

**PUBLIC COMMENTS ON PROPOSED TRIENNIAL REVIEW TOPICS**  
**2007-2010 TRIENNIAL REVIEW OF WATER QUALITY STANDARDS**  
**\* INDICATES ADEC PRIORITY TOPIC**

**CHRONIC ALUMINUM\***

**4 COMMENTS**

- As noted in the public notice of the State's triennial review of its water quality standards, many States have chosen not to adopt any standards for aluminum and of those that have, many have specifically adopted only the acute criterion as a standard. The current Alaska standard, however, has the most overly protective chronic criterion for aluminum in the nation.
- The criteria need revision to address effects of hardness and the appropriate form of Al for AK.
- Based on the fact that studies and tests of aluminum toxicity have been inconsistent, I understand that most states have chosen not to adopt water quality standards for aluminum. The Environmental Protection Agency ("EPA") has likewise declined to adopt such standards in the states where it has promulgated water quality regulations. Because toxicity tests have not shown a consistent pattern of toxicological response to the different exposure concentrations, the chronic aluminum water quality criteria of 87 µg/L should be deleted.
- A little bit keeps adding up.

**AMMONIA\***

**2 COMMENTS**

- Interested in participating in any advisory group that affects the mining industry, such as aluminum, ammonia, temperature, TDS, and nitrate. I did not list these parameters above because the existing standards for these parameters have been adequately protective in my experience. However, if the state chooses to evaluate these parameters, or others, such as biocriteria, I would like to participate.
- Would pollute the Water Quality.

**ANTIDegradation Policy Implementation Guidance\***

**42 COMMENTS**

- Potential impacts to MOA's stormwater permit.
- The State's current antidegradation policy is legally deficient because it does not include an implementation process. The State should develop a process to ensure that the antidegradation policy is properly implemented in the permitting process and maintain Alaska's pure waters.
- Our waters are pristine and healthy and we want to keep them that way.
- It is important for us to keep our waters pristine and healthy.
- Alaska has an illegal ADP under the Clean Water Act.
- My third vote would go towards the antidegradation law implementation as the limits noted have no real bearing if they are not monitored and bring no consequence.

- I believe that 18 AAC 70.015 should be changed so that 18 AAC 70.015 is not only in compliance with "b" of that section but also in compliance with any Federal section. I believe that an applicant who applies to reduce water quality must demonstrate under the antidegradation policy that the activity meets Federal Standards.
- The anti-degradation policy is legally deficient until an implementation plan is promulgated and approved by EPA.
- Preserve the natural process for degradation.
- We love our clean water and it also has great economic value. We need to do what we can to protect it.
- The State's current anti-degradation policy is legally deficient because it does not include an implementation process. The State should develop a guidance process to ensure that the anti-degradation policy is properly implemented in the permitting process and Alaska's high quality waters are maintained.
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- Key word - degrade. Putting down our water is silly.
- Implementation process - maintain high water quality.
- The state's current anti-degradation policy is legally deficient because it does not include an implementation process. The state should develop a guidance process to ensure that the anti degradation policy is properly implemented in the permitting process and Alaska's high water quality waters are maintained.
- The State should develop a guidance process to ensure that the anti-degradation policy is properly planned, designed and implemented in the permitting process and that Alaska's high quality waters are maintained as such, "high quality waters."
- Alaska has identified antidegradation policy implementation guidance as a proposed priority Triennial Review topic. EPA supports the development of such guidance as a priority for the Triennial Review. EPA encourages DEC to consider the discussions of antidegradation policy implementation guidance in EPA's WQS program documents. EPA staff will assist DEC in identifying current program documents relating to antidegradation implementation methods. In addition, other EPA Regional offices have developed antidegradation guidance; guidance developed by EPA Regions 1,4,8, and 9 can be found on the River Network web site at <http://www.rivernetwork.org/resource-library.php?ResourceID=710>. Alaska may also wish to consider antidegradation implementation methods developed by other States and Tribes (e.g., by Washington Department of Ecology and Oregon Department of Environmental Quality). We look forward to working with you as you develop your antidegradation implementation methods.
- Maintain Alaska's water and keep it pure.

- What good is a policy if it is not implemented?
- The current antidegradation policy is legally deficient.
- Current policy is legally deficient because it doesn't include an implementation process. The state should develop guiding processes to ensure that antidegradation policy is properly implemented in the permitting process and that Alaska's high quality waters are maintained.
- Alaska needs to develop an implementation process that is a core requisite within the permitting process.
- No comment, *just ranked antidegradation policy implementation one of their top three priorities.*
- Next on my priority list is the antidegradation policy implementation guidance. The State's current anti-degradation policy is legally deficient because it does not include an implementation process. The State should develop a guidance process to ensure that the anti-degradation policy is properly implemented in the permitting process and Alaska's high quality waters are maintained.
- It is presently deficient and inadequate for the rapid increase in population which continues to rise.
- Assure SOA policy is not lowered, it should be strengthened.
- The Antidegradation Policy (ADP) is integral to the protection of uses as defined by the Clean Water Act. When EPA last approved Alaska's water quality standards, it specifically requested the department to identify implementation procedures for its antidegradation and mixing zone policies. ADP implementation procedures are also necessary for the application of zones of deposits in permits. To date, ADEC has failed to adopt any implementation procedures. To comply with existing federal rules, ADEC must place the ADP at the top of its priority list.
- No comment, *just ranked antidegradation policy implementation one of their top three priorities.*
- Have a way to protect our waters for future generations or to ensure our fishing grounds are not ruined.
- Current policy is deficient; it does not include an implementation process.
- The State's current anti-degradation policy is legally deficient because it does not include an implementation process. The State should develop a guidance process to ensure that the anti-degradation policy is properly implemented in the permitting process and Alaska's high quality waters are maintained.
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- The state should develop a guidance process to ensure that the anti-degradation policy is properly implemented in the permitting process.

- The policy is legally deficient, it does not include implementation process. A guidance process needs to be developed to ensure protection of our water quality.
- When EPA last approved Alaska's water quality standards, it specifically requested the department to identify implementation procedures for its antidegradation and mixing zone policies. ADP implementation procedures are also necessary for the application of zones of deposits in permits. To date, ADEC has failed to adopt any implementation procedures. To comply with existing federal rules, ADEC must place the ADP at the top of its priority list.
- Our current policy does not include an implementation process. We need a guidance process to ensure antidegradation of our water.
- State's current policy is legally deficient because it doesn't include implementation process - needs to properly implemented in the permitting process.
- The Antidegradation Policy (ADP) is integral to the protection of uses as defined by the Clean Water Act. ADP implementation procedures are also necessary for the application of zones deposits in permits. We concur with ADEC this topic is a high priority to address as part of the triennial review.
- Too many pressures are facing Alaska in the same direction as most other places have gone (i.e. degraded aquatic systems).
- Guidance or regulatory clarification on how to nominate an Outstanding National Resource Water. If any state has ONRW's, Alaska is the top of the list. People need to know how to use this tool that is available to them. Develop antidegradation policy that includes how to nominate ONRW's. Been required for years and so we haven't done it.

## **BACTERIA**

### **4 COMMENTS**

- 303(d) listing of many of Anchorage's Creeks.
- Drinking water and contact recreation uses threatened without a standard.
- Water is used for drinking and recreation.
- We had experiences of illness from drinking water.

## **BALLAST WATER AND INVASIVE SPECIES**

### **5 COMMENTS**

- Ballast water from cruise ships has been identified as the primary mode of transit for several species into west coast and Alaskan waters. Invasive species for have been identified as having adverse effects to natural and native food chain dynamics and associated species in effected ecosystems.
- Each year barges comes to our bay from other states, too. We never know what some company dispose into our waters.
- Increasing cargo and cruise ship traffic threatens Alaska waters.
- Since 1996, regulation, treatment and control of non-indigenous species, transported by ballast water in crude oil tankers has been a priority for the PWSRCAC, due to the potentially devastating impacts of a non-indigenous marine species invasion to commercial and recreation fishing economies and fish

and wildlife propagation. Commercial fishing, sport fishing and ecotourism are some of the most important economic sectors in our region. To be successful, a healthy ecosystem free of invading species is essential. State regulation of ballast water from crude oil tankers warrants attention due to the potentially devastating impacts of a non-indigenous marine species invasion to commercial and recreation fishing economies and fish and wildlife propagation. PWSRCAC has created a website to catalog all known data on ballast water discharges from crude oil tankers serving the Valdez Marine Terminal. The website can be found at <http://www.pwsrcac.org/projects/NIS/bw.html> Crude oil tankers can carry 150,000-400,000 barrels of ballast water per trip. Approximately 400 tankers arrive in Valdez each year to offload ballast water and load crude oil. About 86% of the ballast water discharged into Port Valdez originates from the ports of Puget Sound, San Francisco, and Long Beach, which are well documented ports already invaded by non-indigenous species. The residence time of segregated ballast water shipped from those ports is typically 5-10 days. This short residence time favors the survival of transported non-indigenous aquatic organisms in ballast water. Repeat inoculation of competent organisms on a high volume basis poses a serious NIS risk for the waters of Prince William Sound. Currently, no crude oil is being shipped to foreign ports from Alaska.

- It's only a matter of time until some exotic wreaks environmental havoc.

## **BIOCRITERIA**

### **3 COMMENTS**

- I want to know the health of our waters throughout Alaska. Most Alaskan waters are pristine and healthy.
- Interested in participating in any advisory group that affects the mining industry, such as aluminum, ammonia, temperature, TDS, and nitrate. I did not list these parameters above because the existing standards for these parameters have been adequately protective in my experience. However, if the state chooses to evaluate these parameters, or others, such as biocriteria, I would like to participate.
- The development and implementation of biocriteria standards may set the stage to address many of the other water quality issues currently identified by the DEC in the Triennial Review.

## **DISSOLVED INORGANIC SUBSTANCES/TOTAL DISSOLVED SOLIDS AQUATIC LIFE\***

### **7 COMMENTS**

- Interested in participating in any advisory group that affects the mining industry, such as aluminum, ammonia, temperature, TDS, and nitrate. I did not list these parameters above because the existing standards for these parameters have been adequately protective in my experience. However, if the state chooses to evaluate these parameters, or others, such as biocriteria, I would like to participate.
- TDS's in the form of inorganic substances from existing (and proposed) drilling and mining operations as well as urban development, impose significant potential

threats to Alaskan surface and ground waters, estuaries and coastal zones, and associated aquatic populations.

- Preserve the natural reproduction for fish species.
- A recent study completed by the Alaska Science and Technology Foundation (Salmon as a Bioassay Model for TDS, Stekoll, et al.) found that Total Dissolved Solids (TDS) levels of 250 ppm resulted in significantly lower fertilization rates and that elevated TDS concentrations resulted in higher mortality during the week after hatching. This new information proves that the current aquatic life criterion (18 AAC 770.020 & n.15) for TDS is much too high to protect aquatic life adequately. In light of this new scientific evidence showing that lowering TDS levels is necessary to ensure fish survival, especially during particularly sensitive life stages, we urge ADEC to prioritize lowering the TDS criterion for aquatic life during this triennial review process.
- Would pollute the Water Quality.
- A recent study completed by the Alaska Science and Technology Foundation (Salmon as a Bioassay Model for TDS, Stekoll, et al.) found that Total Dissolved Solids (TDS) levels of 250 ppm resulted in significantly lower fertilization rates and that elevated TDS concentrations resulted in higher mortality during the week after hatching. This new information proves that the current aquatic life criterion (18 AAC 770.020 & n.15) for TDS is much too high to protect aquatic life adequately. In light of this new scientific evidence showing that lowering TDS levels is necessary to ensure fish survival, especially during particularly sensitive life stages, we urge ADEC to prioritize lowering the TDS criterion for aquatic life during this triennial review process.
- Mutagenic properties in larval salmonids.

## **FISH CONSUMPTION VALUES**

### **42 COMMENTS**

- Because our people rely on fisheries for commercial and subsistence purposes.
- Because members of our Tribe consume a lot of fish.
- My family and I harvest and consume a lot of fish.
- Alaskans, especially subsistence users, consume high amounts of fish compared to Lower 48.
- The public depends on excellent water quality for subsistence purposes.
- Because many Alaskans lead a subsistence lifestyle, they are at higher risk because fish consumption values do not reflect high fish consumption rates.
- It is part of our main diet year round and we live by the sea.
- Bristol Bay Protection and Preservation. The world has very few if any better rainbow trout fishing. Traveled 3 times. Returning in 2008 to Alaska Rainbow Lodge Kvichak River 4th Trip.
- Commercial, subsistence and sport fishing is valued so highly in Alaska.
- The State of Alaska should develop regulations for fish consumption values that ensure protection for the most vulnerable populations such as those that have the highest fish consumption rates like the native population and people whose lives depend solely upon a subsistence lifestyle. As such, the State of Alaska should

develop regulations that update water quality standard regulations based on increased consumption rates that more accurately reflect Alaskan subsistence lifestyles.

- Sale of wild salmon. In order to have wild salmon you must have CLEAN WATER. The state must have the ability to protect wild salmon.
- Many Alaskans' fish consumption rates are far higher than typical lower 48 residents. The State of Alaska should develop regulations for fish consumption values that ensure protection for the most vulnerable populations - those that have the highest fish consumption rates. As such, the State of Alaska should develop regulations that update water quality standard regulations based on increased consumption rates that more accurately reflect our Alaska subsistence lifestyles.
- The State of Alaska should develop regulations for fish consumption values that ensure protection for the most vulnerable populations, those that have the highest fish consumption rates. As such the State of Alaska should develop regulations that update water quality standard regulations based on increased consumption rates that more reflect Alaska subsistence life styles.
- I am a native and a subsistence person. These two topics will ensure I eat good fish.
- Regulate water quality to protect subsistence lifestyle.
- The State of Alaska should develop regulations for fish consumption values that ensure protection for the most vulnerable populations-those that have the highest fish consumption rates. As such, the State of Alaska should develop regulations that update water quality standards regulations based on increased consumption rates that are more accurately reflect Alaska subsistence lifestyles.
- The State of Alaska ought to develop regulations for fish consumption values that ensure protection for the most vulnerable populations - those that have the highest fish consumption rates. As such, the State of Alaska should develop regulations that update water quality standard regulations based on increased consumption rates that more accurately reflect Alaska subsistence, bush and remote survival lifestyles.
- Fishing is something everyone relies on for money and food. Both topics I listed water is very important to all. We need it to live and clean water for fishing.
- Fish and waters should be kept as clean and wild as possible.
- Alaska should develop a guidance process and regulations that update water quality standard regulations based on subsistence lifestyles.
- The values should be regulated in order to ensure the protection of the most vulnerable populations. As such, the State of Alaska should develop regulations that update water quality standard regulations based on increased consumption rates that more accurately reflect Alaska's subsistence lifestyles.
- Due to the high dependence on certain specific species by many Alaskans.
- Alaska subsistence.
- Lastly, fish consumption values. The State of Alaska should develop regulations for fish consumption values that ensure protection for the most vulnerable populations - those that have the highest fish consumption rates. As such, the State of Alaska should develop regulations that update water quality standard regulations based on increased consumption rates that more accurately reflect

Alaska subsistence lifestyles. This, I believe, also speaks to dissolved inorganic substances/total dissolved solids aquatic life criteria, and temperature criteria as part of that consumption due to the fact that if the fish are being eaten both commercially and for subsistence our water quality should be pristine to ensure that the fish being caught are not polluted with inorganic materials that can be kept out of our water.

- It is part of the ecosystem - destroy a link and the whole disintegrates - eventually is destroyed.
- Increased resource development affects AK water quality, subsistence.
- It is equally critical that ADEC adopt an appropriate fish consumption value (FCV) during this triennial review given the high consumption rates of seafood by Alaskans, especially Native Alaskans. Because human health criteria is based in part on the FCV, there will be inadequate protection for many Alaskans, especially customary and traditional users, whenever this value is significantly underestimated. ADEC's statutory authority requires the department to protect the environment and control pollution "in order to enhance the health, safety, and welfare of the people of the state. " See AS 46.03.010(a). In order to fulfill this obligation, it is incumbent upon the department to adopt a FCV during this triennial review process that reasonably reflects the high seafood consumption rate in Alaska.
- No comment, *just ranked fish consumption values as one of their top three priorities.*
- Fish need water quality that is pure.
- Nome residents use fish for food. Keep it safe. Keep mining away from our food and water.
- We would like to continue eating our subsistence foods forever and ever.
- The State of Alaska should develop regulations that update water quality standard regulations that protect our renewable resources. My biggest concern is protecting the world's greatest fishery in the world, Bristol Bay. I'm sorry, I've studied open pit mining, the Pebble Mine needs to go away.
- The State of Alaska should develop regulations for fish consumption values that ensure protection for the most vulnerable populations- those that have the highest fish consumption rates. As such, the state of Alaska should develop regulations that update water quality standard regulations based on increased consumption rates that more accurately reflect Alaska subsistence lifestyles.
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- The State of AK should develop regulations that update WQS based on increased consumption rates that reflect AK subsistence life style.
- State of AK should develop regulations for fish consumption values that ensure protection for the most vulnerable populations - those that have the highest fish consumption rates. State of AK should develop regulations that update water quality standard regulations based on increased consumption rates that more accurately reflect Alaska subsistence lifestyles.
- Given the high consumption rates of seafood by Alaskans, especially Native Alaskans, it is equally critical that ADEC adopt an appropriate fish consumption value (FCV) during this triennial review. According to Alaska Department of Fish and Game numbers, the 20-year average for subsistence catch of fish in Bristol Bay is 150,377 fish, spread among a population of roughly 6500 people, which amounts to about 115 pounds of fish per person a year, or about 141 grams a day – well above the EPA default rate. Because human health criteria is based in part on the fish consumption value, there will be inadequate protection for many Alaskans, especially customary and traditional users, whenever this value is significantly underestimated.
- Fish are a renewable resource that need protection and management.
- Higher standards for water for people to continue subsistence eating.
- The current default rate is woefully inadequate and fails to provide an adequate level of protection, especially in rural Alaska where consumption rates are significantly higher. It should be increased to reflect actual consumption rates. This information is readily accessible for communities in rural Alaska and can be obtained from numerous ADF&G Subsistence Division reports generated over the years.
- Large quantities of fish are consumed in places like the Kuskokwim River.

## **GROUNDWATER**

### **6 COMMENTS**

- Under the current regulations, groundwater is protected for aquaculture use, which, as a practical matter, results in groundwater being protected at the same level as surface waters that support aquatic life, despite the fact that groundwater does not support this use. The water quality regulations should be amended to delete aquaculture as a groundwater use. In addition, the regulations should be clarified to address points of compliance and to better explain how the Chapter 70 regulatory exceptions (see 18 AAC 70.200 - .240) apply to discharges into groundwater.
- Our drinking water is from the ground.
- Water is a precious resource that needs strict standards.
- Nome is very rural and we are at risk due to mining and a pro-mining regulatory state DNR and DEC.
- Also will need to keep humans, fish & wildlife to survive.
- Develop the criteria for groundwater. Ground waters are part of the WQS but people do not know what the criteria are.

## HUMAN HEALTH CRITERIA FOR CARCINOGENS

### 31 COMMENTS

- The State of Alaska must protect its residents against the harmful effects of introduced chemicals.
- The human risk level for carcinogenic substances in 18 AAC 70.025 is absolutely deplorable and totally ineffective. The Agency for Toxic Disease Registry should also be adopted by reference and an implementation plan developed to determine the human health risk not just some probability for exposed individuals.
- Alaska has some of the highest cancer rates in the country, which may be a reflection of consumption of aquatic species. Human health criteria should comply with federal requirements and reflect the latest scientific information to protect vulnerable populations.
- Pebble mine will not be able to assure this.
- Human health criteria for carcinogens.
- The State of Alaska should ensure that the human health criteria for carcinogens comply with federal requirements and the latest scientific information. Stringent standards that protect the most vulnerable populations are essential.
- Mining waste has carcinogens in it.
- The State of Alaska should ensure that the human health criteria for carcinogens comply with federal requirements and the latest scientific information. Stringent standards that protect the most vulnerable populations are essential.
- The State of Alaska should ensure that the human health criteria for carcinogens comply with federal requirements and the latest scientific information. Stringent standards that protect the most vulnerable populations are essential.
- Alaska needs the highest standards for keeping our water clean. We are the last frontier.
- Ensure human health - comply with Federal standards.
- The state of Alaska should ensure that the human health criteria for carcinogens comply with the federal requirements and latest scientific information. Stringent standards that protect the most vulnerable populations are essential.
- The State of Alaska ought to ensure that the human health criteria for carcinogens not only comply with federal requirements but also the latest scientific information. Stringent standards that protect the most vulnerable populations are essential.
- Should comply with Federal health standards.
- Water is a precious resource that needs strict standards.
- Alaska's human health criteria for carcinogens should comply with Federal requirements and latest scientific information.
- The state should ensure that the human health criteria for carcinogens comply with Federal requirements and the latest scientific information. Stringent standards are needed in order to protect the most vulnerable populations.
- No comment, *just ranked human health criteria for carcinogens as one of their top three priorities.*
- My first priority on your list of potential topics is health related. That of the Human health criteria for carcinogens: My comment is simple. The State of

Alaska should ensure that the human health criteria for carcinogens comply with federal requirements and the latest scientific information. Stringent standards that protect the most vulnerable populations are essential. I have petitioned the Center for Disease Control to perform a study regarding fish consumption by rural peoples who hang their fish to dry near gravel roads. These roads are built from materials that may be high in carcinogenic elements such as arsenic. Road dust landing on the drying fish would have inorganic arsenic particulates in it and these particulates travel long distances. People who consume these fish contaminated with the particulates could have a higher risk of digestive system cancers. If the road dust is landing on potable water or the gravel pit where the building materials come from is close to ground water used for drinking the same risk would apply. Disturbing soil rich in carcinogenic materials that could leech into ground water would be considered, in my mind, highly dangerous. The Center for Disease Control's Agency for Toxic Substances and Disease Registry has a most strict standard for all carcinogens as well as other substances.

- Much of the water is overlooked, not examined and seeps back into nature.
- No comment, *just ranked antidegradation policy implementation one of their top three priorities.*
- We eat mostly foods off the land, have been doing since time immemorial.
- Our state should ensure that the human health criteria for carcinogens comply with federal requirements and the latest scientific information. Protect, Protect, Protect.
- The State of Alaska should ensure that the human health criteria for carcinogens comply with federal requirements and the latest scientific information. Stringent standards that protect the most vulnerable populations are essential.
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- SOA should ensure that the human health criteria for carcinogens comply with Federal requirements and the latest scientific information.
- To ensure that our health criteria complies with Federal requirements and the latest scientific information, stringent standards that protect the most vulnerable populations are essential.
- Alaska must comply with federal requirements and even excel, if we will maintain our current level of water quality.
- State of Alaska need stringent standards that protect the most vulnerable populations are essential.
- Add table of HHC for carcinogens at  $10^{-5}$  risk level so people understand what these criteria are.

## **MANGANESE**

### **1 COMMENT**

- Manganese has no direct health effects. EPA regulates it as a secondary drinking water contaminant based on aesthetic problems, such as taste and staining. Narrative, rather than numeric criteria, is more appropriate to guard against such effects. Therefore, the current numeric manganese criteria should be deleted and a narrative standard adopted in its place.

## **METHYLMERCURY HUMAN HEALTH CRITERIA**

### **7 COMMENTS**

- Manganese has no direct health effects. EPA regulates it as a secondary drinking water contaminant based on aesthetic problems, such as taste and staining. Narrative, rather than numeric criteria, is more appropriate to guard against such effects. Therefore, the current numeric manganese criteria should be deleted and a narrative standard adopted in its place.
- Please highly consider putting methylmercury in your top five as there is currently no Alaskan limit to air emissions of methylmercury to my knowledge. This is very concerning, especially in light of the proposed Donlin Creek Mine on the Kuskokwim in an area with 3 parts per million estimated mercury content, and an unreleased known amount by Novagold and Barrick, researching the land for the mine. As a physician, this is extremely concerning, especially for the reproductive health and future pediatric patients eating a large amount of salmon. I will begin working as a physician in Bethel in Sept 07 and would like to be aware of the dangers present. MethylMercury would be my top two votes for priorities to study through 2010.
- Fish is one of the main subsistence food source, close monitoring should continue.
- People would have to limit fish consumption if mercury were present from mines.
- There are 55 abandoned mercury sites in AK - with resource development in many of these areas.
- Renewable salmon and freshwater fish and also variety of game.
- Byproduct of mining activities - bioaccumulation potential.

## **NITRATES**

### **2 COMMENTS**

- Interested in participating in any advisory group that affects the mining industry, such as aluminum, ammonia, temperature, TDS, and nitrate. I did not list these parameters above because the existing standards for these parameters have been adequately protective in my experience. However, if the state chooses to evaluate these parameters, or others, such as biocriteria, I would like to participate.
- Impact of this toxic substance on salmonids - and byproduct of mining activities.

## **NUTRIENT CRITERIA (COOK INLET ECOREGION ONLY)**

### **NO COMMENTS**

## **SEDIMENT**

### **4 COMMENTS**

- Potential impacts to MOA's stormwater permit.

- Turbidity and water quality standards for construction discharge. The current standard is confusing and difficult to apply.
- More water sampling for water quality in our drinking water systems.
- Oily ballast water from tankers is treated at the Valdez Marine Terminal's Ballast Water Treatment Facility (BWTF). The treatment reduces the oily concentrations to a few parts per million before the water is discharged into Port Valdez. Two effluent discharge permits are issued to Alyeska Pipeline Service Co. that allows treated tanker ballast water to be discharged into the port. These permits must be renewed every five years. The National Pollution Discharge Elimination System (NPDES) is issued by the Environmental Protection Agency (EPA), and the Mixing Zone permit is issued by the Alaska Dept. of Environmental Conservation (ADEC). As such, we support the look into the need and value of the State of Alaska developing and adopting numeric sediment quality criteria and/or guidance on the development of site specific sediment quality criteria.

## **TEMPERATURE\***

### **4 COMMENTS**

- Interested in participating in any advisory group that affects the mining industry, such as aluminum, ammonia, temperature, TDS, and nitrate. I did not list these parameters above because the existing standards for these parameters have been adequately protective in my experience. However, if the state chooses to evaluate these parameters, or others, such as biocriteria, I would like to participate.
- Permafrost melting is affecting groundwater flow with warmer temperatures and DEC must take that into consideration.
- The increasing temperature of the Pacific Ocean is triggering a meltdown of carefully balanced interactions in the marine community. Water temperature is an important factor determining habitat ranges for many organisms and even minor changes are seriously disruptive. In the last 60 years, average ocean temperatures between 0-300 meters have increased by 0.31°C (0.56°F) (Field et al. 2000). For example, in just six decades, California's shoreline ocean temperatures warmed by 0.79°C (1.4°F) and Monterey tide pool species changed significantly with more warm water species present and a decline in cool water species (Sagarin 1999). These impacts are likely to be even more severe in Alaska because of its higher latitude. Warming waters are devastating for species that are unable to migrate toward cooler waters because of habitat requirements, environmental barriers, or lack of mobility (Scavia 2002). The range of many of Alaska's marine animals cannot expand much further north to cooler waters. Global warming has also been linked to the spread or increased virulence of numerous marine pathogens (Harvell et al. 2002).
- Bristol Bay salmon comprise 40 percent of the global salmon resources. Climate change is projected to affect aquatic ecosystems through changes in water temperature, hydrological cycles, and degree days. As noted in the review packet increases in temperatures, shifts in annual temperatures, and loss of cold water refuges can have a negative impact on salmon. We concur with ADEC that temperature is a critical topic to include in the triennial review process.

## OTHER COMMENTS

- Drinking water standards in the urban environment are in many cases unattainable standards. Many state and city resources are spent in efforts to mitigate for an unattainable standard which is often a waste of valuable resources.  
Institutionalizing a new standard for recreational use in highly urbanized regions rather than the current state-wide standard of drinking water for all water bodies.
- Copper limits: Because copper is toxic to salmon and inhibits its ability to spawn.
- Will the new electric power plant plans that has just been voted upon in the Mat-Su Valley be included in these studies and or red flag for possible problems in the future to our wet land as well as the Knik and Mat-River?
- Kensington Mine - Juneau, AK. Changed wording in permit application, used the word "fill" rather than "waste." That was wrong. Toxic waste should not be dumped into Alaskan waters. We are also concerned about waste generated by mining exploration.
- Science shows Alaska standard does not protect marine life.
- 1) Metals (including Copper): The fish would not swim up to their spawning ground. Toxic Metals - because the procedures, processes and methods are hard to control sources of pollution of lakes and rivers. 2) Dust control on different heavy metal floating the air: We eat the wild animals and animal and human eat from mother earth which was grown each year. 3) Zinc, Lead and Chromium: They are very small particles called colloids that settle out very slow in the water and flow with the water.
- I have reviewed the Alaska Water Quality Manual for Toxic and Other Deleterious Organic and Inorganic Substances. I fail to see how DEC will implement or uphold the water quality standards in the manual. DEC should not merely adopt the standards by reference, DEC should also develop implementation plans to uphold the water quality standards in the manual and the tables in 18 AAC 70.020.
- Rock Creek and Big Hurrah Creek near Nome, Alaska should be added to the list of waterbodies whose designated use class has changed so as to alert the public that a large scale water use reclassification will take place.
- Definition of Sodium Absorption Ratio and use of sodium percentage. DEC should allow for the use of inexpensive multi-meters that the public may use inexpensively without having to have a separate laboratory assay water samples for the concentration of Na, Ca, & Mg salts. Since the manual identified in the definition is very costly and hard to obtain DEC must recognize that available water quality technologies allow private persons the ability to conduct water quality testing on their own. The use of the term sodium percentage in connection with the Sodium Absorption ration seems conflicting and may allow for violations of water quality. Are they interchangeable terms for the same standard? If so the definition needs reconciliation.
- The standards in effect are tough enough - I feel we really do a better job than the average job at this. If anything the decisions need to be left out of the court room and left to the people who live on and manage the land.

- Cultural conceptual site specific models. Assess the environmental impacts on subsistence, bush and remote living peoples.
- Potential natural disasters which could affect water quality. Alaska is vulnerable.
- Cyanide - We need baselines before any more gold mines using cyanide are permitted.
- We have reviewed the state's list of potential triennial review topics. We feel that the department should include a review of the zone of deposit (ZOD) regulation in the triennial review. At least as applied in most permits, ZODs violate the Clean Water Act by unreasonably degrading marine waters and failing to protect existing uses fully. Further, DEC should reverse changes made during the Murkowski Administration permitting mixing zones in salmon spawning streams and weakening residue standards. These standards are critical for protecting Alaska's wild salmon and other valuable marine and freshwater resources. The state has spent considerable time and money marketing our wild salmon and fishermen are seeing the results through higher prices for fish. These weakened standards erode this marketing advantage provided by Alaska's commitment to clean water and healthy fish.
- Subsistence Way of Life: Fish is major food that feeds the region. Other resources, that feed the region. You can't take one resource and expect the natives to live.
- Ocean Acidification: The ocean absorbs anthropogenic carbon dioxide which is changing seawater chemistry and, inter alia, causing it to become more acidic. Ocean acidification threatens sealife by impairing calcification among other adverse impacts. This is one of the primary threats to marine ecosystems and requires actions to limit CO<sub>2</sub>. Alaska's standard for pH is insufficient because it allows pH changes so severe that marine ecosystems could collapse. Currently, Alaska requires that pH not vary more than 0.2 units outside of the naturally occurring range to support aquatic life uses. 18 AAC 70.020(b)(18). This standard was derived before much was known about ocean acidification. The antiquated standard is now unreasonable because it only addresses localized discharges that can mix and dilute with seawater. In contrast, the pH change caused by carbon dioxide uptake is pervasive and a decrease of 0.2 units will be devastating for marine life.
- Global warming: Impacts of global warming should be considered when revising water quality standards.
- Subsistence: Proximity of Rock Creek to our homes and subsistence. Fish/berries recreation is unpardonable. Please don't allow it this close. They will affect our water quality.
- Feed habitat for caribou, moose and other game. Study needs to be done to ensure that no harm is done to the feeding ground.
- Cyanide and Lead: The effects it will have on fish and wildlife.
- AK heavy metals going into our body of water. Eliminate poison going into the rivers at all cost to protect our health!
- Acid rock drainage (ARD) standards and methods, dissolved gas in anadromous streams. Both of these suggested topics would address potential water-quality

problems that could result from the increased interest in mining in the state generally and in the Bristol Bay watersheds in particular.

- Kinetic Bench Testing: We support the comments submitted by the Bristol Bay CRSA to develop standards and regulations for both static and kinetic bench testing methods for acid rock drainage.

## MINING

- 1) Metals (including Copper): The fish would not swim up to their spawning ground. Toxic Metals - because the procedures, processes and methods are hard to control sources of pollution of lakes and rivers. 2) Dust control on different heavy metal floating the air: We eat the wild animals and animal and human eat from mother earth which was grown each year. 3) Zinc, Lead and Chromium: They are very small particles called colloids that settle out very slow in the water and flow with the water.
- Kensington Mine - Juneau, AK. Changed wording in permit application, used the word "fill" rather than "waste." That was wrong. Toxic waste should not be dumped into Alaskan waters. We are also concerned about waste generated by mining exploration.
- Interested in participating in any advisory group that affects the mining industry, such as aluminum, ammonia, temperature, TDS, and nitrate. I did not list these parameters above because the existing standards for these parameters have been adequately protective in my experience. However, if the state chooses to evaluate these parameters, or others, such as biocriteria, I would like to participate.
- Mining - Tailings, copper, etc. etc. Everything to do with mining. Doing research on my own I've not come across mines that haven't contaminated mother nature all are TOXIC. 1) Mining - Pebble mining - everything. Alaska has pristine waters and mining is jeopardizing that. 2) Coal mining in Alaska. Again AK has pristine waters - possible to be the only last pristine waters! 3) Oil & Gas offshore exploration. Mining - my community is 100% against mining especially Pebble NDM.
- Please highly consider putting methylmercury in your top five as there is currently no Alaskan limit to air emissions of methylmercury to my knowledge. This is very concerning, especially in light of the proposed Donlin Creek Mine on the Kuskokwim in an area with 3 parts per million estimated mercury content, and an unreleased known amount by Novagold and Barrick, researching the land for the mine. As a physician, this is extremely concerning, especially for the reproductive health and future pediatric patients eating a large amount of salmon. I will begin working as a physician in Bethel in Sept 07 and would like to be aware of the dangers present. MethylMercury would be my top two votes for priorities to study through 2010.
- Living here in Nome all of my life I have been exposed to the effects of historic and current mining activities on water quality and from that perspective I must say that 18 AAC 70 is not strong enough to protect water from the negative impacts from placer and hard rock mining. Enforcement is lax and almost non-existent and is effectively non-existent because of our remoteness despite daily flights in and out of Nome. The recent deficiencies found with the Rock Creek mine is proof that enforcement and oversight of mining operations is lacking.

- Pebble mine will not be able to assure this.
- Mining waste has carcinogens in it. People would have to limit fish consumption if mercury were present from mines.
- No Pebble Mine! Alaska has plenty of jobs and money, the mine will ruin resources.
- Heavy metals from mining contaminating or potentially contaminating watersheds. Avoid EPA superfund site as in Coeur'd'Alene Lake, Idaho.
- Development of land without concern for erosion which releases toxins held within the ground matter. Pollute the streams - kill the fish and destroy fresh water for consumption by animals and humans.
- Impacts to Water Quality - Land - Vegetation and Fish and Game - Human Health
- Water Quality which is only 30 miles or less from the proposed mine.
- Proximity of Rock Creek to our homes and subsistence. Fish/berries recreation is unpardonable. Please don't allow it this close. They will affect our water quality.
- Cyanide and Lead: The effects it will have on fish and wildlife.
- Alaska needs to enforce this act, quit signing off on min tailings being dumped into lakes and streams. Start protecting them better. My biggest concern is protecting the world's greatest fishery in the world, Bristol Bay. I'm sorry, I've studied open pit mining, the Pebble Mine needs to go away.
- Both of these suggested topics would address potential water-quality problems that could result from the increased interest in mining in the state generally and in the Bristol Bay watersheds in particular. (see paper)
- Review documented occurrences of inorganic substances and mining activities. Toxic effects on native fish populations.
- Air Quality: Tailings dust can contaminate waters.
- Mining: BBNA's Board of Directors is very concerned that large scale mining will affect both surface and groundwater quality which would in turn harm the largest wild commercial salmon fishery in the world, a world class sports fishery, and the resources our people have relied on for thousands of years for subsistence.
- Kinetic Bench Testing: We support the comments submitted by the Bristol Bay CRSA to develop standards and regulations for both static and kinetic bench testing methods for acid rock drainage.

## **MIXING ZONES**

- The current regulation prohibits ADEC from authorizing a mixing zone that would adversely affect the present and future capability of "an area" to support spawning, incubation, or rearing of salmon. 18 AAC 70.240(e)(2). Because of the imprecision of this provision and the fact that it potentially prohibits mixing zones for certain parameters in any waters where salmonids are present, this provision should be deleted. Alternatively, the regulation should be clarified to explain that the intent behind this provision is to protect the waterbody as a whole.
- Mixing zone rule illegal.
- No mixing zones should be allowed in fish spawning areas. All fish species within a waterbody are crucial for water quality to be maintained. Scuplin, stickleback and other prey fish exist in extreme upper reaches of streams and are often

ignored in regulatory decisions. No mixing zones should be allowed in any fish spawning area.

- Further, DEC should reverse changes made during the Murkowski Administration permitting mixing zones in salmon spawning streams and weakening residue standards. These standards are critical for protecting Alaska's wild salmon and other valuable marine and freshwater resources. The state has spent considerable time and money marketing our wild salmon and fishermen are seeing the results through higher prices for fish. These weakened standards erode this marketing advantage provided by Alaska's commitment to clean water and healthy fish.
- Oily ballast water from tankers is treated at the Valdez Marine Terminal's Ballast Water Treatment Facility (BWTF). The treatment reduces the oily concentrations to a few parts per million before the water is discharged into Port Valdez. Two effluent discharge permits are issued to Alyeska Pipeline Service Co. that allows treated tanker ballast water to be discharged into the port. These permits must be renewed every five years. The National Pollution Discharge Elimination System (NPDES) is issued by the Environmental Protection Agency (EPA), and the Mixing Zone permit is issued by the Alaska Dept. of Environmental Conservation (ADEC). As such, we support the look into the need and value of the State of Alaska developing and adopting numeric sediment quality criteria and/or guidance on the development of site specific sediment quality criteria.
- In 2006 a major revision to state mixing zone regulations occurred, opening wide loopholes for the pollution of anadromous and resident fish freshwater spawning areas. Under the new regulations a spawning area is defined as existing only when fish are actively spawning, i.e. depositing eggs and milt, allowing for discharges to occur in those periods when fish are not present and spawning. Additionally, in the new regulatory framework resident species such as Arctic Char and Dolly Varden are excluded from protection, whereas the former regulation protected their spawning areas. Resident fish form an important part of the diet for people living in rural Alaska, and are an important to the economics and enjoyment of sport fishing. Their protection should be revisited in the Triennial Review forum, as should the new definition of "spawning area".
- Please add mixing zones as an item for consideration during the Triennial Review process. I co-sponsored a bill with Representative Seaton about mixing zones and representing coastal areas I have strong feelings about maintaining high water quality. In 2006 a major revision to state mixing zone regulations occurred. They opened loopholes for the pollution of anadromous and resident fish freshwater spawning areas. Resident fish are an important to the economies of fishing communities and enjoyment of sport fishing. Their protection should be revisited in the Triennial Review forum, as should the new definition of "spawning area." I agree with Representative Seaton's request that the Department of Environmental Conservation consider posting on its web-site those comments that it receives during the Triennial Review process. This would indeed allow the public to better understand the concerns of multiple stakeholders who are helping to form water quality standards for this vital public resource.
- They have the potential to degrade water quality and big business is pushing too hard to allow them.

## **NATURAL CONDITIONS**

- We understand that in its October 2, 2006 comments on ADEC's most recent amendments to the water quality regulations, EPA criticized the concurrent monitoring approach outlined in the State's Guidance for the Implementation of Natural Condition-Based Water Quality Standards dated November 15, 2006 and adopted by reference in 18 AAC 70.010(d) ("Guidance"). EPA's specific concern relates to permit conditions being based exclusively on concurrent monitoring. However, the agency has indicated that it would be appropriate to use concurrent measurements to provide an affirmative defense for exceedance of a numeric permit limit if the exceedance was caused by natural conditions. It would be helpful to have this approach referenced in the State's Guidance to provide permitting options for projects that must receive a State-certified Clean Water Act permit.
- I believe the determination of the "natural condition" must take into account the diversity of the entire water body, and DEC must use the "cleanest" natural condition as the water quality threshold. For instance the upper portion of the water body may be slightly lower in Arsenic concentration while the lower portion may be higher. In all there is some mixing that occurs but from my review of development projects DEC is too quick to use water quality information that is subjective such as the case with the Rock Creek mine where in my opinion DEC wrongfully determined that the natural condition of Rock Creek should be assessed from the site where Arsenic and other toxic minerals were higher. DEC views differed from EPA's view and as such the threshold water quality of Rock Creek was lowered and higher amounts of toxicity were allowed. 18 AAC 70.010 should be changed so that when any other State or Federal agency differs in opinion as to what the natural condition of threshold is that the cleanest standard applies. DEC should not be allowed to solely determine the natural conditions of a site.

## **TURBIDITY**

- Turbidity and water quality standards for construction discharge. The current standard is confusing and difficult to apply.
- Seek to add turbidity to the list of triennial review topics. Want natural condition-based standards for dry or intermittent streams. Disagree with the regulations that consider dry or intermittent streams as a water of the U.S. - seek natural condition-based standard or guidance document regarding how standards would apply to this type of discharge.
- Please consider adding a review of the standards as they apply to construction storm water discharges to your list of priority topics. The current turbidity standard is not explicit on the issue of discharge compliance. Is the standard to be applied at the point of discharge (as you would think with the 5 NTU above background turbidity criterion)? Or is the standard to be considered as the net effect of discharge (as is implied by the 10% increase in turbidity criterion)? Turbidity criterion is difficult to meet during construction in situations where the criterion is 5 NTU above natural conditions. When background turbidity is very high in a glacial river, is the standard maximum increase of 25 NTU warranted?

We request that DEC review the turbidity criterion. We look forward to continuing to work with you on the review.