



*“The mission of the Council is to represent the citizens of Cook Inlet in promoting environmentally safe marine transportation and oil facility operations in Cook Inlet.”*

*Members*

May 20, 2013

*Alaska State Chamber of Commerce*

Gerry Brown  
Division of Water  
Alaska Department of Environmental Conservation  
555 Cordova Street  
Anchorage, AK 99501

*Alaska Native Groups*

SUBJECT: Cook Inlet RCAC Comments on Draft APDES Permit No. AKG-31-5100

*Environmental Groups*

Dear Mr. Brown:

*Recreational Groups*

The Cook Inlet Regional Citizens Advisory Council (RCAC) is responding to your call for comments regarding the Proposed Authorization to Discharge under the APDES for Mobile Oil and Gas Exploration Facilities in State Water in Cook Inlet (Draft General Permit Number AKG-31-5100). The proposed geographic area, activities, and facilities covered in this draft permit are within our areas of concern and, as such, this letter and attached comments address our concerns specific to the draft permit and its associated documents (*i.e.* Fact Sheet, Ocean Discharge Criteria Evaluation).

*Aquaculture Associations*

*Fishing Organizations*

The Cook Inlet Regional Citizens Advisory Council (RCAC) is a citizen oversight council for oil industry operations in the Cook Inlet region and was established according to Section 5002 of the Oil Pollution Act of 1990 (OPA 90). Our Board of Directors includes representatives from local governments and interest groups in Cook Inlet and nearby areas who have the potential to be impacted by crude oil industry operations in Cook Inlet. One of Cook Inlet RCACs many tasks under OPA 90 is to provide “*advice and recommendations on policies, permits, and site-specific regulations relating to the operation and maintenance of terminal facilities and crude oil tankers which affects or may affect the environment in the vicinity of the terminal facilities.*” Thus, through this congressional mandate, we are providing you with these comments.

*City of Kodiak*

*City of Kenai*

*City of Seldovia*

*City of Homer*

On 19 May 2006, prior to the issuance of the last NPDES general oil and gas permit for Cook Inlet, our Board of Directors met and passed a resolution regarding the proposed NPDES permits that states that:

*Kodiak Island Borough*

*“... the Cook Inlet RCAC does hereby oppose the issuance of an NPDES General Permit for Oil and Gas Exploration in Cook Inlet that would allow more pollution to be discharged than is currently permitted and the Cook Inlet RCAC supports the goal of zero discharge.”*

*Kenai Peninsula Borough*

*Municipality of Anchorage*

Although stopping short of requesting “zero discharge” for all facilities in this permit cycle, the resolution language articulates *Cook Inlet RCAC’s stance that the proposed permit limits and mixing zones should ensure that the total concentrations and pollutant loadings to Cook Inlet are not increasing and that every effort be made to move towards zero discharge.* The increase in exploration activity since the last permit cycle will definitely introduce significantly more wastewater stream discharges to the Inlet and we are asking ADEC to take a close look at recent successful efforts by some Cook Inlet operators to re-inject drill fluids and cuttings and produced water discharges that have shown that re-injection is possible. We will push for future revisions to the Effluent Limitation Guidelines to reflect this new information about the feasibility of successful down-well reinjection of wastewater streams that are covered in the proposed permit.

Our attached comments address a range of concerns about the review process, especially for the environmental monitoring requirements, as well as details of the proposed permit and the Ocean Discharge Criteria Evaluation. If you have any questions regarding our comments, please contact me or our Director of Science and Research, Susan Saupe, at the number below or at our respective e-mails, [munger@circac.org](mailto:munger@circac.org) or [saupe@circac.org](mailto:saupe@circac.org). We look forward to working with ADEC as you develop your APDES program and were encouraged when Commissioner Larry Hartig recently assured our Board of Directors that, in the future, we would be provided a more active role earlier in the review process.

Sincerely,



Michael Munger  
Executive Director

Cc: Wade Strickland, Program Manager  
Commissioner Larry Hartig

## **Cook Inlet Regional Citizens Advisory Council Comments: Draft Cook Inlet NPDES Permit No. AKG-28-5100 & APDES Permit No. AKG-31-5100**

The Cook Inlet Regional Citizens Advisory Council (Cook Inlet RCAC) is submitting one set of comments for both the NPDES Permit No. AKG-28-5100 and APDES Permit No. AKG-31-5100. Comments apply to both permits unless specifically stated. Included are comments specific to the proposed permits, comments regarding conclusions of the Ocean Discharge Criteria Evaluations (OCDEs), and a section detailing our concerns on the environmental monitoring program requirements of the permits. In addition, there are a few comments that are general to the EPA or ADEC permit review processes. When commenting on one of the other specific permits, they are typically referred to as the “State” or “ADEC” permit when referring to Draft APDES Permit No. AKG-31-5100 or the “federal” or “EPA” permit when referring to Draft NPDES Permit No. AKG-28-5100. When making comparisons to the existing general Cook Inlet oil and gas NPDES permit (AKG-31-5000), it is typically referred to as the “general permit” or “GP.”

### **Draft Permit Review Comments**

- 1) In the Draft State Permit the prohibition for discharges shoreward of the 10-m isobath and within 4,000 meters of coastal marsh, river delta, river mouth, other listed special habitat areas, etc. has been continued to afford better protection of these sensitive areas since existing baseline data on fate and effects is very limited in these areas. *Cook Inlet RCAC strongly agrees with EPA/ADEC and supports continuing the discharge prohibition in these areas.* However, in the Draft ADEC Permit, the map of allowable areas includes: coastal intertidal and marsh areas in Chinitna Bay and at Chinitna Point, intertidal/coastal marsh areas and areas near river deltas/mouths in Redoubt Bay, nearshore areas north of Anchor Point near the Anchor River, and extensive coastal areas in the upper Cook Inlet including near the mouth of the Kenai River, Kasilof River, and Swanson Rivers that appear to be within areas restricted by the Draft Permit. The Prohibition Areas identified in the Draft ADEC Permit clearly specify that discharge is prohibited: “Within the boundaries or within 4,000 meters of a coastal marsh, river delta, river mouth...” and “...shoreward of the 10-m mean lower low water (MLLW) isobaths.” *Cook Inlet RCAC supports these prohibitions and request that the area of coverage maps be updated to clearly reflect the prohibition areas that are specified in the text of the Draft Permit.* Also, please note that the Ocean Discharge Criteria Evaluation is confusing on this issue. Although it states that coastal waters (above Kalgin Island) are not subject to ODCE regulations, that would preclude the ODCE from applying to the state permit, yet language throughout the ODCE discusses both permits and 40 CFR Part 125 Ocean Discharge Criteria is adopted by reference in 18 ACC 83.010(c). Since the ODC set guidelines for territorial seas, the contiguous zone, and the ocean, the ODCE should include the prohibition from discharging within 4,000 meters of coastal marshes, etc...(Section 1.2.2)
- 2) Both draft permits require that the notice of intent (NOI) to discharge be submitted at least 45 days prior to initiation of discharge rather than the 30 days contained in the existing permit. *Cook Inlet RCAC supports this change since it will allow additional time for EPA/ADEC to review documents (Drilling Fluids Plan, Environmental Study Plan, etc.)*



*that must be submitted with the NOI.* However, the process is not clear where public review of an NOI is provided, even though the submission can include requests by the permittee for significant changes to what have been identified in the permit, such as a request for mixing zone and effluent modifications or a request for a waiver from minimum treatment requirements. The permittee is asked to provide information in the NOI addressing these requests but we have noted in the past that there has often been poor descriptions or understanding of local hydrography, sediment characteristics, and biota and believe it is important to provide opportunities to evaluate the reasoning behind any NOI waiver or modification requests. Most perplexing is the lack of scientific review or opportunity for review of any environmental study plan or report required for submission with the NOI. Extensive comments are provided later on our concerns about the poor study plans submitted to EPA under the GP (which were never allowed public review) that were born out by the poor sampling success and lack of any useful data. That level of study plan and sampling is not acceptable and providing for solid peer and public review opportunities when submitted with the NOI should improve the access to helpful data in the future.

- 3) Although not a new permit requirement, the draft State permit requires that engineering plans and reports for both the domestic wastewater discharges (003) and the graywater discharges (004) be submitted by first time applicants for ADEC approval. The draft permit requires that these plans must now be submitted with the NOI. *Cook Inlet RCAC supports this change since it will allow ADEC time to review the plans and approve them prior to any discharge.*
- 4) Both draft permits require that a Drilling Fluids Plan be developed and submitted with the NOI. The goal of the plan as stated in the fact sheet is to ensure personnel on-site are knowledgeable in the information and methods required to formulate the drilling fluids/chemical additives, to meet the permit's toxicity requirements, and to minimize addition of toxic substances. *In the absence of requiring zero discharge in the permit [more notes later on this], Cook Inlet RCAC strongly supports this new requirement since it will hopefully minimize the introduction of additional toxic chemicals to the Cook Inlet marine ecosystem.*
- 5) The draft permits also require keeping a Chemical Additives Inventory for each discharge (005-011) including: constituents, total quantities used, rates of use, and calculated maximum concentrations in any discharged waste stream. This information must be included in the End of Well Reports. *Cook Inlet RCAC supports this new requirement as it will provide additional information on the quantities and types of potentially toxic substances that are being discharged to Cook Inlet, and this information should be provided for public access along with Discharge Monitoring Report data.*
- 6) The draft permits now require that the Best Management Practices (BMP) Plan be submitted with the NOI to EPA/ADEC. The existing GP only requires that a certification statement be submitted with the NOI. *Cook Inlet RCAC supports this change as it will allow EPA/ADEC to review the BMP and ensure that it has adequately addressed all the objectives and requirements as outlined in the draft permits.*
- 7) Whole Effluent Toxicity (WET) testing requirements - The existing GP requires testing of at least five dilutions plus a control with two dilutions above and two below the critical dilution. The draft State APDES permit retains this same wording. The new draft EPA

permit specifies one dilution below and three dilutions above the critical dilution with concentrations at 10%, 50%, and 100% effluent. Cook Inlet RCAC recommends that the wording in the existing GP and in the draft State permit be retained and be used as a replacement for the wording in the draft federal permit for consistency. Also, the critical dilution triggers listed in the permit are all below 1% effluent concentration; in order to trigger additional testing the IC<sub>25</sub> would need to be below the critical dilution for which only one concentration is being tested. Additionally, the permit does not specify the dilution for the one test concentration below the critical dilution. *Cook Inlet RCAC recommends using a serial dilution for those concentrations below the critical dilution to provide the most useful information concerning toxicity of the discharge.*

- 8) WET testing requirements – For accelerated testing both permits specify that a Toxicity Reduction Evaluation (TRE) with or without a Toxicity Identification Evaluation (TIE) should be initiated if chronic toxicity is seen during any accelerated test. However, neither of the draft permits specifies what should be done if no chronic toxicity is seen in the accelerated testing. *We recommend that verbiage be added to clarify in both draft permits that would allow testing to resume at the normal schedule specified in the permit if no chronic toxicity is seen in the accelerated testing.*
- 9) The draft EPA permit now allows Permittees to submit Discharge Monitoring Reports (DMRs) online through their netDMR software. *Cook Inlet RCAC supports digital reporting of DMR data and recommends that the ADEC allow digital submittals in their draft permit.* Reporting of digital data allows easier dissemination and use of the data for examination of trends, for comparisons to permit limits, and for permit re-evaluation purposes. In fact, both EPA and ADEC should consider requiring that all submissions be done through electronic submissions (not just an electronic submission of a pdf). This information should be accessible and easy to compile, aggregate, and summarize.
- 10) Both draft permits include new Cooling Water Intake Structure (CWIS) requirements for new offshore oil and gas extraction facilities as required by the 2006 regulations, 40 CFR Part 125, Subpart N. *Cook Inlet RCAC supports how EPA and ADEC have included implementation procedures for the CWIS requirements in the draft permits that require Permittees to detail their implementation technologies or operational measures in their BMP Plan to minimize impingement and entrainment of fish and shellfish.*
- 11) The draft State permit requires that a Quality Assurance Project Plan (QAPP) be developed for all monitoring required by the permit. Although most laboratories already follow internal QA/QC procedures, *Cook Inlet RCAC supports the requirement that Permittees also develop and implement a project specific QAPP that would not only cover the laboratories but would also address all sampling required by the permit including procedures conducted on the drill rig. Cook Inlet RCAC further recommends that development and implementation of a QAPP also be included as a requirement in EPA's draft permit.*
- 12) The draft State permit (Section 3.1.1) specifies that the QAPP be implemented within 120 days of the effective date of this permit. *Since this a GP, Cook Inlet RCAC recommends tying the implementation date to the NOI or to implementing prior to any discharge since a Permittee should not have to develop a QAPP until they have plans to perform exploration.*

- 13) The draft State permit (Section 3.2) requires that a Corrective Action Plan be developed and implemented upon violating a permit requirement for Domestic Wastewater or Graywater discharges. *Cook Inlet RCAC supports this new requirement although it is already somewhat covered for all discharges as part of Appendix A - Standard Conditions, APDES Permit Nondomestic Discharges.*
- 14) Both draft permits now require that Bilge Water (011) be sampled by the static sheen method at least once per discharge event. *Cook Inlet RCAC supports this new testing requirement.*
- 15) Mixing Zone – The Draft State Permit allows the authorization of a standard 100-m mixing zone when requested if the proposed discharges are consistent with permit conditions and that demonstrate compliance with the requirements of 18 AAC 70.240 – 18 AAC 70.270. *Cook Inlet RCAC recommends that the 100-m mixing zone size be the maximum allowed and that where possible a mixing zone should either be eliminated or reduced in size to be the smallest size practicable as required by 18 AAC 70.240.*
- 16) Diesel Oil – Both draft permits have updated the analytical method for diesel oil analysis to EPA SW846 Method 8015C for nonhalogenated organic compounds. *Cook Inlet RCAC concurs with the method but suggests that the permit verbiage specify measuring diesel range organics (DRO) by Method 8015C, as otherwise the contract laboratory – unless specifically understanding the goal of the test - might run a standard 8015C test where the standard analyte list does not include diesel oil.*
- 17) Diesel Oil - The draft State permit seems to include some contradictory verbiage concerning “fingerprinting” (Section 2.2.6.3.1). In the beginning of this section the draft permit states that presence or absence of diesel oil will be determined by a comparison of a fingerprint of the sample versus diesel oil in storage at the facility using Method 8015C which is a GC/FID method. Later in the same section it states that GC/MS may be used when it is determined that greater resolution of the drilling mud “fingerprint” is needed. *Cook Inlet RCAC would recommend changing the language in the State permit to that used in the draft EPA permit to clarify this section.*

### **Environmental Monitoring Requirements**

- 18) *Cook Inlet RCAC strongly supports the environmental monitoring requirements in both the State and Federal permits, and believes that if the objectives of the draft permits are implemented correctly, this monitoring will provide valuable information on the fate of oil and gas exploration discharges and their effect on the marine ecosystem in Cook Inlet. Cook Inlet RCAC however has some concerns on how this monitoring effort is currently being implemented and has some suggested changes to clarify the permit requirements which are outlined below. The environmental monitoring methods should be far more rigorous than those currently being conducted for exploration activities. Little monitoring data has been collected for potential impacts by drilling discharges in Cook Inlet and a rigorous monitoring program should provide data that informs future decisions. There was quite an extensive study (Dames and Moore 1978) that was conducted during earlier drilling activities, although this took place in deeper waters of lower Cook Inlet. In areas where benthic invertebrate sampling was difficult due to sediment, they identified alternate ways to obtain data. They also conducted dye tracer studies to better understand plume*



trajectories and dilution. *EPA and ADEC should in no way lessen the requirements of an environmental monitoring program and should do everything possible to ensure that any study plan obtains review by scientists familiar and experienced with Cook Inlet physical, chemical, and biological environment.*

- 19) The objective of this monitoring, as specified in the permits, is a sediment triad approach that includes: (1) sediment pollutant chemical concentrations, (2) sediment toxicity, and (3) benthic biological community monitoring. However, under Section 5.c. – Requirements (EPA permit) and Section 2.2.7.4 – Plan of Study (ADEC permit), the draft permits say that: “The monitoring must include, but not be limited to, relevant hydrographic, sediment hydrocarbon, and heavy metal data...” *Cook Inlet RCAC suggests adding sediment toxicity and benthic biological community to this section in order to be consistent with and to address the objectives of the program.* Similarly under the reporting requirements, the permits state: “The report must address the environmental monitoring ... to describe any impacts of the effluent on sediment pollutant concentrations, sediment quality, water quality, and/or benthic community.” *Cook Inlet RCAC suggests changing “sediment quality” to read “sediment toxicity” since sediment pollutants concentrations are already covered.*
  
- 20) It is unclear what is wanted for the hydrographic and/or water quality component of the study. There is one mention of collecting hydrographic data under Requirements/Plan of Study and another mention of water quality data under the Reporting sections, and no mention of collecting water samples or hydrographic information under the Objectives section of the monitoring. *Cook Inlet RCAC recommends clarifying the environmental monitoring requirements to address the collection of hydrographic and/or water quality data under both the objectives of the study and under the Requirements/Plan of Study.* Past studies have shown that the collection of water samples that were analyzed for pollutant concentrations (hydrocarbons and heavy metals) were very useful particularly in areas of Cook Inlet where the collection of bottom sediments is difficult due to the prevalence of large cobble and an erosional environment (ADL 2001 and ICIEMAP 2012, various). *Cook Inlet RCAC supports the requirement that water quality (chemical pollutant concentrations) be conducted by the program.* If implemented, the water quality sampling plan should include the analysis of both total recoverable and dissolved metals. Due to the highly turbid water conditions in Cook Inlet, it has been shown by past studies that total recoverable (particulate) metals are directly correlated with the total suspended sediment (TSS) concentrations with TSS accounting for approximately 80-90% of the background metal concentrations (ICIEMAP 2012, various). Therefore, the analysis of both dissolved and particulate metals will be necessary to determine any effluent impacts. The analysis of TSS should also be included in the environmental monitoring program which will allow better interpretation of any metals monitoring data.
  
- 21) Exploration monitoring that has been and is being conducted under the existing Cook Inlet permit clearly do not address the Environmental Monitoring Requirements and appear to be in violation of permit conditions since neither the Environmental Study Plans (Furie 2011 & Buccaneer 2012) nor Environmental Sampling Efforts (Furie 2012a and 2012b) address all of the Permit objectives. The existing requirements are identical to those contained in the draft permits and for this reason alone, *Cook Inlet RCAC feels that these sections in the draft permits should be strengthened and clarified where necessary to ensure future studies address permit requirements.*

- 22) *Cook Inlet RCAC has a concern that the Environmental Monitoring Study Plans are not (for the existing GP) and might not be (for draft permits) adequately reviewed by EPA and ADEC prior to studies being conducted and discharges occurring. Neither of the Study Plans cited above under the existing GP included: (1) a sediment toxicity component, (2) a benthic biological community component, (3) addressed how they would determine statistically significant changes with distance from the discharge, (4) adequately described all of the monitoring procedures and methods as required, or (5) included statistical methods or null hypotheses for sediment toxicity or benthic invertebrates. Objective No. ii specifies sediment toxicity and examining potential effects as function of distance and objective. No. iii clearly states that the Permittee should monitor for discharge related impacts to benthic biological communities. We recognize the difficulties in sampling sediment habitats in Cook Inlet and, therefore, are concerned by the lack of experience demonstrated by the developers of the plan in not discussing these and providing adequate alternatives to collecting useful data. We believe this situation arose in part by there being no outside peer or public review of the submitted sampling plans or reports. During industry's development of a sampling plan for produced water discharges under the existing GP, Cook Inlet RCAC was able to provide very significant comments and a critical review on the original plan submitted to EPA that resulted in industry's coordination of a statistically sound study plan and their hiring of contractors with significant experience sampling in Cook Inlet's marine environment (especially related to sediment quality triad approach sampling). The process that was used for the exploration monitoring plan under the existing GP was not provided for review and, in our opinion, resulted in a poorly devised sampling plan that provided little information helpful in preparing this or future permits. A repeat of this is not acceptable for environmental monitoring under these new permits. For example, Furie's monitoring efforts were not successful in collecting any sediment at KLU Well #1, only two marginal pipe dredge samples were collected for KLU Well #2, and even the most basic data collections for the hydrographic components of the study were of extremely limited use.*
- 23) *Based on the existing GP Study Plans and Monitoring Reports cited above, Cook Inlet RCAC believes that the provision stated in the permit: "The permittee will be required to correct, repeat, and/or expand environmental monitoring programs which have not fulfilled the requirements of the permit." should be exercised by EPA and ADEC and that a serious effort be made to incorporate recommendations by those experienced in sampling Cook Inlet's sediment and water column environment.*
- 24) *Both draft permits allow EPA/ADEC to "grant a written exemption to the Environmental Monitoring Requirements if the permittee can satisfactorily demonstrate that information on the fate and effects of the discharge is available and/or the discharge will not have significant impacts on the receiving environment." Cook Inlet RCAC believes that it is absolutely inappropriate at this time to grant exemptions to the environmental monitoring since very little information exists on the fate and effect of drilling muds and cuttings discharges in Cook Inlet and it would be impossible to predict whether any significant impacts would occur in advance of drilling operations since the chemical composition of drilling muds may be adjusted during actual operations. As well, it is clear from some of the vague and even wrong descriptors in the Ocean Discharge Criteria Evaluation, that there are a lot of misunderstandings about the abundance, diversity and potentially unique*



species occurring throughout Cook Inlet. Without the assurance of peer and public review, exemptions could be potentially granted based on misinformed applications.

- 25) Cook Inlet RCAC recognizes that a critical consideration for the sediment sampling program is the bottom type. Based on our experience of sampling throughout Cook Inlet, many locations are scoured with each tidal cycle and no net accumulation of sediments occurs. The sediment sampling program may not even be possible, as the bottom may consist entirely of cobble, large gravel, or very coarse sediments. Typically the accumulation of pollutants in the marine environment is associated with fine-grained sediments. Thus, if the sediment program is in a net erosional environment, it is expected that sampling will be difficult or impossible and pollutants may not be accumulating in these areas. In the event that sediment sampling is not possible, the permittee should be required to specify an alternative method to address the permit objectives. Past work by Cook Inlet RCAC on the Integrated Cook Inlet Environmental Monitoring and Assessment Program (ICIEMAP) study in Cook Inlet showed that the collection of water column chemistry (hydrocarbons & metals) was very effective for examining the potential effects as a function of both time and distance from the discharge.

### **Ocean Discharge Criteria Evaluation**

- 26) Effluent Limitations Guidelines (ELGs) were identified for the coastal subcategory in part because coastal waters are typically highly sensitive to pollutant discharges compared to open offshore areas, many of the pollutants discharged are persistent, and there are numerous potential adverse effects. However, the ELGs for the coastal subcategory also provide that the physical attributes of the oil and gas extraction activities in Cook Inlet “render zero discharge of produced water, drilling fluids, drill cuttings, etc...technically or economically unachievable.” It is frustrating, then, that the ODCE evaluates permits and their potential to cause unreasonable degradation of the marine environment within the territorial seas, contiguous zones, and the oceans, but not coastal areas. Discharges that are allowed in Cook Inlet coastal areas are not allowed in other coastal subcategory areas due to their being “typically highly sensitive to pollutant discharges.” Since the ELGs allow discharges into coastal waters in Cook Inlet (only), it is reasonable to expect that the evaluation of discharges that occurs in an ODCE also include coastal waters of Cook Inlet, unless another mechanism is identified for an ecosystem-perspective evaluation.
- 27) The ODCE contains significant misinformation and in many cases does not include information that should be incorporated or discussed. It was confusing to read because in some sections it was clear that significant effort was made to describe in detail some aspect of Cook Inlet’s habitat or biota, yet in others the explanations or summaries were lacking detail or included descriptions of areas that are significantly different from Cook Inlet and missed more relevant existing information for the Inlet.
- 28) Descriptions of the oceanography of Cook Inlet in the ODCE included numerous inaccuracies or careless language that could lead to misunderstandings by a reader. For example, the ODCE contains the following paragraph: “*Sediment in Cook Inlet is generally transported along the Kenai Peninsula into lower Cook Inlet, Kachemak Bay, and Shelikof Strait (MMS 2003). Sediments transported down the west side of Cook Inlet are eventually deposited in the shallows of Kamishak Bay, while sediment is also deposited in Kachemak Bay, deeper portions of outermost Cook Inlet and Shelikof Strait (MMS 20000). Homer*

*Spit is maintained by sediment transported from the north (KPB 2007a).*” The first sentence is unclear whether they are saying that sediments that come from outside of Cook Inlet, into Cook Inlet, are carried along the Outer Kenai Peninsula and deposited or whether they are talking about sediments that originate in the upper and central Inlet being transported down the east side of the inlet along the Kenai Peninsula and deposited. Either way, neither supply sediments to Kachemak Bay. The second sentence is misleading in that it implies that all sediments carried from upper Cook Inlet down the west side are deposited in Kamishak Bay [yet again implies that these(?) sediments are also deposited in Kachemak Bay]. Upper Inlet sediments transported in the western boundary current are deposited in areas of eddies or slowed currents along the coast (thus, the extensive mudflats throughout much of the upper and central Inlet), some are deposited in Kamishak Bay, and some are swept out to deposit in deep quiescent areas of Shelikof Strait. These distinctions are important since there has been significant confusion by the public on the physical oceanography and sediment transport in Cook Inlet that has led to misrepresentation of contaminant study results.

- 29) Density differences drive the net circulation (baroclinic flow) of Cook Inlet (e.g. the currents that transport much of the sediment from the upper Inlet to the lower Inlet and areas beyond) and so it is important that salinity be described clearly in the ODCE. It is extremely complex; it varies across the Inlet, varies within a tidal cycle, varies with season, etc... The major influences on salinity in the Inlet are the freshwater inputs (both from rivers within the Inlet and from the Alaska Coastal Current (ACC) entering the Inlet at Kennedy Entrance) and intruding seawater. The paragraph describing salinity was obviously written by someone unfamiliar with the area and its influences on Cook Inlet’s circulation: *“Salinity of Cook Inlet waters increases steeply and evenly along the inlet, from Point Possession to East and West foreland. Slightly higher salinities are found on the east side. This rapid increase in salinity is due to high concentrations of glacial silt in runoff from the Matanuska, Susitna and Knik rivers and subsequent settling of sediment in upper Cook Inlet. Local areas with less salinity occur near the mouths of large glacially fed streams...”* Salinity is a measure of *dissolved* salts, so suspended or depositing of glacial silt or other sediments is not controlling salinity. In fact, in much of the upper and central Inlet, sediment loads can almost be a proxy for freshwater influence and, thus, salinity. Areas of higher salinity are controlled by the intrusion of saltwater into the upper Inlet. The amount of freshwater varies by season but it also varies significantly by the hour. Any hydrographic measurements at the same location throughout a water column will show variability in salinity over time based on the amount of seawater intruding north with the tide, the position of the high energy convergent zones, and numerous other factors. This one simple paragraph about salinity incorporates such misunderstandings about Cook Inlet hydrography, and it only attempted to describe salinity from Point Possession to the Forelands (a small fraction of the Inlet). These comments may seem trivial, but density driven currents drive the net circulation of the Inlet and, thus, poor descriptions or understandings of salinity can lead to poor understanding of net transport of pollutants.
- 30) The ODCE made comparisons to Arctic areas (e.g. Beaufort Sea) in several instances (e.g. *Mysis* growth, nearshore lagoons) followed by a statement such as “Although this study was completed in the Beaufort Sea, .....rates are likely similar .....in the Inlet.” Environmental conditions in Beaufort Sea lagoons are very different from areas in Cook Inlet in atmospheric and ocean conditions, coastal influences, tides, currents, sedimentation

rates, etc...and there would be little similarity between the Arctic lagoons studied by Dr. Ken Dunton and any area of Cook Inlet.

- 31) The description of attached macroalgae in the ODCE contains numerous inaccuracies and missed data sources that could have provided more detail. This is especially important since there are areas not far from the potential discharge locations within the Cosmopolitan Unit, where Buccaneer has begun drilling, that have shown diverse and lush benthic kelp communities and an abundance of higher trophic levels as evidenced by the heavy sport fishing of halibut and salmon that occur in the area.
- 32) The ODCE should be revisited and cleaned up since it seems customary for language within one ODCE (or similar evaluation summary documents) to be extensively referenced and used in future ODCE's for the same area. This ODCE states that it "relies extensively on information provided in..." MMS Lease Sale Final Environmental Impact Statements, permit fact sheets, previous permits, and a prior ODCE for Forest Oil. These documents often simplify, summarize, or misrepresent the findings of extensive study reports and manuscripts during the effort to describe some Cook Inlet ecosystem or biotic category in a paragraph or two.
- 33) The major concern with an ODCE that does not accurately portray the environmental conditions is that it is used to make a decision about the proposed permits and their potential to cause unreasonable degradation of the marine environment..." Without a solid understanding of the physical, chemical, and biological environment, it would be difficult to, for example, consider the required objectives of the ODCE: "*the potential transport of such pollutants by biological, physical, or chemical processes*" or "*the composition and vulnerability of the biological communities that may be exposed to such pollutants, including the presence of unique species or communities of species...*" or "*the importance of the receiving water area to the surrounding biological community, including the presence of spawning sites, nursery/forage areas...*" Yet, the ODCE does just that.
- 34) The ODCE states that "*If the Regional Administrator has insufficient information to determine, prior to permit issuance, that there will be no unreasonable degradation to the marine environment, an NPDES permit will not be issued unless the Regional Administrator, on the basis of the best available information, determines that all of the following are true: such discharges will not cause irreparable harm..., there are no reasonable alternatives to the onsite disposal..., and the discharge will be in compliance...*" Cook Inlet RCAC believes that in some areas of Cook Inlet, EPA and ADEC have insufficient information to determine whether there will be unreasonable degradation to the marine environment.

### **General Comments about the Review Process**

- 35) Unlike other review processes, both EPA and ADEC should ensure that any changes to the permit between the draft and final permit are reflected in the Fact Sheet. In the past, the Fact Sheet stays on-line with the permit throughout the length of that permit but often does not reflect or accurately describe the permit because of changes made to the permit.
- 36) A process for reviewing other future significant components of the permit should be developed. These future components should be provided for outside review as we believe



that, currently, the oversight of that program is inadequate. For example, the sampling plan for the environmental monitoring program is typically not sent out for public review, nor is the submitted reports. However, as described extensively above, we have noted that the initial plans submitted to EPA for Environmental Monitoring for the 2007 permit for the produced water component was severely lacking and we submitted extensive comments and recommendations on this. Recently, we were able to obtain copies of the sampling plans submitted to EPA by Furie and Buccaneer under the existing GP for their exploration facilities and were (1) disappointed that they had not selected contractors with extensive, proven experience sampling and interpreting data from those environments and (2) appalled at how poorly their study plan addressed the objectives listed by EPA in the permit and the results of the Kitchen Lights sampling program proved the futility of their sampling methods and the lack of data provided to inform future decisions by EPA and ADEC.

## **References**

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