RESPONSE TO COMMENTS

on the Draft NPDES Permit and Fact Sheet for ConocoPhillips Alaska, Inc. (CPAI), Kuparuk Seawater Treatment Plant

NPDES Permit Number AK-004335-4

January 2011

Background

On October 28, 2010, the U.S. Environmental Protection Agency, Region 10 (EPA) issued a draft National Pollutant Discharge Elimination System (NPDES) permit for the Kuparuk Seawater Treatment Plant (STP) for public review and comment. The Kuparuk STP is owned and operated by ConocoPhillips Alaska, Inc. (CPAI). The draft permit proposed to reauthorize permit coverage for the following discharges from the Kuparuk STP: strainer/filter backwash system (Outfall 001) and marine life return system (Outfall 002).

The public comment period ended on November 29, 2010. EPA received comments on the documents from the permittee (CPAI) and one comment/question from the Inupiat Community of the Arctic Slope (ICAS).

Response to Comments Received During the Public Comment Period

I. General Comment

The Inupiat Community of the Arctic Slope (ICAS) submitted the following question, "How have the concerns we participated in over many months been incorporated to this document?"

Response

The Kuparuk STP permit includes effluent limitations for temperature and monitoring requirements for whole effluent toxicity (WET). These are new requirements and are more restrictive compared to the existing (administratively extended) permit. EPA included these additional requirements in response to concerns expressed by tribal governments on the North Slope.

II. Draft Permit

Comment II.1

Page 3, Table 1, Outfall 001, pH. CPAI requests that the minimum and maximum daily limits of pH be removed from the permit. The seawater treatment processes currently in place at the Kuparuk STP that take place upstream of the filters or within the filter backwash system would not appreciably affect the seawater's pH. Variations in pH that do occur are the result of natural variations in the intake waters that are also the receiving water. Although seawater is highly buffered and open ocean conditions

typically do not vary more than 0.2 to 0.5 pH units; such stability is often not seen in the productive, shallow water environments or estuaries. On the North Slope, near shore conditions are far more variable. During spring breakup, the rivers and near shore waters receive considerable runoff from melt water draining the tundra. The tundra waters are often poorly buffered and pH tends to vary widely. A compilation of over 2000 surface measurements from the tundra environment in the vicinity of Prudhoe Bay and Kuparuk oil fields shows a pH range of 4.5 to 10.3. Depending on the wind conditions during the summer open water period, the seawater intake at the Kuparuk STP can be heavily influenced by either the discharge from the Colville River or from estuarine waters of Simpson Lagoon and therefore the STP's effluent will be a reflection of the highly variable natural conditions rather than an indication of any processes taking place at the facility. For these reasons, CPAI believes the pH limits should be removed from the permit, but that monitoring of pH would continue as stipulated for evaluation purposes. It was for these same reasons that pH limits were not required in the existing permit and effluent data from the facility indicated that pH was not a big concern, although a mixing zone was still warranted due to the highly variable natural conditions.

Response II.1

EPA has reviewed the pH data contained in the Discharge Monitoring Reports (DMRs) for the Kuparuk STP for the 5-year period beginning January 2005 through December 2009. The effluent pH range of 6.0 to 9.0 for Outfall 001 is consistently achieved. Due to the fact that pH is a water quality-based standard and with the Alaska Department of Environmental Conservation (ADEC) granting the requested 100-meter mixing zone, EPA believes the pH effluent limit of no more than 9.0 and no less than 6.0 is reasonable. EPA is retaining this requirement in the final permit.

Comment II.2

Page 3, Table 1, Outfall 001, Request change. Temperature – Open Water Conditions should read 16^{o}C and Temperature – Under Ice Conditions should read 12^{o}C. The mixing zone (MZ) application (refer to Table 6 in MZ application) showed a 15.9^{o}C difference in summer and a 12^{o}C difference in winter, which equates to a required dilution of 14.9:1 for summer and 11:1 for winter. It appears that these dilutions were incorrectly transformed into temperature differences. Dilution modeling indicated that both the summer (16^{o}C) and winter (12^{o}C) temperature differences would be met with a 100-meter mixing zone.

Response II.2

EPA has reviewed CPAI's mixing zone application, submitted to ADEC in June 2010. The temperature limits included in the draft permit were made in error. As such, EPA has revised Table 1 of the permit for Outfall 001 to read Temperature – Open Water Conditions, not to exceed 16^{o}C above ambient, and Temperature – Under Ice Conditions, not to exceed 12^{o}C above ambient.

Comment II.3

Page 3, Table 1, Footnote 3. Request clarification to footnote to read: "Applicable when biotreatment is conducted upstream of the filters or when chlorination/dechlorination agents are used upstream of the filters or in the filter backwash system." It is our understanding that EPA wanted testing when these chemicals were used at some point on the outfall system and had a potential to be discharged to the receiving water environment. The reason for this clarification is that seawater treatment does occur downstream of the filters on the seawater used for injection into the oil reservoir that has no possibility of being discharged to the receiving water environment from either Outfall 001 or 002. These

downstream processes on the "sales" line have no bearing on the quality of water being discharged from the STP from either of the outfalls. At the present time, plumbing is not in place to treat the seawater upstream of the filters with either biocides or chlorine. However, CPAI foresaw this upstream treatment as a possibility and requested that change in the permit application.

Response II.3

On July 21, 2008, CPAI submitted a letter to EPA requesting an amendment to its 2004 permit application. The amendment requested two additional activities: 1) the intermittent use of biocide and chlorine upstream of the filters to control biofouling and bacterial activity, and 2) use dechlorinating agents to neutralize residual chlorine in the filter backwash. Based on this request, EPA is requiring Whole Effluent Toxicity (WET) testing to ensure that the discharge would not cause a toxic effect to the receiving environment. Thus, WET testing would apply when biotreatment is conducted upstream of the filters or when chlorination/dechlorination agents are used upstream of the filters or in the filter backwash system. EPA has revised the permit to include this clarification.

Comment II.4

Page 3, Table 1, WET testing schedule. Request reducing from quarterly to annually, if after the first full year of testing or after the first four WET tests indicate that no toxic effects were seen. If subsequent annual tests indicate a toxic effect, then testing would revert back to the quarterly testing requirement.

Response II.4

EPA believes this request is reasonable and has revised the permit to include the change in WET monitoring frequency from quarterly to annually, if after the first full year of testing or after the first four WET tests indicate that no toxic effects were seen. Quarterly testing would resume if subsequent annual tests exceed the toxic limit. The revised permit language achieves EPA's objectives of ensuring the Outfall 001 effluent, when biocides and/or chlorination/dechlorination chemicals are used upstream of the filters or in the filter backwash system, do not result in toxic effects.

Comment II.5

Page 4, Table 1, Outfall 002, Request change. Temperature – Open Water Conditions should read 15^{o}C not 14^{o}C and Temperature – Under Ice Conditions should read 15^{o}C not 9^{o}C. The MZ application (refer to Table 7 in MZ application) showed 15^{o}C difference for both summer and winter, which equates to a required dilution of 14:1. It appears that the 9^{o}C in this table is in error, and that the dilutions were incorrectly transformed into temperature differences. Dilution modeling indicated that both the summer (15^{o}C) and winter (15^{o}C) temperature differences would be met with a 100-meter mixing zone for Outfall 002.

Response II.5

EPA has revised Table 1 of the permit for Outfall 002 to read Temperature – Open Water Conditions, not to exceed 15^{o}C above ambient, and Temperature – Under Ice Conditions, not to exceed 15^{o}C above ambient. See Response II.2, above.

Comment II.6

Page 4, Table 1, Outfall 002. CPAI requests that the limit of 1.3 million gallons per day (MGD) for maximum daily flow for Outfall 002 that was added to our permit limits be removed. There are no

treatment processes on this waste stream other than screening and its sole purpose is to discharge large screened particles and any marine life back to the receiving water environment. It is not expected that the 1.3 MGD limit would be exceeded; however, the removal of this limit would give CPAI the maximum flexibility to temporarily increase this flow if necessary as a result of other activities within the STP, with no adverse effects to the environment.

Response II.6

EPA's key concern regarding the Outfall 002 discharge is temperature. As the commenter noted, there is no chemical treatment associated with this outfall. As such, EPA has removed the flow limit from Outfall 002; however, it is replaced by a flow monitoring requirement.

Comment II.7

Page 4, Section I.D.2. CPAI requests that this requirement be deleted from the permit. Reporting of this inventory information in the annual report seems to imply that these quantities of chemicals are being discharged and give a false impression of our activities when in fact that is not the case. At the present time, the system is not plumbed to be able to treat seawater upstream of the filters, and if modifications are made to the facility that would allow this activity, CPAI would utilize best management practices (BMPs) and standard operating procedures (SOPs) to ensure that the vast majority of any chemicals used would be injected into the oil reservoir and not discharged to receiving water environment. The procedure of upstream treatment with either biocide or chlorine would be performed after a filter backwash cycle so that any chemicals used in treatment would then be forward flushed down hole to the oil reservoir. If these modifications to the facility are undertaken and these treatment procedures implemented, their use would be very intermittent and on an as-needed basis, in which case WET testing requirements would apply. If these procedures are implemented, it is expected that only very trace levels of biocide and/or chlorination/dechlorination chemicals would be present after an entire filter cycle when the filter tank was again cycled into its backwash mode.

Response II.7

EPA believes that if the facility modifications are made, then it is important to report any use of biocides and/or chlorination/dechlorination chemicals in the system and subsequently discharged. EPA has revised this permit provision to require submittal of an annual report summarizing the monthly use, if any, including type and quantities of biocides and/or chlorination/ dechlorination chemicals upstream of the filters or in the filter backwash system.

Comment II.8

Page 6, Section I.G, first paragraph, 2nd to last sentence. Request clarification to wording here and throughout permit, fact sheet, and 401 certification. Suggest rewording to the following: "No toxicity testing is required during quarters when no biocides or chlorination/dechlorination chemicals are used upstream of the filters or in the filter backwash system."

Response II.8

EPA has revised the permit to include this clarification language.

Comment II.9

Page 6, Section I.G.1. Request deletion of the second sentence. The only parameters for which testing is required in Part I.B are temperature, pH, and TRC, none of which can be stored or taken from a 24-hour composite as a split. Wording should simply state that grab samples or recordings of these parameters will be performed during the 24-hour period during which the toxicity samples was obtained.

Response II.9

EPA has revised the permit to remove the language pertaining to split samples and require that grab samples or recordings of the parameters identified in Part I.B of the permit be taken during the same 24-hour period as the 24-hour composite sample used for the toxicity tests.

Comment II.10

Page 6, Section I.G.2(a). Request clarification and rewording to the following: "For Outfall 001, short-term chronic toxicity tests must be conducted quarterly when biocides and/or chlorination/dechlorination chemicals are used upstream of the filters or in the filter backwash system."

Response II.10

EPA has revised the permit to include the clarification language.

Comment II.11

Page 6, Table 2. CPAI requests deletion of the 7-day topsmelt larval growth and survival test for a number of reasons. First, if modifications to the facility's plumbing are undertaken that would allow treatment chemicals to be utilized upstream of the filters or in the filter backwash system, their use would be intermittent, short-term, and on an as-needed basis with total system treatment taking less than 24 hours. Also, this treatment would probably not be repeated for a number of months. As such, a 7-day test would not be appropriate and the short-term bivalve test listed in Table 2 is typically much more sensitive and more appropriate for a short-term treatment procedure. Second, the 7-day test requires daily renewal of water which will necessitate shipment of 3-4 samples to accomplish the renewals and still be within sample hold time. Since there are no toxicity laboratories in Alaska for these species, shipment and delivery to a West Coast laboratory can be challenging on the North Slope.

Response II.11

EPA agrees that it does not make sense to run the 7-day test if the discharge is less than 24-hrs. As such, EPA has revised the note in Table 2 to say, "If biocides and/or chlorination/dechlorination chemicals are used upstream of the filters or in the filter backwash system resulting in a continuous discharge that is less than 48 hours, then only the bivalve test is required. If the discharge exceeds a 48-hour duration and in the event the topsmelt is unavailable, the inland silverside (*M. beryllina*) larval survival and growth method may be used as a substitute…"

Comment II.12

Page 7, Section I.G.2(e). CPAI requests that this requirement be deleted. It is felt that these intermediate calculations are of limited use and laboratories do not typically report them. Also, the endpoint of the test is a no observed effect concentration (NOEC) and not the LC_{50}.

Response II.12

EPA disagrees with this comment and retains the LC_{50} requirement in the permit. Monitoring of mortality every 24 hours will provide useful data indicating acute toxicity during a chronic test.

Comment II.13

Page 7, Section I.G.2. CPAI requests that an additional stipulation is added to the permit. Increase the hold-time on samples from the standard 36 hours to 72 hours from the time of sample collection to the first use in the laboratory. This increase in hold time is allowed under the test protocol methodology for

extenuating circumstances and will be necessary for sample shipments from the North Slope. CPAI will attempt to have the test initiated as soon as possible after sampling, but would like to have this stipulation added to the permit to preclude inadvertent test failures due to shipping challenges.

Response II.13

While the regulations allow up to 72 hours for sample holding time with the approval of the Regional Administrator (RA), sufficient data must also be provided to assure such variance does not affect the integrity of the sample. The data must then be forwarded by the RA to EPA's Director of the Environmental Monitoring Systems Laboratory in Cincinnati, Ohio for technical review and recommendations for action on the variance application.

Due to lack of sufficient data, EPA is denying CPAI's request to add the 72 hour holding time in the permit.

Comment II.14

Page 7, Section I.G.3. The WET test sample dilutions and receiving water concentration (RWC) have been incorrectly calculated. The dilution of 12.3:1 is based on the chronic Alaska water quality standard (AQWS) for total residual chlorine (TRC) of 7.5 µg/L and a regulatory testing limit of 100 µg/L, resulting in a dilution factor of: 100/7.5 = 13.3 (12.3:1 dilution) assuming the background concentration in the receiving water is 0.0 µg/L. Using the dilution factor of 13.3, the RWC should be 7.5% effluent, and the test concentrations should be 30, 15, 7.5, 3.75, and 1.875%. This error of using the dilution ratio in place of dilution factor and vice versa shows up a number of times in draft permit and fact sheet. Also, based on these changes, the additional test concentrations of 64 and 100%, would be 60 and 100%.

Response II.14

EPA has revised the permit to include the correct WET testing dilutions and RWC.

Comment II.15

Page 8, Section I.G.4, First paragraph. The chronic toxicity trigger should be 13.3 TU_c not 12.3 TU_c. Refer to comment No. 14 above.

Response II.15

EPA has revised the permit to include the correct chronic toxicity trigger for WET testing, which is 13.3 TU_c.

Comment II.16

Page 9, Section I.G.4, Initial Investigation TRE Workplan. CPAI requests that this requirement be removed from the permit or amended. Historic WET testing that was performed at the Kuparuk STP showed no toxic effects of the effluent discharge. CPAI requests that the prior development of an initial workplan be deleted and replaced with language that indicates that the TRE procedures would be implemented and a plan developed if chronic toxicity is indicated above the toxic trigger TU_c. Since it is expected that there will be months between filter system treatment procedures (if facility modifications are undertaken that allow filter system treatment), there will be more than sufficient time to develop an initial TRE workplan prior to further testing if toxicity is found to exceed the toxic trigger.

Response II.16

EPA has revised the permit to include submittal of a TRE workplan if and when chronic toxicity is triggered.

Comment II.17
Page 9, Section I.G.5 and I.G.6. Change the chronic toxicity trigger to 13.3 TU_c throughout these sections. See comment No. 14 above.

> ***Response II.17***
> EPA has revised the permit to include the correct chronic toxicity trigger for WET testing, which is 13.3 TU_c.

Comment II.18
Page 9, Section I.G.5(b). CPAI requests that this requirement be deleted. This stipulation is standard permit language that does not apply to the Kuparuk STP operations. At the present time the system is not plumbed to be able to treat seawater upstream of the filters or in the filter backwash system. If modifications to facility are undertaken and treatment procedures implemented, their use would be short-lived, very intermittent, and on as needed basis which would preclude retesting of the effluent when biocides and/or chlorination/dechlorination chemicals are being used upstream of the filters or in the filter backwash system. CPAI realizes the reasons that EPA would want a retest, but since treatment processes would not be performed on an ongoing basis, retesting would be impossible on the schedule prescribed in the permit. Suggest rewording to: "The permittee will retest the effluent at the next time that biocides and/or chlorination/dechlorination chemicals are used upstream of the filters or in the filter backwash system." It is expected that it could be months before any subsequent treatment is undertaken, therefore any additional testing would probably be performed under the standard quarterly WET testing schedule specified in the permit.

> ***Response II.18***
> EPA agrees that the retesting requirement does not make sense due to the short-term intermittent use of treatment chemicals, if facility modifications are made. EPA has revised the permit to require retesting of the effluent the next time biocides and/or chlorination/dechlorination chemicals are used upstream of the filters or in the filter backwash system.

Comment II.19
Page 9, Sections I.G.5 and I.G.6. Request change from six more accelerated tests to retest the next time that biocides and/or chlorination/dechlorination chemicals are being used upstream of the filters or in the filter backwash system. See comment No. 18 above.

> ***Response II.19***
> EPA has revised the permit to require retesting of the effluent the next time biocides and/or chlorination/dechlorination chemicals are used upstream of the filters or in the filter backwash system. See Response II.18, above.

Comment II.20
Page 13, Section III.B.2, First sentence. If this requirement is kept in the final permit, suggest rewording to: The permittee must submit an annual report summarizing the monthly use of biocides and/or chlorination/dechlorination chemicals that are being used upstream of the filters or in the filter backwash system.

Response II.20

EPA has revised the permit to include the suggested language, with an additional provision that the type and quantities of biocides and/or chlorination/dechlorination chemicals must also be reported. See Response II.7, above.

Comment II.21

Page 13, Section III.B.2. - Second to last sentence. Suggest rewording to say "all historic data beginning with the start date of this permit" as much of the historic data does not exist in a readily available and/or an electronic format. Also, the facility has been operating for over 20 years and current operations are not the same as those in the past due to ongoing improvements and modifications in treatment procedures. This requirement will require additional resources and CPAI will need to establish an implementation plan to carry it out.

Response II.21

It is EPA's intent to require reporting of historical data for this permit term. As such, the permit has been revised to include the language as requested.

Comment II.22

Page 15, Section III.I. Please clarify and make consistent the reporting requirements. The introduction to this section says to provide notice to the Director of Office of Water and Watersheds (OWW) and the ADEC. Section III.I.3 of this same section says to provide notice to the NPDES Permits Unit Manager in OWW.

Response II.22

EPA has revised the permit provisions to require reporting to the Director of the Office of Water and Watersheds (OWW).

Comment II.23

Section should read to submit prior notice to the "Director and ADEC", not Idaho.

Response II.23

EPA has revised the permit to remove the reference to Idaho.

III. Fact Sheet

Comment III.1

General – CPAI feels it would be beneficial to insert some additional clarifying language into the fact sheet regarding the term "treatment." The Kuparuk facility is a Seawater Treatment Plant which lends itself to confusion over waste treatment, which is the subject of numerous permit conditions (i.e. those focusing on by-pass, annual reporting, etc.). The facility is primarily removing debris and sediment from the water body and returning them to the sea with the main treatment being to the seawater that is injected down hole into the oil reservoir with no possibility of being discharged to the receiving water environment. The discharge process consists of routing this material and carrier water to either Outfall 001 or 002. It is fair to say there is no physical or chemical treatment for the purposes of conditioning the wastewater discharge and water quality is maintained by BMPs.

Response III.1
EPA has added clarifying text to Section II.B of the fact sheet.

Comment III.2
Page 8, Second paragraph, second sentence. Request change "The system consists of three self-backwashing strainers…." to read "The system consist of two self-backwashing strainers…."

Response III.2
EPA has made the change as requested.

Comment III.3
Page 12, Table 1, Outfall 001, pH. CPAI requests that the minimum and maximum daily limits for pH be removed from the permit. Refer to comment No. 1 above for the draft permit.

Response III.3
EPA has reviewed the pH data contained in the Discharge Monitoring Reports (DMRs) for the Kuparuk STP for the 5-year period beginning January 2005 through December 2009. The effluent pH range of 6.0 to 9.0 for Outfall 001 is consistently achieved. Due to the fact that pH is a water quality-based standard and with the Alaska Department of Environmental Conservation (ADEC) granting the requested 100-meter mixing zone, EPA believes the pH effluent limit of no more than 9.0 and no less than 6.0 is reasonable. EPA is retaining this requirement in the final permit. See Response II.1, above.

Comment III.4
Page 12, Table 1, Outfall 001. Temperature – Open Water Conditions should read 16°C and Temperature – Under Ice Conditions should read 12°C. Refer to comment No. 2 above for draft permit.

Response III.4
EPA has revised Table 1 for Outfall 001 to read Temperature – Open Water Conditions, not to exceed 16^{o}C above ambient, and Temperature – Under Ice Conditions, not to exceed 12^{o}C above ambient. See Response II.2, above.

Comment III.5
Page 13, Table 1, Outfall 002. Temperature – Open Water Conditions should read 15°C and Temperature – Under Ice Conditions should read 15°C. Refer to comment No. 5 above for draft permit.

Response III.5
EPA has revised Table 1 for Outfall 002 to read Temperature – Open Water Conditions, not to exceed 15^{o}C above ambient, and Temperature – Under Ice Conditions, not to exceed 15^{o}C above ambient. See Response II.2, above.

Comment III.6
Page 13, Table 1, Footnote 3. Request clarification to footnote to read: "Applicable when biotreatment is conducted upstream of the filters or when chlorination/ dechlorination agents are used upstream of the filters or in the filter backwash system."

Response III.6
EPA has made the changes in the fact sheet and permit as requested.

Comment III.7
Page 13, Table 1 and Outfall 002, Bullet 1. CPAI requests that the limit of 1.3 MGD for maximum daily flow for Outfall 002 be removed from the permit. There are no treatment processes on this waste stream and its sole purpose is to discharge large screened particles and any marine life back to the receiving water environment. It is not expected that the 1.3 MGD limit would be exceeded, however its removal would give CPAI the maximum flexibility to temporarily increase this flow if necessary as a result of other activities within the STP.

Response III.7
EPA has removed the flow limit from Outfall 002; however, it is replaced by a flow monitoring requirement. See Response II.6, above.

Comment III.8
Page 13, Outfall 001, Bullet No. 3. Temperature differences should read 16°C for open water and 12°C for under-ice conditions. Refer to comment No. 2 above for draft permit.

Response III.8
EPA has revised the temperature limits for Outfall 001 to read Temperature – Open Water Conditions, not to exceed 16^{o}C above ambient, and Temperature – Under Ice Conditions, not to exceed 12^{o}C above ambient. See Response II.2, above.

Comment III.9
Page 13, Outfall 001, Bullet No. 4. Clarify to read "...when chlorination/ dechlorination agents are used upstream of the filters or in the filter backwash system."

Response III.9
EPA has revised the fact sheet to include the clarification as requested.

Comment III.10
Page 13, Outfall 002, Bullet No. 2. Temperature differences should read 15°C for open water and 15°C for under-ice conditions. Refer to comment No. 5 above for draft permit.

Response III.10
EPA has revised the temperature limit for Outfall 002 to read Temperature – Open Water Conditions, not to exceed 15^{o}C above ambient, and Temperature – Under Ice Conditions, not to exceed 15^{o}C above ambient. See Response II.2, above.

Comment III.11
Page 14, Table 2. The dilution factors listed in the table are actually dilutions that should read: 14.9:1, 11:1, 12.3:1, 6.7:1, 14:1, and 14:1. If expressed as dilution factors or differences from background they would be: 15.9, 12, 13.3, 7.7, 15, and 15. It appears that the dilution factor of 9 in this table is in error, and CPAI is not sure where the 9 came from but it was not part of their MZ request as stipulated in the table. Refer to comments No. 2 and 5 above for draft permit.

Response III.11
EPA has corrected the dilution factors and has added a “dilution ratio” column in Table 2.

Comment III.12
Page 14, Table 2, Title. Title should read "Outfalls 001 and 002".

Response III.12
EPA has made the corrections to the title of Table 2.

Comment III.13
Page 15, Section E, last paragraph. Clarify to read "...when chlorination/ dechlorination chemicals are used upstream of the filters or in the filter backwash system."

Response III.13
EPA has revised the fact sheet to include the clarification as requested.

Comment III.14
Page 16, Table 3, Footnote 1. Clarify to read "...chlorination/dechlorination chemicals are used upstream of the filters or in the filter backwash system."

Response III.14
EPA has revised the fact sheet to include the clarification as requested.

Comment III.15
Page 18, Section VI.E. Clarify first sentence to read "...chlorination/dechlorination chemicals are used upstream of the filters or in the filter backwash system."

Response III.15
EPA has revised the fact sheet to include the clarification as requested.

Comment III.16
Page 18, Section VI.E. Toxicity trigger should be 13.3 TU_c and the RWC should be 7.5%. Refer to comment No. 12 for draft permit.

Response III.16
EPA has revised the permit to include the correct chronic toxicity trigger for WET testing and the RWC.

Comment III.17
Page 19, Section VII.C, Basis for Annual Report. CPAI requests that the requirement for reporting the use of biocides and/or chlorination/dechlorination chemicals used in the Combined Wastewater Discharge (Outfall 001) be removed from the permit. The Reporting of this inventory information on the annual report with the March DMR seems to imply that these quantities of chemicals are being discharged to the environment when in fact that is not the case. At the present time the system is not even plumbed to be able to treat seawater upstream of the filters or in the filter backwash system. If modifications are made to the facility that would allow this activity, CPAI would utilize best management practices (BMPs) and standard operational procedures (SOPs) to ensure that the vast majority of any chemicals used would go down hole to the oil reservoir and not into the receiving water environment. The procedure of upstream treatment with either biocide or chlorine would be performed after a filter backwash cycle so that that any chemicals used in treatment would then be forward flushed

down hole to the oil reservoir. These are process treatment chemicals, not additives to the wastewater being discharged.

Response III.17

EPA has revised this requirement to say: The permittee must submit an annual report summarizing the monthly use of biocides and/or chlorination/ dechlorination chemicals that are being used upstream of the filters or in the filter backwash system. EPA also has provided clarification that historical data begins with the effective date of the permit. See Responses II.7 and II.21, above.

Comment III.18

Page 19, Section VII.D, Operations and Maintenance Plan. This requirement does not appear in the draft permit, and CPAI requests that it be deleted from the fact sheet. The procedures and requirements described in this section will be addressed and covered in our BMP and QAP for the Kuparuk STP and will include items listed in the draft permit.

Response III.18

Development of an Operations and Maintenance Plan is not a requirement of the permit, therefore, EPA has deleted it from the fact sheet.

Comment III.19

Page 31, Bullet 2. The equations for reasonable potential evaluation with numeric criteria are in error. This can easily be seen for the example of a 1:1 dilution. The final reduced equation in this section for a 1:1 dilution (50% effluent & 50% receiving water, $V_e = V_d$), further reduces to $C_d = C_e$. This is in error, when in fact the final receiving water concentration for a 1:1 dilution, C_d should be 50% of C_e or $C_d = C_e/2$. This error arises in the first equation that should read:

$$C_d \times (V_d + V_e) = (C_e \times V_e) + (C_u \times V_d),$$

where the final mixed volume is the sum of the receiving water volume used for mixing and the effluent volume. Note: This equation error may be the cause of the other dilution factor errors that crop up in the permit and fact sheet.

Response III.19

EPA has corrected the error in the reasonable potential equations.

Comment III.20

CPAI requests that an additional stipulation be added to the draft permit and fact sheet to allow for the continued use of Outfall 003 and to retain the existing flexibility of freeze-protection mitigation measures in the event of an emergency shutdown at the STP or of the seawater injection system. Although rarely used (used only once in the last 25 years), this contingency has been in place for the Kuparuk STP since its inception and the original permit was first granted in 1985. The current 1999 fact sheet for the facility states the following:

> "An ‘over ice line’ discharge may result from implementation of freeze-protection measures during emergency shutdown conditions or during maintenance work on the STP plant distribution line. This ‘over ice line’ is only used on rare occasions and only after ARCO has obtained agency permission."

The purpose of this system is to allow the emptying of the water lines to the seawater injection facilities in the case of an unavoidable failure of the injection system or STP. The emptying of these lines would be necessary in the winter to avoid freezing of the lines and the consequential sever property damage and substantial environmental harm that may result from the catastrophic freezing and rupturing of cross country seawater lines. The original permit for the STP facility allowed this discharge as a separate outfall (Discharge 003) and permitted a one-time test of the over-ice emergency dump system.

Response III.20

Since CPAI did not make this request in its permit application on October 20, 2004 or in the amendment to the application on July 21, 2008, EPA is unable to grant this request at this time without allowing another public review and comment opportunity. CPAI may choose to submit a formal permit application modification requesting authorization of Outfall 003 for an over-ice emergency water release system, which would result in a major permit modification pursuant to 40 C.F.R. 122.62(a)(15).