

STATE OF ALASKA

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

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Mr. Mike Lidgard, NPDES Unit Manager
U.S. Environmental Protection Agency, Region 10
1200 Sixth Avenue, Suite 900, OWW-130
Seattle, Washington 98101

RE: DEC Section §401 Certification of NPDES Permit No. AK0023248, Alyeska Pipeline Service Company, Valdez Marine Terminal

On December 6, 2011, EPA requested a draft 401 certification of the permit for the issuance of a National Pollution Discharge Elimination (NPDES) permit AK0023248 for Alyeska Pipeline Service Company, Valdez Marine Terminal.

In accordance with Section 401 of the Clean Water Act (CWA) and Alaska Administrative Code 18 AAC 15 (Administrative Procedures), 18 AAC 70 (Water Quality Standards), and 18 AAC 72 (Wastewater Discharge), the Alaska Department of Environmental Conservation (DEC or the department) has prepared the enclosed Section 401 Certificate of Reasonable Assurance, including an Antidegradation Analysis under 18 AAC 70.015. The department will accept and review any comments received on the certification during the public notice of the NPDES permit.

NPDES permit AK0023248 regulates discharges from Valdez Marine Terminal to Port Valdez, Valdez, Alaska. EPA notified the State of its intent to propose effluent limits for existing wastewater discharges covered by the permit and to prepare a Fact Sheet to clarify those limits.

The department reviewed the existing and proposed wastewater discharges with respect to the proposed limits and the antidegradation requirements of the Alaska Water Quality Standards and finds any reduction in water quality of Port of Valdez to be in accord with the requirements of 18 AAC 70.015, Antidegradation Policy.

The department has both an informal review process and a formal administrative appeal process for final permit decisions. An informal review request must be delivered within 15 days after receiving the department's decision to the Director of the Division of Water at the following address:

Director, Division of Water
Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, AK 99501-2617

Interested persons can review 18 AAC 15.158 for the procedures and substantive requirements regarding a request for an informal review. See <http://www.dec.state.ak.us/commishiReviewGuidance.htm> for information regarding appeals of department decisions.

An adjudicatory hearing request must be delivered to the Commissioner of the department within 30 days of the permit decision or a decision issued under the informal review process, whichever is later. An adjudicatory hearing will be conducted by an administrative law judge in the Office of Administrative Hearings within the Department of Administration. A written request for an adjudicatory hearing must be delivered to the Commissioner at the following address:

Commissioner
Alaska Department of Environmental Conservation
410 Willoughby Avenue, Suite 303
Juneau, AK 99811-1800

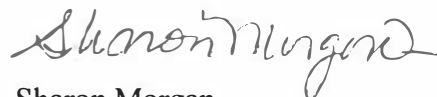
Interested persons can review 18 AAC 15.200 for the procedures and substantive requirements regarding a request for an adjudicatory hearing. See <http://www.dec.state.ak.us/commish/ReviewGuidance.htm> for information regarding appeals of department decisions.

Please be advised that, pursuant to 18 AAC 15.120(c), the certification of the NPDES permit constitutes the permit required under Alaska Statute 46.03.100.

18 AAC 15.120(c) also states, "Any rights or privileges inuring to the benefit of EPA in the NPDES permit, including any right to enter, inspect, sample, and have access to records, also inure to the benefit of the department. Any reports or other information filed with EPA in accordance with the NPDES permit must be contemporaneously filed with the department."

If you have any questions regarding this §401 certification, please contact Marc Bentley at marc.bentley@alaska.gov or (907) 269-6287.

Sincerely,



Sharon Morgan
Program Manager

Enclosure: Certificate of Reasonable Assurance

Copies: Mike Lidgard, EPA Region 10/Seattle
Erin Seyfried, EPA Region 10/Seattle
Marc Bentley, DEC Anchorage

**STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION CERTIFICATE OF
REASONABLE ASSURANCE
AK0023248**

A Certificate of Reasonable Assurance, as required by §401 of the Clean Water Act (CWA) was requested by the Environmental Conservation Protection Agency (EPA) Region 10 for National Pollutant Discharge Elimination System (NPDES) Permit (the permit) No. AK0023248, Alyeska Pipeline Service Company, Valdez Marine Terminal on December 6, 2011. Water Quality Certification is required for the activity because the activity will be authorized by the permit, and discharges to State waters will result from the activity. Discharges(s) regulated by the effluent limits may result from the activities proposed in the permit.

The area of coverage includes State and federal waters for the following proposed discharges:

<u>Discharge Number</u>	<u>Discharge Name</u>
001	Ballast Water Treatment Facility Effluent
002	Sewage Treatment Plant Effluent

Public notice of the application for this §401 certification has been made in accordance with made in accordance with 18 Alaska Administrative Code (AAC) 15.140.

The department reviewed the permit and fact sheet and certifies that there is reasonable assurance that the limits are in compliance with the requirements of §401 of the CWA, which includes the Alaska Water Quality Standards (WQS) 18 AAC 70, as amended through June 26, 2003, provided that the terms and conditions of this certification are adhered to. Through this certification, in accordance with 18 AAC 15.120, the final permit will constitute the permit required under Alaska Statutes 46.03.100.

DEC is specifying the following permit stipulations under authority of AS 46.03.110(d):

1. Ballast Water Treatment Facility Effluent (Outfall 001). DEC authorizes a 50-meter radius mixing zone that extends from the sea's surface to the seabed for total aromatic hydrocarbons, total aqueous hydrocarbons, ammonia-nitrogen, zinc, total suspended solids, pH, and whole effluent toxicity.
2. Sewage Treatment Plant Effluent (Outfall 002). DEC authorizes a 10-meter radius mixing zone that extends from the sea's surface to the seabed for pH.

ANTIDEGRADATION ANALYSIS UNDER 18 AAC 70.015 CERTIFICATE OF REASONABLE ASSURANCE

The Antidegradation Policy of the Alaska Water Quality Standards (WQS) at 18 AAC 70.015 states that the existing water uses and the level of water quality necessary to protect existing uses must be maintained and protected. This analysis provides rationale for the Department of Environmental Conservation (DEC or the department) decisions required under §401 of the Clean Water Act (CWA) with respect to the antidegradation policy.

The portion of Port Valdez located in the vicinity of Jackson Point, Alaska is considered State waters subject to 18 AAC 70. The permit covers discharges from Valdez Marine Terminal Outfall 001 and Outfall 002.

Antidegradation determination:

The department's approach to implementing the antidegradation policy, found in 18 AAC 70.015, is based on the requirements in 18 AAC 70 and the department's July 14, 2010, *Policy and Procedure Guidance for Interim Antidegradation Implementation Methods (Interim Methods)*. Using these requirements and policies, the department determines whether a water body or portion of a water body is classified as Tier 1, Tier 2, or Tier 3.

Tier 3 water bodies are those high quality waters that constitute an outstanding national resource, and the department states that the quality of such waters shall be maintained and protected (18 AAC 70.015(a)(3)). This is consistent with the *Interim Methods* recommendations. Alaska has not identified any Tier 3 water bodies.

Tier 1 protection (18 AAC 70.015(a)(1)) applies to water bodies whose existing quality is no better than the CWA "Fishable/Swimmable" uses, and existing water uses and the level of water quality necessary to protect such uses must be maintained and protected (18 AAC 70.020(a)(1)(C) and 18 AAC 70.020(a)(1)(B)(i)). Port Valdez water quality, as a whole, is of a higher quality than Tier 1.

The department determined that Tier 2 applies to the receiving waters in Port Valdez using the DEC *Interim Methods* and DEC's knowledge of the water body associated with the permit. The department also determined that the antidegradation analysis under 18 AAC 70.015(a)(2) is applied to permit limits. The Fact Sheet for the permit describes the derivation of those limits.

Relevant information from environmental studies designed to determine the effects of Valdez Marine Terminal discharges to the Port of Valdez conducted by the Institute of Marine Science, School of Fisheries and Ocean Sciences and the University of Alaska, Fairbanks (Blanchard, et.al., 2011) were reviewed to aide in the antidegradation determination for Outfalls 001 and 002.

The antidegradation policy of the WQS (18 AAC 70.015(a)(2)) states that, if the quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife in and on the water, that quality shall be maintained and protected, unless the department makes five specific findings:

- *18 AAC 70.015 (a)(2)(A). Allowing lower water quality is necessary to accommodate important economic or social development in the area where the water is located.*

The Alyeska Pipeline Bulk Petroleum Storage Terminal and its related industries have been important to the economy of the Valdez-Cordova Borough for over 40 years and comprise the first five in the top ten major industries in the area. Direct impact of the facility and related oil and gas industry was reported by the Alaska Department of Labor and Workforce Development, Research and Analysis (May, 2011) to account for 1147 jobs out of population of 3475 in 2009 making up 33% of total employment for major industries in the borough. In addition, this facility and other directly related industries accounted for 70% of the City of Valdez's budget and 90% of all property taxes generated for the City of Valdez (AOGA, 2011).

The department finds that the lowering of water quality is necessary to accommodate important economic or social developments and finds the requirement is met.

- *18 AAC 70.015 (a)(2)(B). Except as allowed under this subsection, reducing water quality will not violate the applicable criteria of 18 AAC 70.020 or 18 AAC 70.235 or the whole effluent toxicity limit in 18 AAC 70.030.*

The permit limits established for Outfalls 001 and 002 will ensure that water quality criteria will not be exceeded at or beyond the boundary of the mixing zones. Limits are based on Visual Plumes UM3 (Frick, W.E., et.al., 2001), which is an updated version of UMERGE (UM) with a Visual Plumes interface modeling (Baumgartner, et.al., 1993). This re-analysis of the mixing zone size for Outfall 001 is due to a consideration of added constituents to the wastewater requiring the establishment of limits for Outfall 001, as well as reduced effluent flow. The result is a smaller mixing zone than previously authorized. Resizing the mixing zone size for Outfall 002 was deemed unnecessary. The mixing zones are specifically authorized in accordance with 18 AAC 70.240 and have been sized to ensure that all applicable water quality criteria are met at all points outside of the mixing zones.

DEC finds that no violation of applicable water criteria will occur at or beyond the boundary of the mixing zones and that this requirement has been met.

- *18 AAC 70.015 (a)(2)(C). The resulting water quality will be adequate to fully protect existing uses of the water.*

The waters in Port Valdez are protected for the following uses, per 18 AAC 70.020(a)(2)(A) – (D) and 18 AAC 70.050: Water supply for aquaculture, seafood processing, and industrial activities; water recreation, both contact and secondary recreation; growth and propagation of fish, shellfish, other aquatic life, and wildlife; and harvesting for consumption of raw mollusks or other raw aquatic life. The limits will ensure that water quality criteria will not be exceeded at or beyond the mixing zone boundaries of Outfalls 001 and 002. The previous permits issued to the facility included a monitoring program for Port Valdez to address the fate and transport of pollutants in the water column and sediments. These studies provided detailed site specific information on water quality, sediment quality, and physical and biological parameters for Port of Valdez waters. The studies demonstrated that there are only minimal effects to biota in the

immediate area of the diffuser. The reissued permit will continue the requirement to implement a monitoring program.

DEC finds that water quality will be adequate to fully protect the existing uses of the water and that this requirement has been met.

- *18 AAC 70.015 (a)(2)(D). The methods of pollution prevention, control and treatment found by the department to be the most effective and reasonable will be applied to all wastes and other substances to be discharged.*

Wastewater associated with Outfall 001 includes ballast water, stormwater, crude and diesel storage tank water draws, boiler blowdown, service vessel bilges and slops, process water, air pollution scrubber blowdown, potable water, and utility water. Treatment methods for these combined waste streams include primary oil-water solids separation and equalization in covered, air emission-controlled tanks, dissolved air flotation for secondary oil-solids separation with vapors being ducted to a new regenerative thermal oxidizer for destruction of volatile organic compounds. Dissolved air flotation treatment is followed by tertiary treatment in a new 7-tray (shallow tray) air stripper. The air stripper removes essentially all volatile organic compounds from the wastewater with associated exhaust being sent to the regenerative thermal oxidizer to destroy volatile organic compounds stripped from the wastewater. Tertiary treatment is in turn followed by quaternary biological treatment in one of the two existing biological treatment tanks (BTT) to remove any poorly strippable organic compounds that may be present following shallow-tray air strippers. Polishing treatment for volatile organic compounds, if required, will be accomplished by way of an existing packed-tower air stripper that follows the BTTs (Conner, D. 2011).

DEC finds that the methods of pollution prevention, control, and treatment included in the permit are the most effective and reasonable and that this requirement is met.

- *18 AAC 70.015(a)(2)(E). All wastes and other substances discharged will be treated and controlled to achieve (i) for new and existing point sources, the highest statutory and regulatory requirements; and (ii) for nonpoint sources, all cost-effective and reasonable best management practices.*

The NPDES fact sheet describes how effluent limits were established using parameters derived from a mixing zone re-analysis (for Outfall 001 submitted by the applicant). The re-analysis was based on flows and discharge constituents anticipated to be discharged through Outfall 001 during this permit cycle and resulted in a significantly smaller mixing zone for Outfall 001. The size of the mixing zone for Outfall 002 is retained from the November 2001 mixing zone analysis for sanitary wastes discharge from this facility. The fact sheet also describes best management practices that are specific to the permit and deemed necessary to control or abate the discharge of pollutants for nonpoint sources.

The highest statutory and regulatory requirements are defined in the 2003 version of the WQS at 18 AAC 70.990(30) as:

- (A) any federal technology-based effluent limitation identified in 40 CFR §125.3 and 40 CFR §122.29, as amended through August 15, 1997, adopted by reference;
- (B) minimum treatment standards in 18 AAC 72.040; and
- (C) any treatment requirement imposed under another state law (i.e. Alaska) that is more stringent than a requirement of this chapter.

(A) Federal technology-based effluent limitations

EPA has published Effluent Limitations Guidelines (ELG) for shore reception facilities, but none have been published specifically for ballast water treatment facilities. Where EPA has not yet developed guidelines for a particular industry, permit conditions are established using Best Professional Judgment (BPJ) procedures (40 CFR §122.43, §122.44, and §125.3). In the 2004 permit, the dominant parameter influencing the size of the mixing zone was benzene, toluene, ethyl benzene, and xylenes aromatic compounds (BTEX). BTEX is a component of total aromatic hydrocarbons (TAH) and regulated in this permit by the most stringent State WQS (ADEC 2003). The EPA determined that the best available technology for the removal of BTEX, and by extension TAH, is the biological treatment system still in place modified by inclusion of air strippers.

(B) Minimum treatment standards 18 AAC 72.040

18 AAC 70.990(30)(B) (2003) appears to be in error, as 18 AAC 72.040 describes discharge to sewers and not minimum treatment. The correct reference appears to be 18 AAC 72.050, Minimum treatment. This section of the regulations refers to domestic wastewater, not sanitary wastewater, and does not apply to this discharge. However, the permit authorizes the discharge of sanitary wastewater from the sewage treatment plant via Outfall 002 and requires that the discharge meet secondary treatment standards. Therefore, the sanitary wastewater is required to meet minimum treatment standards before discharged.

(C) Any treatment requirement imposed under another state law that is more stringent than 18 AAC 70.

Other regulations beyond 18 AAC 70 that apply to this permitting action include 18 AAC 15 and 18 AAC 72. Neither the regulations in 18 AAC 15 and 18 AAC 72 nor another State law that DEC is aware of impose more stringent treatment requirements than those found in 18 AAC 70.

DEC has determined that the treatment of discharges from Outfalls 001 and 002 conform to the highest statutory and regulatory requirements and the requirement is met.

Date

Sharon Morgan, Manager
Wastewater Discharge Authorization Program

References

- ADEC 2003. *Alaska Water Quality Standards*. Amended as of June 26, 2003 Alaska Department of Environmental Conservation.
- ADEC 2010. *Policy and Procedure Guidance for Interim Antidegradation Implementation Methods*. Alaska Department of Environmental Conservation. July, 2010.
- AOGA 2011. *Economic Impact Reports, 2011 Valdez*. Alaska Oil and Gas Association.
- ADOLWD 2011. *Alaska Local and Regional Information, Gulf Coast, Valdez-Cordova Census Area*. Alaska Department of Labor and Workforce Development, May 2011.
- Baumgartner, D.J. W.E. Frick, and P.J. Roberts 1993. *Dilution Models for Effluent Discharges (Second Edition)*. U.S. EPA Publication No. EPA 600/R-93/139. July 1993.
- Blanchard, A.L., Feder, H.M., and Shaw, D.G. *Final Report, Environmental Studies in Port Valdez, Alaska*. Institute of Marine Science, School of Fisheries and Ocean Sciences, University of Alaska, Fairbanks, June 2011.
- Conner, David 2011. *Valdez Marine Terminal Antidegradation Analysis Technology Evaluation*, August 2011.
- Frick, W.E., P.J.W Roberts, L.R. Davis, J. Keyes, D.J. Baumgartner, and K.P. George 2003. *Dilution Models for Effluent* 03/025, March 2003.