

**Alaska Department of Environmental Conservation  
Response to Comments**

**For**

**Section 401 Certification**

**National Pollutant Discharge Elimination System  
Alyeska Pipeline Service Company - Valdez Marine Terminal**

**NPDES Permit No. AK0023248**

**First Public Notice February 8 – March 8, 2012**

**Second Public Notice August 1, 2012 – August 30, 2012**

**October 29, 2012**



Alaska Department of Environmental Conservation  
Wastewater Discharge Authorization Program  
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Anchorage, AK 99501

## 1. Introduction

### ***Summary of Facility/Permit***

Alyeska Pipeline Service Co. (Alyeska) operates the Valdez Marine Terminal facility (VMT) located at the southern terminus of the Trans Alaska Pipeline System at Jackson Point, Valdez, Alaska. Crude oil transported by the pipeline is temporarily stored onsite prior to transfer to tankers that periodically moor at ship berths located at the VMT. Some tankers off load ballast water contaminated with oil to the ballast water treatment facility (BWTF) before taking on oil for shipment. After separating out any residual oil, the ballast water is treated to remove dissolved constituents prior to discharge via Outfall 001 to the waters of Port Valdez. Treated domestic wastewater generated from personnel working at the VMT is discharged via Outfall 002 to the waters of Port Valdez.

The reissued National Pollutant Discharge Elimination System (NPDES) Permit AK0023248 (permit) provides coverage for VMT discharges associated with Outfalls 001 and 002. The first NPDES permit authorizing the discharge from the facility was issued by the Environmental Protection Agency (EPA) on December 30, 1974 and was subsequently reissued in August 1980, May 1989, and May 1997. The 1989 and 1997 permits also included the domestic wastewater discharges from the VMT. The permit was again reissued in August 2004 and subsequently expired on July 31, 2009; however, Alyeska submitted a timely application and received administrative extension to continue operation under the 2004 NPDES permit until such time a new permit was reissued. Since the 2004 reissuance, significant changes to the BWTF have occurred, including large scale flow reductions, leading to the reduction of pollutants discharged through Outfall 001.

### ***Opportunities for Public Participation***

The Alaska Department of Environmental Conservation (DEC or the Department) first public noticed issuance of a draft Section 401 Certification for AK0023248 on February 8, 2012. A second public notice and comment period began on August 1, 2012 due to significant revisions to the draft certification. To ensure adequate public notification and opportunities for participation, the Section 401 Certification was:

- identified in a letter from EPA dated December 6, 2011 to DEC requesting a draft Section 401 Certification,
- public noticed concurrently with the EPA draft NPDES permit and fact sheet with a comment period of February 8 – March 8, 2012,
- public noticed as a revised draft Section 401 Certification with a comment period from August 1 to August 30, 2012,
- public noticed in the Valdez Star newspaper on August 8 and 15, 2012 as a revised draft Section 401 Certification,

- identified by EPA in a letter dated October 15, 2012 requesting a final Section 401 Certification, and
- issued as a final Section 401 Certification concurrent with the final permit in October 2012.

With respect to the first publicly noticed draft Section 401 Certification, DEC received comments from two interested parties, Alyeska and the Prince William Sound Regional Citizens Advisory Council (RCAC). During the second public notice for the revised draft Section 401 Certification, only Alyeska provided comments. The second comments submitted by Alyeska only served to reaffirm that all of their previous comments were still valid. Accordingly, note that DEC's response to Alyeska comments apply appropriately to both the first and second comment periods.

Some comments pertaining primarily to the draft NPDES permit and fact sheet are included in this response to comments. Typically, DEC responds only to those comments specifically regarding the draft Section 401 Certification. However, some comments specific to the draft permit reference DEC as well as EPA. Although DEC is not responsible for responding to comments on the draft permit (and fact sheet), these comments were responded to for clarification and to ensure completeness, as appropriate.

## **2. General Support and Opposition for the Permit**

### **2.1 Comment Summary**

The Department received comments of both general support and opposition to the permit from Alyeska and the RCAC. Comments directed to DEC from both entities were primarily concerned with DEC's authorization of mixing zones. Other comments not directly related to the mixing zone authorizations in the Section 401 Certification were also presented, with emphasis on Whole Effluent Toxicity (WET) requirements.

#### ***Response:***

In response, DEC responded to questions and concerns regarding authorization of mixing zones, WET requirements and Section 401 Certification with respect to water quality standards (WQS), which are codified in Alaska Administrative Code (AAC) 18 AAC 70. Other comments that referenced DEC that did not pertain to mixing zone authorizations or WQS were responded to for completeness and clarification on underlying authority.

## **3.0 Comments From Alyeska**

### **3.1 Comment Summary**

Alyeska does not agree that EPA and DEC have demonstrated the need or rationale to require fecal coliform and enterococci bacteria limits in the draft permit for the domestic Outfall 002.

However, if the bacteria limits are carried forward into the final permit, Alyeska requests authorization for a mixing zone for these parameters.

**Response:**

DEC responds that inclusion of permit limits for fecal coliform and enterococci bacteria in the draft permit rests with EPA and is outside the legal purview of DEC's Section 401 Certification. However, DEC does have authority under 18 AAC 70.240 – 18 AAC 70.270 to authorize a mixing zone in the Section 401 Certification. DEC has authorized a mixing zone for Outfall 002 for fecal coliform and enterococci bacteria, ammonia, pH and total residual chlorine. The mixing zone is a 0.32 meter zone in all directions around Outfall 002. This mixing zone shall become effective at the conclusion of the compliance schedule.

**3.2 Comment Summary**

Based on their modeling efforts, Alyeska states that the description of the chronic mixing zone for Outfall 001 should be as follows: “A rectangle that extends 50 meters in all directions from the 61 meter long diffuser barrel.”

**Response:**

DEC replies that the description of the mixing zone dimensions “A rectangle that extends 50 meters in all directions from the 61 meter long diffuser barrel” is noted as being diagramed in Figure 1, Part 1 of the Mixing Zone Application, page 4. DEC agrees with the accuracy of the description and will incorporate it into the final Section 401 Certification.

**3.3 Comment Summary**

Alyeska recommends that the acute mixing zone for Outfall 001 be set to either 18 meters in all directions from the diffuser barrel or five meters in all directions from the diffuser barrel, both of which are in accordance with the DEC acute mixing zone guidance contained in *Implementation Guidance: 2006 Mixing Zone Regulation Revisions, February 3, 2009 (2006 Implementation Guidance)*.

**Response:**

The 2006 mixing zone regulations found in the 2006 version of the WQS (18 AAC 70) have not been approved by EPA for use in NPDES or APDES permits issued in the State of Alaska. The most recent version of the EPA-approved WQS are the 2003 standard. Accordingly, the use of the *2006 Implementation Guidance* is not appropriate. However, regulation 18 AAC 70.255(d) in the 2003 version of the WQS references the same methods for sizing acute mixing zones contained in the *2006 Implementation Guidance* and the *EPA-823-B-94-005a - EPA Water Quality Standards Handbook, Second Edition, August 1994*. Depending on the method used, the acute mixing zone could be either five or 18 meters in size. Given that the five meter mixing zone represents the smallest practicable size, it has been retained in the final Section 401 Certification for the acute mixing zone for Outfall 001. Additionally, DEC responds that “five

meters in all directions from the diffuser” will be used to describe the boundary of the acute mixing zone in the final certification.

### **3.4 Comment Summary**

Alyeska directed comments to both DEC and EPA objecting to specific elements of the WET requirements contained in the draft permit. Similarly, comments were directed to both agencies objecting to the new permit water quality-based effluent limits (WQBEL) for fecal coliform and enterococci bacteria and commenting that other facilities in the state have large mixing zones for fecal coliform bacteria.

#### **Response:**

With the exception of authorizing chronic and acute WET mixing zones associated with Outfall 001, DEC has not included additional WET requirements in its draft or final Section 401 Certification. Excluding the aforementioned sentence, all WET requirements discussed in the comments were included in EPA permit. Accordingly, it is appropriate for EPA to respond to comments relating to permit WET requirements, not DEC.

The decision to include WQBELs for fecal coliform and enterococci bacteria post completion of a three-year compliance schedule was included in the EPA permit. Similarly to the above, since the requirement was a permit decision, and not a Section 401 Certification condition, it is appropriate for EPA to respond to those comments. In terms of the large bacteria mixing zones authorized for certain municipalities in the state, Alyeska has cited many facilities that have an approved 301(h) waiver from secondary treatment standards (40 CFR Part 133) from EPA, which require large mixing zones to meet certain water quality criteria (e.g., fecal coliform bacteria). Further, in DEC’s second public noticed draft Section 401 Certification, a mixing zone for fecal coliform and enterococci bacteria was authorized for the subject parameters once the new permit limits are in effect post completion of the compliance schedule.

### **3.5 Comment Summary**

Alyeska requests that total aqueous hydrocarbons (TAqH) be added to the list of constituents authorized in the mixing zone even though EPA determined that no reasonable potential would occur at the boundary of the chronic mixing zone for Outfall 001.

#### **Response:**

The reasonable potential analysis projects that TAqH will exceed applicable water quality criterion at the end-of-pipe following treatment. In addition, based on the mixing zone model, there is assimilative capacity in the receiving water to authorize a mixing zone for TAqH. Accordingly, DEC has included TAqH in the chronic mixing zone for Outfall 001.

### **3.6 Comment Summary**

Alyeska comments – Page 15 Part I.H.2 (a-b). Alyeska states that for Outfall 001, DEC authorized a mixing zone for chronic toxicity with a dilution of 9.6. Alyeska explains that the 9.6 dilution factor is inappropriate and that the model has indicated a dilution factor of 56 would result if a 50 meter mixing zone is authorized.

#### **Response:**

DEC responds that mixing zone dilution factors are based on those values obtained from the model output provided by the applicant and/or through verification of such models by DEC. The DEC-authorized chronic mixing zone of 50 meters for Outfall 001 provides a dilution factor of 56 at the boundary of that mixing zone. The 9.6 dilution factor referenced in the comment is a trigger for accelerated WET monitoring included in the draft EPA permit. Therefore, the imposition of a trigger is not under the purview of DEC in the Section 401 Certification.

### **3.7 Comment summary**

Alyeska comments – Page 16 I.H.3 (a-d). Alyeska makes an argument similar to that stated in Comment 3.6 for the dilution factor associated with the acute mixing zone for Outfall 001.

#### **Response:**

DEC responds that it did not authorize a dilution factor of 3.7 for an acute toxicity trigger. The authorized acute mixing zone dilution factor for Outfall 001 is 23 and was determined from model output provided by Alyeska and evaluated by DEC for the five meter mixing zone. Similar to the response above for the chronic WET trigger of 9.6, the 3.7 dilution referenced in the comment is a trigger for accelerated WET monitoring included in the draft EPA permit and is accordingly not under the purview of DEC in the Section 401 Certification.

### **3.8 Comment Summary**

Alyeska indicates that Alaska chose not to adopt criteria for acute WET in DEC standards. The acute WET criterion of 0.3 acute toxicity units (TUa) is informative but has no regulatory basis in Alaska.

#### **Response:**

DEC responds that 18 AAC 70.030, which covers WET limits, does not include the adoption of the criterion of 0.3 TUa for acute WET tests as recommended in the *Technical Support Document for Water Quality-based Toxics Control, March 1991* nor is the 0.3 TUa criterion established in any other DEC regulation or policy. The 0.3 TUa criterion for acute WET was included by EPA in its draft permit, which is beyond the purview of DEC's Section 401 Certification.

### **3.9 Comment Summary**

Alyeska strongly objects to the increased WET monitoring and trigger values as required by the draft permit for Outfall 001 and believes EPA and DEC have no basis to require permittees to increase monitoring and set trigger value limits for parameters that show no reasonable potential to impair water quality.

#### **Response:**

As indicated previously, WET monitoring frequencies and trigger values associated with Outfall 001 are included as provisions of the EPA draft permit and are beyond the purview of DEC's Section 401 Certification.

### **3.10 Comment Summary**

Alyeska requests that the requirement to notify DEC prior to any sludge removal activity be deleted as it is an onerous and unsupported requirement that has no basis or value.

#### **Response:**

DEC responds that solid waste is regulated by the Resource Recovery Act and the Alaska Solid Waste Management regulations found in 18 AAC 60 and is typically addressed via Best Management Practices (BMP) in NPDES permits. The final permit retains this requirement in Section II.D.8.e - BMP Plan, BMP Requirements.

### **3.11 Comment Summary**

Alyeska contends that the requirement that DEC be notified 15 days in advance of abrasive blasting projects to provide DEC personnel oversight responsibilities on NPDES issues at VMT is no longer valid and that EPA and DEC can request this information at any time and that the requirement to keep abrasive blasting activities is superfluous except in the case where blasting occur over open water.

#### **Response:**

DEC responds that although the previous Section 401 Certification for NPDES permit AK0023248 included requirements for notification of abrasive blasting projects, this condition has not been retained in the current Section 401 Certification. However, note that the final permit retains this requirement under Section II.D.8.e - BMP Plan, BMP Requirements.

## **4.0 Comments from RCAC**

RCAC comments are based on results from the Environmental Monitoring Program and Long Term Environmental Monitoring Program. There is some historic evidence of oil in sediments near the diffuser of Outfall 001. RCAC questions whether the effluent plume contacts the bottom under unanticipated conditions and recommends collecting seasonal water column data at the

diffuser location to create a more realistic model and thus better assurance of mixing zone compliance.

***Response:***

Mixing zone analysis employs cumulative “worst-case” conditions such that the determined dilution is reliably conservative. This is due to an understanding that it is highly unlikely that all “worst-case” conditions will occur simultaneously. For the mixing zone study for Outfall 001, the most critical parameters are temperature and density. The mixing zone model uses updated maximum effluent flow rates and the 99<sup>th</sup> percentile density derived from five years of recent and representative monitoring data. Effluent flow rates are based on maximum design flow rates that are seldom observed and the probability that the highest flows occur with the 99<sup>th</sup> percentile effluent characteristics is very low. In the receiving water, current and density stratification are critical parameters. Between October 1971 and 1986, Alyeska conducted eight stratification and six current studies. The mixing zone analysis uses the 10<sup>th</sup> and 90<sup>th</sup> percentile currents, as well as the greatest observed stratification. DEC finds the volume and nature of the data to be sufficient as a basis for the mixing model for Outfall 001.