with 34:1 dilution for zinc and chlorine contained in the discharge to ensure that acute aquatic life criteria are met at all times at the edge of the mixing zone from the combined outfalls 001 and 005 to the Chukchi Sea. Modeling has shown that zinc is the controlling parameter for the mixing zone size from the combined outfall. The acute mixing zone is defined as a rectangle 23 meters by 20 meters during either discharge scenario. The 20 meter axis of the mixing zone is directly above the diffuser (the diffuser length is 20 meters) and oriented perpendicular to shore. The mixing zone extends 11.5 meters on each side of the diffuser (the side parallel to shore is 23 meters). The mixing zone includes the vertical extent of the water column from the water surface to, but not including, the bottom sediments.

Rationale: In accordance with State Regulations 18 AAC 70.240, the Department has authority to designate mixing zones in permits or certifications. This mixing zone will

ensure that the most stringent water quality standard limitations for zinc of 90 µg/L (acute aquatic life criterion), is met at all points outside of the mixing zone.

The Department considered all aspects required in 18 AAC 70.015 (Anti-degradation) and 18 AAC 70.240-270 (Mixing Zones) including, but not limited to, the potential risk to human health and ecological resources based on existing monitoring data of the Chukchi Sea water quality, effluent water quality achieved by existing wastewater treatment at the facility and mixing zone modeling of the discharge.

The Department finds that the size of the mixing zone authorized in this certification is appropriate and provides reasonable assurance that existing uses of the Chukchi Sea outside of the mixing zone are maintained and fully protected.

- 3) The Department authorizes the following Outfall 001 and 005 effluent limitations and monitoring requirements for the parameters contained in Sections I and III of the Draft NPDES Permit AK-004064-9:

Table 1: Limitations and Frequency of Monitoring for Outfall 001

Parameter ¹	Daily Maximum	Weekly Average	Monthly Average	Sample Location	Sample Frequency	Sample Type ²
Biochemical Oxygen Demand (BOD ₅) ³	---	45.0 mg/L 4.5 lbs/day	30.0 mg/L 3.0 lbs/day	Influent Effluent	1/month	24-hr Comp.
Total Suspended Solids (TSS) ³	---	45.0 mg/L 4.5 lbs/day	30.0 mg/L 3.0 lbs/day	Influent Effluent	1/month	24-hr Comp.
Fecal Coliform, #/100 ml	1200	800	400	Effluent	1/month	Grab
Dissolved Oxygen	---	---	---	Effluent	1/month	Grab
Total Residual Chlorine (µg/L)	1000	---	500	Effluent	3/week	Grab
pH ⁴	6.5 – 8.5 s.u.			Effluent	3/week	Grab
Flow, gpd	---	12,000	---	---	Continuous	Recorder
Cadmium, µg/L ⁵	---	---	---	Effluent	1/month in June, July, August and September	24-hr Comp.
Copper, µg/L ⁵	---	---	---	Effluent	1/month in June, July, August and September	24-hr Comp.
Lead, µg/L ⁵	---	---	---	Effluent	1/month in June, July, August and September	24-hr Comp.

Parameter ¹	Daily Maximum	Weekly Average	Monthly Average	Sample Location	Sample Frequency	Sample Type ²
Zinc, µg/L ⁵	---	---	---	Effluent	1/month in June, July, August and September	24-hr Comp.

Notes:

1. If the discharge concentration falls below the method detection level (MDL), the Permittee shall report the effluent concentration as "less than {numerical MDL}" on the discharge monitoring report (DMR). If the discharge concentration falls between the MDL and the minimum level (ML), the Permittee shall report the effluent concentration as "less than {numerical ML}" on the DMR. Actual analytical results shall be reported on the DMR when the results are greater than the ML. For averaging, samples below the MDL shall be assumed equal to zero, and samples between the MDL and the ML shall be assumed equal to {numerical MDL}. The Permittee shall report the number of non-detects for the month in the "Comment Section" of the DMR.
2. Effluent samples collected shall be representative of the effluent discharged without dilution from or contact with any outside sources. Results of analyses conducted under Part I.A.3. of this permit shall be submitted on the monthly DMR.
3. The Permittee shall collect influent and effluent samples on the same day.
4. The pH must not be less than 6.5 s.u. nor greater than 8.5 s.u.
5. Cadmium, copper, lead, and zinc shall be analyzed and reported as total recoverable.

Table 2: Limitations and Frequency of Monitoring for Outfall 005

Parameter ¹	Daily Maximum	Monthly Average	Sample Location	Sample Frequency	Sample Type
Copper, µg/L ²	300.0	150.0	Effluent	1/week	24-hour Comp.
Zinc, µg/L ²	1255.0	525.0	Effluent	1/week	24-hour Comp.
Lead, µg/L ²	600.0	300	Effluent	1/week	24-hour Comp.
Cadmium, µg/L ²	100.0	50.0	Effluent	1/week	24-hour Comp.
Mercury, µg/L ³	2.0	1.0	Effluent	1/week	24-hour Comp.
Total Suspended Solids, mg/L	30.0	20.0	Effluent	1/week	24-hour Comp.
pH, s.u. ⁴	6.5 – 8.5		Effluent	1/day	Grab
Flow, mgd	1.08	---	Effluent	Continuous	Recorder

Notes:

1. If the discharge concentration falls below the method detection level (MDL), the Permittee shall report the effluent concentration as "less than {numerical MDL}" on the discharge monitoring report (DMR). If the discharge concentration falls between the MDL and the minimum level (ML), the Permittee shall report the effluent

concentration as "less than {numerical ML}" on the DMR. Actual analytical results shall be reported on the DMR when the results are greater than the ML. For averaging, samples below the MDL shall be assumed equal to zero, and samples between the MDL and the ML shall be assumed equal to {numerical MDL}. The Permittee shall report the number of non-detects for the month in the "Comment Section" of the DMR.

2. Copper, zinc, lead, and cadmium shall be analyzed and reported as total recoverable.
3. Mercury shall be analyzed and reported as total.
4. The pH must not be less than 6.5 s.u. nor greater than 8.5 s.u.

Rationale: In accordance with State Regulations 18 AAC 70.245, the Department has authority to ensure that existing uses of the waterbody outside the mixing zone are maintained and fully protected. The specified effluent limitations and monitoring will provide evidence to the Department that the treatment and mixing zone size are adequate to protect all designated uses in the receiving water.

January 9, 2006

Date

Signature on file

Gretchen Keiser
Program Manager
Wastewater Discharge Program