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FISCAL NOTE

Correction of 2/7/96 Version

STATE OF ALASKA

BILL NO.

HB342**1996 LEGISLATIVE SESSION**

Revision Date:

Title: An Act relating to Water Quality

Department Affected:

Environmental
Conservation

Sponsor:

Rep. Rokeberg

BRU:

Environmental Quality

Requestor:

Component: Water Quality**COMPONENT SERIAL NO.**

Expenditures/Revenues:

(Thousands of Dollars)

	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
OPERATING EXPENDITURES						
PERSONAL SERVICES	46.7	0.0	0.0	0.0	0.0	0.0
TRAVEL	2.0	0.0	0.0	0.0	0.0	0.0
CONTRACTUAL	1.9	0.0	0.0	0.0	0.0	0.0
SUPPLIES	0.5	0.0	0.0	0.0	0.0	0.0
EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0
LAND&STRUCTURES	0.0	0.0	0.0	0.0	0.0	0.0
GRANTS,CLAIMS	0.0	0.0	0.0	0.0	0.0	0.0
MISCELLANEOUS	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL OPERATING	51.1	0.0	0.0	0.0	0.0	0.0

CAPITAL EXPENDITURES	0.0	0.0	0.0	0.0	0.0	0.0
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CHANGE IN REVENUES ()	0.0	0.0	0.0	0.0	0.0	0.0
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FUND SOURCE

1002 Federal Receipts	0.0	0.0	0.0	0.0	0.0	0.0
1003 GF Match	0.0	0.0	0.0	0.0	0.0	0.0
1004 GF	51.1	0.0	0.0	0.0	0.0	0.0
1005 GF/Program Receipt	0.0	0.0	0.0	0.0	0.0	0.0
1006 GF/MHTIA	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	51.1	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY96) cost: \$ 0.0**POSITIONS:**

FULL-TIME	0.5	0	0	0	0	0
PART-TIME	0	0	0	0	0	0
TEMPORARY	0	0	0	0	0	0

ANALYSIS: (Attach a separate page if necessary.)

The bill will require the Department to revise the Wastewater Regulations and the Water Quality Standards regulations. It is estimated that this process will take a total of 0.5 FTE of staff time plus expenses for public notice, hearing and mailings

Prepared by: Deena J. Henkins/Len Verrelli, Director

Division: Air & Water QualityPhone: 465-5060Date: 2/21/96Approved by Commissioner: [Signature]Agency: Department of Environmental ConservationDate: 2/22/96**PREPARER TO PROVIDE ALL DISTRIBUTION COPIES TO GOVERNOR'S LEGISLATIVE OFFICE**

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FISCAL NOTE

STATE OF ALASKA
1995 LEGISLATIVE SESSION

BILL NO.

HB342

Revision Date:

Title: An Act relating to Water Quality

Department Affected:

Environmental
Conservation

Sponsor:

Rep. Rokeburg

BRU:

Environmental Quality

Requestor:

Component:

Water Quality

COMPONENT SERIAL NO.

Expenditures/Revenues:

(Thousands of Dollars)

OPERATING EXPENDITURES	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01
PERSONAL SERVICES	0.0	46.7	0.0	0.0	0.0	0.0
TRAVEL	0.0	2.0	0.0	0.0	0.0	0.0
CONTRACTUAL	0.0	1.9	0.0	0.0	0.0	0.0
SUPPLIES	0.0	0.5	0.0	0.0	0.0	0.0
EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0
LAND&STRUCTURES	0.0	0.0	0.0	0.0	0.0	0.0
GRANTS, CLAIMS	0.0	0.0	0.0	0.0	0.0	0.0
MISCELLANEOUS	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL OPERATING	0.0	51.1	0.0	0.0	0.0	0.0

CAPITAL EXPENDITURES	0.0	0.0	0.0	0.0	0.0	0.0
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CHANGE IN REVENUES ()	0.0	0.0	0.0	0.0	0.0	0.0
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FUND SOURCE

1002 Federal Receipts	0.0	0.0	0.0	0.0	0.0	0.0
1003 GF Match	0.0	0.0	0.0	0.0	0.0	0.0
1004 GF	0.0	51.1	0.0	0.0	0.0	0.0
1005 GF/Program Receipt	0.0	0.0	0.0	0.0	0.0	0.0
1006 GF/MHTIA	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY95) cost: \$

0.0

POSITIONS:

FULL-TIME	0	0.5	0	0	0	0
PART-TIME	0	0.0	0	0	0	0
TEMPORARY	0	0.0	0	0	0	0

ANALYSIS: (Attach a separate page if necessary.)

The bill will require the department to revise the Wastewater Regulations and the Water Quality Standards Regulations. It is estimated that this process will take a total of 0.5 FTE of staff time plus expenses for public notice, hearing and mailings.

Prepared by: Deena Henkins

Division: Air & Water Quality

Phone: 465-5312

Date: 2/7/96

Approved by Commissioner:

Agency: Department of Environmental Conservation

Date:

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HB 342
ANALYSIS OF BILL/PROGRAM EFFECTS

CONFUSION OF TERMS

The language of the bill is confusing and difficult to interpret because the author has incorrectly used the terms for water quality criteria, water quality standards and effluent limits. The bill refers to limiting discharge water quality standards when it appears to be referring to effluent limits. The bill would have an indirect effect on state Water Quality Standards since they apply to receiving water quality.

SETTLEABLE SOLIDS vs SUSPENDED SOLIDS

Language in Sec. 46.03.085(a) of the bill would require the use of the settleable solids method of measuring sediment if an effluent limit for sediment was established in a permit. The "volumetric Imhoff Cone method" is a reference to one method for measuring settleable solids.

The passage of HB 342 would not allow suspended solids to be used as a measurement for sediment, and thus would require the Department to revise the definition of "secondary treatment" in the Wastewater Regulations. Typically, the efficiency of sewage treatment processes is defined in terms of BOD (biochemical oxygen demand) and suspended solids, and the definition of secondary treatment in 18 AAC 72.990 references the use of suspended solids. The section in the Wastewater Regulations on Minimum Treatment, 18 AAC 72.040, would also have to be revised because it refers in several places to suspended solids.

Since the bill would only allow the measurement of settleable solids, the language in the Water Quality Standards would have to reflect this limitation. This bill uses the term "sediment"; a recent State Superior Court ruled that the term sediment includes suspended solids. The Department revised the Water Quality Standards in January 1995 to clarify that the existing criteria for sediment is limited to settleable solids, but has also agreed to study the need for a total suspended solids (TSS) criteria. Passage of this bill would prohibit future criteria from being developed for total suspended solids and adopted into the Water Quality Standards. Until the TSS study is completed, the need for TSS criteria is unknown.

The bill's intention to allow measurement of sediment only in terms of settleable solids does not recognize the legitimate application of other measurements of sediment. The efficiency of some treatment processes such as classical sewage treatment are historically described in terms of suspended solids. Any biological treatment process with clarifiers or filters also typically lends itself to being described in terms of suspended solids whether sewage or industrial wastewater is being treated. The Clean Water Act defines secondary treatment in terms of suspended solids, and describes secondary treatment waivers in terms of suspended solids also.

Numerous EPA effluent guideline regulations (i.e. effluent limits) characterize wastewater in terms of suspended solids, like mining wastewater discharges from hardrock gold mines that use froth floatation processes.

In the case of sewage treatment plant discharges or other discharges subject to an EPA effluent limitation incorporating suspended solids, it will not be beneficial to the discharger to forbid the state to impose a suspended solids effluent limit. The federal law and regulations will still apply.

RELATIVE STRICTNESS OF STANDARDS

Subsection (b) of the bill is difficult to interpret because of the incorrect use of terminology. Subsection (b)(2) and (3) appears to say that the Department cannot apply an effluent limit that is more restrictive than federal water quality standards. The language also suggests that the effluent limit can not be more strict than the quality of the intake water, although it may also be interpreted to mean the upstream water or receiving water.

It is unclear what the intent of Sec. 46.03.085(b)(1) is. The term "discharge standard" appears to refer to effluent limits, but it is not clear how the term relates to water quality criteria or standards. Subsection (b)(2) is also confusing since effluent limits do not correlate with exceedence of federal water quality standards. It is possible that an effluent limit might be more strict than the related water quality criteria in order to ensure that criteria in the receiving water will be met.

The state needs the flexibility to require effluent limits more strict than the receiving water quality if the receiving water quality has been degraded by other dischargers and more stringent limits are needed to protect water uses. The existing quality of a water should not be interpreted to represent the desirable quality in all cases.

If the receiving water quality is naturally above applicable water quality criteria, that is another issue entirely. In that case the Department typically will allow a discharge up to natural background.

If the discharger must meet an EPA effluent guideline regulation that requires a more stringent discharge quality than the natural or existing receiving water quality, the Department is very limited in its ability to affect the situation. Changes in the state law proposed by HB 342 will not assist the discharger for this kind of circumstance, since the federal regulation would still apply.

The Department has the flexibility in existing statutes and regulations to deal with situations where the natural quality of the receiving water is above applicable receiving water quality. If the receiving water quality is naturally above applicable water quality criteria, and

EPA is not constrained by an effluent guideline regulation that requires a more stringent discharge quality than the natural receiving water quality, the Department may be able to allow a discharge up to background or the Department may be able to consider writing site specific criteria that will reflect the natural quality.

STATE ASSUMPTION OF N.P.D.E.S. PROGRAM

There has been some interest expressed by the Commissioner's Office at DEC to assume the NPDES permitting program, since it appears the Department could implement the program with more flexibility than the EPA is willing to use. If the language in HB 342 were included in the DEC statutes, the Department would not be able to assume the NPDES program, since it would prohibit application of EPA effluent limitation guidelines for suspended solids effluent limits, as well as effluent limits which may require that a discharge be of higher quality than the receiving water.

STATE OF ALASKA
OFFICE OF THE GOVERNOR

BILL ANALYSIS

DEPARTMENT Environmental Conservation	DIVISION Air & Water Quality	BILL NUMBER HB 342	SPONSOR Rep. Rokeberg
SHORT TITLE OF BILL An Act relating to water quality			
DEPARTMENT POSITION The department opposes the bill because the intent of the proposed language is confusing and difficult to interpret. As written, it would prevent the department from having the ability to clean up polluted waters; it would also prevent state assumption of the federal National Pollutant Discharge Elimination System (NPDES) permit program.			
PREPARED BY Deena Henkin Susan Braley	DATE 2/17/96	COMMISSIONER'S SIGNATURE <i>[Signature]</i>	DATE 2/16/96

SUMMARY

OTHER AGENCIES AFFECTED BY BILL ADF&G ADNR	CONSTITUENT GROUP(S) AFFECTED BY BILL Wastewater dischargers Environmental Groups
ORGANIZATIONAL SUPPORT FOR BILL Unknown	ORGANIZATIONAL OPPOSITION TO BILL Unknown

FISCAL IMPACT: \$51.0 X FISCAL NOTE ATTACHED

BACKGROUND/LEGISLATIVE INTENT

The Bill would not allow stricter wastewater effluent limits than the quality of the water received for the use. It would require the department to write wastewater effluent limits for sediment in terms of settleable solids only; it would not allow effluent limits stricter than federal water quality standards.

ANALYSIS OF BILL/PROGRAM EFFECTS

See attached.

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To <i>Transmont</i>	From
Co. <i>Rep. Rokeberg</i>	Co.
Dept.	Phone #
Fax # 2640	Fax #

AMENDMENTS PROPOSED

None at this time

PLEASE ATTACH SEPARATE SHEET FOR ADDITIONAL COMMENTS OR ANALYSIS

FISCAL NOTE

STATE OF ALASKA
1996 LEGISLATIVE SESSION

BILL NO. HB 342

Revision Date: _____ Dept. Affected: Fish and Game
Title: An Act relating to water. BRU: Habitat and Restoration
Sponsor: Rokeberg Component: Habitat
Requester: House Special Committee Oil & Gas, Resources COMPONENT SERIAL NO. 486

Expenditures/Revenues

(Thousands of Dollars)

OPERATING EXPENDITURES	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02
PERSONAL SERVICES	150.0	150.0	150.0	150.0	150.0	150.0
TRAVEL	15.0	15.0	15.0	15.0	15.0	15.0
CONTRACTUAL	5.0	5.0	5.0	5.0	5.0	5.0
SUPPLIES	5.0	5.0	5.0	5.0	5.0	5.0
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	175.0	175.0	175.0	175.0	175.0	175.0

CAPITAL EXPENDITURES						
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CHANGE IN REVENUES ()						
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FUND SOURCE

(Thousands of Dollars)

1002 Federal Receipts						
1003 GF Match						
1004 GF						
1005 GF/Program Receipts						
1006 GF/MHTIA						
Other						
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

Estimate of any current year (FY96) cost: \$ 0.0

POSITIONS

FULL-TIME	2	2	2	2	2	2
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

Additional expenditures stem from the increased workload that will occur as the department is required to substantially increase the scope, substance, and specificity of its AS 16.05.840, 16.05.870, and 16.20 permit application reviews, and to significantly increase the number of field inspections in lieu of its current reliance on state water quality standards and the Department of Environmental Conservations wastewater discharge permitting program for ensuring adequate water quality and habitat for fish and wildlife

Prepared by: Janet Kowalski
Division: Habitat and Restoration
Approved by Commissioner: Cecilia Bruce for
Agency: Fish and Game

Phone: 465-4105
Date: 10/16/95
Date: 10/16/95

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ALASKA
WATER QUALITY STANDARDS
18 AAC 70



ALASKA
DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

January 4, 1995

This document presents the Alaska Water Quality Standards (18 AAC 70), as amended by revisions that became effective on January 4, 1995.

**Alaska Department of Environmental Conservation
Water Quality Management Section
410 Willoughby Avenue
Juneau, Alaska 99801
Phone: 907-465-5276
FAX: 907-465-5274**

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CHAPTER 70. WATER QUALITY STANDARDS**Section**

- 10. General
- 15. Short-term variance
- 20. Protected water use classes; water quality criteria; water quality standards table
- 22. Human health risk level for carcinogenic substances
- 23. Whole effluent toxicity limit
- 25. Site-specific criteria
- 30. Procedure for applying water quality criteria
- 32. Mixing zones
- 33. Zones of deposit
- 34. Thermal discharges
- 40. (Repealed and consolidated)
- 50. Classification of state waters
- 55. Procedure for reclassification
- 58. (Repealed)
- 60. (Repealed)
- 70. (Repealed and consolidated)
- 80. (Repealed and consolidated)
- 81. (Repealed)
- 82. (Repealed)
- 83. (Repealed)
- 84. (Repealed)
- 85. (Repealed)
- 86. Enforcement discretion
- 90. (Consolidated)
- 100. (Repealed)
- 110. (Repealed)
- 990. Definitions

18 AAC 70.010. GENERAL. (a) No person may conduct an operation that causes or contributes to a violation of the water quality standards set by this chapter.

(b) The water quality standards set by this chapter specify the degree of degradation that may not be exceeded in a water body as a result of human actions. The water quality standards are set by the antidegradation requirement of (c) of this section, and the water quality criteria of 18 AAC 70.020(b), applied in accordance with the remainder of this chapter.

(c) Water with natural characteristics of higher quality than the water quality criteria for the use classes set out in 18 AAC 70.020 must be kept at the existing quality, unless an applicant for a permit issued or certified under 18 AAC 15, an applicant for a short-term variance issued under 18 AAC 70.015, or a petitioner for a reclassification under 18 AAC 70.055 shows to the department's satisfaction that

(1) reducing water quality is justified because of necessary economic or social development;

(2) except as allowed under 18 AAC 70.015, 18 AAC 70.032, or 18 AAC 70.033, reducing water quality will not violate the applicable criteria of 18 AAC 70.020 or 18 AAC 70.025, or otherwise harm present or potential uses of the water; and

(3) all wastes and other substances to be discharged will be treated using the methods found by the department to be most effective.

(d) A person may not discharge or cause the discharge of any waste or substance into a water without first treating and controlling the discharge to ensure that the quality of the receiving water meets the standards set by this chapter.

(e) Repealed 1/7/87.

(f) Except as provided in (g) and (h) of this section, and as specified in an authorization issued under 18 AAC 15, 18 AAC 60, or 18 AAC 72, the water quality standards and limits set by or under this chapter do not apply to

(1) a constructed treatment works that is authorized by the department in a permit, approval, or certification, and that is

(A) not located in either a water of the state or a water of the United States; or

(B) located in a water of the state but not in a water of the United States; or

(2) a treatment works that is a natural pond, that is authorized by the department under 18 AAC 60 or 18 AAC 72 to receive domestic sewage, and that is a water of the state but not a water of the United States.

(g) In addition to meeting the applicable requirements of 18 AAC 15, 18 AAC 60, or 18 AAC 72, an applicant for a department authorization under one of those chapters for a treatment works described in (f) of this section shall provide to the department evidence that reasonably demonstrates that the proposed treatment works will comply with the requirements of this subsection. The burden of proof for demonstrating compliance with the requirements of this subsection rests with the applicant. The department will, in a timely manner, request and review for completeness, information submitted under this subsection. The owner or operator of a treatment works authorized by the department shall ensure that the treatment works meets the following requirements:

(1) the water quality criteria and limits set by or under this chapter must be met in adjacent surface water and groundwater at and beyond the boundary of the treatment works;

(2) the methods of pollution prevention, control, and treatment found by the department to be the most effective and reasonable to meet the requirements of this section must be applied to wastes and other substances discharged to and contained in the treatment works;

(3) the treatment works must be as small as practicable to meet the legitimate project needs; and

(4) the treatment works must be constructed and operated so that it will not present an excessive hazard to wildlife within the boundaries of the treatment works and so that it will comply with all applicable public health and environmental standards enforced by the department; the owner or operator may meet the requirements of this paragraph through the use of lining, fencing or another means of preventing access; pretreatment; or another control measure or combination of measures approved by the department.

(h) The department will, in its discretion, authorize a treatment works in a permit, approval, or certification issued under 18 AAC 15, 18 AAC 60, or 18 AAC 72 only after making a site-specific determination that the treatment works will comply with the requirements of (g) of this section. In determining whether to authorize a treatment works, the department also will consider

(1) geologic, hydrologic, meteorologic, and ecological conditions at the site;

(2) adverse effects on designated uses of a water caused by construction and operation of the treatment works;

(3) alternative locations for a treatment works proposed to be located in a natural water; and

(4) reasonable alternative methods for preventing, controlling, treating, and disposing of the wastes or other substances to be discharged to and contained in the treatment works. (In effect before 7/28/59; am 5/24/70, Register 34; am 8/28/71, Register 39; am 10/22/72, Register 44; am 2/2/79, Register 69; am 12/19/82, Register 84; am 3/30/84, Register 89; am 1/7/87, Register 100; am 1/4/95, Register 133)

Authority: AS 46.03.010
AS 46.03.020
AS 46.03.050
AS 46.03.070
AS 46.03.080
AS 46.03.090
AS 46.03.100
AS 46.03.110
AS 46.03.720

18 AAC 70.015. SHORT-TERM VARIANCE. (a) In its discretion, the department will grant a short-term variance from the antidegradation requirement of 18 AAC 70.010(c) or the water quality criteria of 18 AAC 70.020(b) for a one-time, temporary activity that is a nonpoint source of water pollution, and for a temporary activity associated with the placement of dredged or fill material affecting a specific water body. A short-term variance will be granted only if an applicant shows to the department's satisfaction that

(1) wastes or substances that might adversely affect water quality are controlled, using methods found by the department to be most effective;

(2) the activity will be conducted in a manner to mitigate water quality impacts, using methods found by the department to be most effective; and

(3) the activity, when completed, will not cause a long-term, chronic, or recurring violation of the water quality standards.

(b) The department will, in its discretion, grant a short-term variance by geographic area or project, or for a specific, individual event. The term of a variance will be as short as practicable, and will, at the latest, expire upon completion of the project.

(c) A person seeking a short-term variance shall submit a written request and proceed in accordance with 18 AAC 15.020 - 18 AAC 15.100. The request must state the location, time, duration, and type of activity for which the variance is sought; reasons why the activity is required; the areal extent and quantified degree of variance from the applicable criteria; detailed construction and operating plans, including water pollution control and mitigation measures; and an estimate of the activity's impact on the uses of the water involved, including recreation and use for habitat, rearing, growth, or migration by fish, shellfish, other aquatic life, and wildlife. In its discretion, the department will treat an application for a permit under Sec. 404 of the Clean Water Act as an application for a short-term variance. (Eff. 2/2/79, Register 69; am 4/23/79, Register 70; am 9/19/79, Register 71; am 1/7/87, Register 100)

Authority: AS 46.03.010
AS 46.03.070
AS 46.03.080

18 AAC 70.020. PROTECTED WATER USE CLASSES; WATER QUALITY CRITERIA; AND WATER QUALITY STANDARDS TABLE. (a) Classes of use of the state's water protected by criteria set out under (b) of this section are

(1) Fresh water

(A) Water supply

(i) drinking, culinary, and food processing,

(ii) agriculture, including irrigation and stock watering,

(iii) aquaculture,

(iv) industrial;

(B) Water recreation

(i) contact recreation,

(ii) secondary recreation;

(C) Growth and propagation of fish, shellfish, other aquatic life, and wildlife; and

(2) Marine water

(A) Water supply

(i) aquaculture,

(ii) seafood processing,

(iii) industrial;

(B) Water recreation

(i) contact recreation,

(ii) secondary recreation;

(C) Growth and propagation of fish, shellfish, other aquatic life, and wildlife; and

(D) Harvesting for consumption of raw mollusks or other raw aquatic life.

(b) Except as modified by or under 18 AAC 70.025 or 18 AAC 70.034, the water quality criteria set out in the following table, in combination with the classes of water use set out in the following table, constitute the water quality standards for a particular waterbody; the water quality standards regulate human activities that result in alterations to waters within the state's jurisdiction:

(1) FRESH WATER USES	FECAL COLIFORM BACTERIA (FC) (See Note 1)	DISSOLVED GAS
(A) Water Supply (i) drinking, culinary, and food processing	Based on a minimum of 5 samples taken in a 30-day period, the mean may not exceed 20 FC/100 ml, and not more than 10% of the samples may exceed 40 FC/100 ml. For groundwater, the FC concentration must be less than 1 FC/100 ml, using the fecal coliform Membrane Filter Technique, or less than 3 FC/100 ml, using the fecal coliform most probable number (MPN) technique.	Dissolved oxygen (D.O.) must be greater than or equal to 4 mg/l (this does not apply to lakes or reservoirs in which supplies are taken from below the thermocline, or to groundwater).
(A) Water Supply (ii) agriculture, including irrigation and stock watering	For products normally cooked and for dairy sanitation of pasteurized products, the mean, based on a minimum of 5 samples taken in a 30-day period, may not exceed 200 FC/100 ml, and not more than 10% of the samples may exceed 400 FC/100 ml. For products not normally cooked and for dairy sanitation of unpasteurized products, the criteria for drinking water supply, (1)(A)(i), apply.	D.O. must be greater than 3 mg/l in surface waters.
(A) Water Supply (iii) aquaculture	For products normally cooked, the mean, based on a minimum of 5 samples taken in a 30-day period, may not exceed 200 FC/100 ml, and not more than 10% of the samples may exceed 400 FC/100 ml. For products not normally cooked, the criteria for drinking water supply, (1)(A)(i), apply.	D.O. must be greater than 7 mg/l in surface waters. The concentration of D.O. may not exceed 110% of saturation at any point of sample collection.
(A) Water Supply (iv) industrial	Where worker contact is present, the mean, based upon a minimum of 5 samples taken in a 30-day period, may not exceed 200 FC/100 ml, and not more than 10% of the samples may exceed 400 FC/100 ml.	May not cause detrimental effects on established water supply treatment levels.
(B) Water Recreation (i) contact recreation	Based on a minimum of 5 samples taken in a 30-day period, the mean may not exceed 100 FC/100 ml, and not more than one sample, or more than 10% of the samples if there are more than 10 samples, may exceed 200 FC/100 ml.	D.O. must be greater than or equal to 4 mg/l.
(B) Water Recreation (ii) secondary recreation	Based on a minimum of 5 samples taken in a 30-day period, the mean may not exceed 200 FC/100 ml, and not more than 10% of the total samples may exceed 400 FC/100 ml.	Same as (1)(B)(i).
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	Not applicable.	D.O. must be greater than 7 mg/l in waters used by anadromous and resident fish. In no case may D.O. be less than 5 mg/l to a depth of 20 cm in the interstitial waters of gravel used by anadromous or resident fish for spawning (See Note 2). For waters not used by anadromous or resident fish, D.O. must be greater than or equal to 5 mg/l. In no case may D.O. be greater than 17 mg/l. The concentration of D.O. may not exceed 110% of saturation at any point of sample collection.

(1) FRESH WATER USES	PH (Variation of pH for waters naturally outside the specified range must be toward the range)	TURBIDITY (not applicable to groundwater)
(A) Water Supply (i) drinking, culinary, and food processing	May not be less than 6.0 or greater than 8.5. May not vary more than 0.5 pH unit from natural conditions.	May not exceed 5 nephelometric turbidity units (NTU) above natural conditions when the natural turbidity is 50 NTU or less, and may not have more than 10% increase in turbidity when the natural turbidity is more than 50 NTU, not to exceed a maximum increase of 25 NTU.
(A) Water Supply (ii) agriculture, including irrigation and stock watering	May not be less than 5.0 or greater than 9.0; for dairy sanitation, pH may not be less than 6.8 or greater than 8.5.	May not cause detrimental effects on indicated use.
(A) Water Supply (iii) aquaculture	May not be less than 6.5 or greater than 8.5. May not vary more than 0.5 pH unit from natural conditions.	May not exceed 25 NTU above natural conditions. For all lake waters, may not exceed 5 NTU above natural conditions.
(A) Water Supply (iv) industrial	May not be less than 5.0 or greater than 9.0.	May not cause detrimental effects on established water supply treatment levels.
(B) Water Recreation (i) contact recreation	May not be less than 6.5 or greater than 8.5. May not vary more than 0.5 pH unit from natural conditions. If the natural condition pH is outside this range, substances may not be added that cause an increase in the buffering capacity of the water.	May not exceed 5 NTU above natural conditions when the natural turbidity is 50 NTU or less, and may not have more than 10% increase in turbidity when the natural turbidity is more than 50 NTU, not to exceed a maximum increase of 15 NTU. May not exceed 5 NTU above natural turbidity for all lake waters.
(B) Water Recreation (ii) secondary recreation	Same as (1)(A)(iv).	May not exceed 10 NTU above natural conditions when natural turbidity is 50 NTU or less, and may not have more than 20% increase in turbidity when the natural turbidity is greater than 50 NTU, not to exceed a maximum increase of 15 NTU. For all lake waters, turbidity may not exceed 5 NTU above natural turbidity.
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	May not be less than 6.5 or greater than 9.0. May not vary more than 0.5 pH unit from natural conditions.	Same as (1)(A)(iii).

(1) FRESH WATER USES	TEMPERATURE	DISSOLVED INORGANIC SUBSTANCES
(A) Water Supply (i) drinking, culinary, and food processing	May not exceed 15°C.	Total Dissolved Solids (TDS) from all sources may not exceed 500 mg/l. Neither chlorides nor sulfates may exceed 200 mg/l.
(A) Water Supply (ii) agriculture, including irrigation and stock watering	May not exceed 30°C.	TDS may not exceed 1,000 mg/l. Sodium absorption ratio must be less than 2.5, sodium percentage less than 60%, residual carbonate less than 1.25 mg/l, and boron less than 0.3 mg/l. (See Note 6).
(A) Water Supply (iii) aquaculture	May not exceed 20°C at any time. The following maximum temperatures may not be exceeded, where applicable: Migration routes 15°C Spawning areas 13°C Rearing areas 15°C Egg & fry incubation 13°C For all other waters, the weekly average temperature may not exceed site-specific requirements needed to preserve normal species diversity or to prevent appearance of nuisance organisms.	TDS may not exceed 1,500 mg/l, including natural conditions. Increase in TDS may not exceed one-third of the concentration of the natural condition of the waterbody.
(A) Water Supply (iv) industrial	May not exceed 25°C.	No amounts above natural conditions that can cause corrosion, scaling, or process problems.
(B) Water Recreation (i) contact recreation	Same as (1)(A)(ii).	Not applicable.
(B) Water Recreation (ii) secondary recreation	Not applicable.	Not applicable.
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	Same as (1)(A)(iii).	Same as (1)(A)(iii).

(1) FRESH WATER USES	SEDIMENT (Not applicable to groundwater)	TOXIC AND OTHER DELETERIOUS ORGANIC AND INORGANIC SUBSTANCES
(A) Water Supply (i) drinking, culinary, and food processing	No measurable increase in concentration of settleable solids above natural conditions, as measured by the volumetric Imhoff cone method (See Note 15).	Substances may not exceed Alaska Drinking Water Standards (18 AAC 80) or, where those standards do not exist, EPA <i>Quality Criteria for Water</i> (See Note 5).
(A) Water Supply (ii) agriculture, including irrigation and stock watering	For sprinkler irrigation, water must be free of particles of 0.074 mm or coarser. For irrigation or water spreading, may not exceed 200 mg/l for an extended period of time.	Same as (1)(A)(i) where contact with a product destined for human consumption is present. Same as (1)(C) or Federal Water Pollution Control Administration, <i>Water Quality Criteria (WQC/FWPCA)</i> , as applicable to substances for stockwaters; concentrations for irrigation waters may not exceed <i>WQC/FWPCA</i> or <i>WQC 1972</i> (See Notes 6 and 7).
(A) Water Supply (iii) aquaculture	No imposed loads that will interfere with established water supply treatment levels.	Same as (1)(C).
(A) Water Supply (iv) industrial	Same as (1)(A)(iii).	Substances that pose hazards to worker contact may not be present.
(B) Water Recreation (i) contact recreation	Same as (1)(A)(i).	Same as (1)(A)(i).
(B) Water Recreation (ii) secondary recreation	May not pose hazards to incidental human contact or cause interference with the use.	Substances that pose hazards to incidental human contact may not be present.
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	The percent accumulation of fine sediment in the range of 0.1 mm to 4.0 mm in the gravel bed of waters used by anadromous or resident fish for spawning may not be increased more than 5% by weight above natural conditions (as shown from grain size accumulation graph). In no case may the 0.1 mm to 4.0 mm fine sediment range in those gravel beds exceed a maximum of 30% by weight (as shown from grain size accumulation graph). (See Notes 3 and 4). In all other surface waters no sediment loads (suspended or deposited) that can cause adverse effects on aquatic animal or plant life, their reproduction or habitat may be present.	Individual substances may not exceed criteria in EPA, <i>Quality Criteria for Water</i> (See Note 5) or, if those criteria do not exist, may not exceed the Primary Maximum Contaminant Levels of the Alaska Drinking Water Standards (18 AAC 80). If those criteria are absent, or if the department finds that the criteria are not appropriate for sensitive resident Alaskan species, the department will, in its discretion, establish in regulation chronic and acute criteria to protect sensitive and biologically important life stages of resident Alaskan species, using methods approved by EPA or alternate methods approved by the department. There may be no concentrations of toxic substances in water or in shoreline or bottom sediments, that, singly or in combination, cause, or reasonably can be expected to cause, toxic effects on aquatic life, except as authorized by this chapter. Substances may not be present in concentrations that individually or in combination impart undesirable odor or taste to fish or other aquatic organisms, as determined by either bioassay or organoleptic tests (See Note 5).

(1) FRESH WATER USES	COLOR (See Note 11)	PETROLEUM HYDROCARBONS, OILS AND GREASE
(A) Water Supply (i) drinking, culinary, and food processing	May not exceed 15 color units or the natural condition, whichever is greater.	May not cause a visible sheen upon the surface of the water. May not exceed concentrations that individually or in combination impart odor or taste as determined by organoleptic tests.
(A) Water Supply (ii) agriculture, including irrigation and stock watering	Not applicable.	May not cause a visible sheen upon the surface of the water.
(A) Water Supply (iii) aquaculture	May not exceed 50 color units or the natural condition, whichever is greater.	Total aqueous hydrocarbons (TAqH) in the water column may not exceed 15 $\mu\text{g/l}$ (See Note 8). Total aromatic hydrocarbons (TAH) in the water column may not exceed 10 $\mu\text{g/l}$ (See Note 8). There may be no concentrations of petroleum hydrocarbons, animal fats, or vegetable oils in shoreline or bottom sediments that cause deleterious effects to aquatic life. Surface waters and adjoining shorelines must be virtually free from floating oil, film, sheen, or discoloration.
(A) Water Supply (iv) industrial	May not cause detrimental effects on established water supply treatment levels.	May not make the water unfit or unsafe for the use.
(B) Water Recreation (i) contact recreation	Same as (1)(A)(i).	May not cause a film, sheen, or discoloration on the surface or floor of the waterbody or adjoining shorelines. Surface waters must be virtually free from floating oils.
(B) Water Recreation (ii) secondary recreation	May not interfere with or make the water unfit or unsafe for the use.	Same as (1)(B)(i).
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	Color or apparent color may not reduce the depth of the compensation point for photosynthetic activity by more than 10% from the seasonally established norm for aquatic life. For all waters without a seasonally established norm for aquatic life, color or apparent color may not exceed 50 color units or the natural condition, whichever is greater.	Same as (1)(A)(iii).

(1) FRESH WATER USE	RADIOACTIVITY	TOTAL RESIDUAL CHLORINE
(A) Water Supply (i) drinking, culinary, and food processing	May not exceed the concentrations specified in the Alaska Drinking Water Standards (18 AAC 80) and may not exceed limits specified in 10 C.F.R. 20 (See Note 12) and National Bureau of Standards, Handbook 69 (See Note 13).	Not applicable.
(A) Water Supply (ii) agriculture, including irrigation and stock watering	Same as (1)(A)(i).	Not applicable.
(A) Water Supply (iii) aquaculture	Same as (1)(A)(i) except that concentration factors for organisms involved may not exceed maximum permissible limits for specific radioisotopes and unidentified mixtures as established by 10 C.F.R. 20 (See Note 12) and National Bureau of Standards, Handbook 69 (See Note 13).	May not exceed 2.0 $\mu\text{g/l}$ for salmonid fish or 10.0 $\mu\text{g/l}$ for other organisms.
(A) Water Supply (iv) industrial	Same as (1)(A)(i).	Not applicable.
(B) Water Recreation (i) contact recreation	Same as (1)(A)(i).	Not applicable.
(B) Water Recreation (ii) secondary recreation	Same as (1)(A)(i).	Not applicable.
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	Same as (1)(A)(iii).	Same as (1)(A)(iii).

(1) FRESH WATER USES	RESIDUES Floating Solids, Debris, Sludge, Deposits, Foam, Scum, or Other Residues (not applicable to groundwater)
(A) Water Supply (i) drinking, culinary, and food processing	May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use, cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines, cause leaching of toxic or deleterious substances, or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.
(A) Water Supply (ii) agriculture, including irrigation and stock watering	May not be present in quantities to cause soil plugging or reduced crop yield, or to make the water unfit or unsafe for the use.
(A) Water Supply (iii) aquaculture	May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use.
(A) Water Supply (iv) industrial	Same as (1)(A)(iii).
(B) Water Recreation (i) contact recreation	Same as (1)(A)(i).
(B) Water Recreation (ii) secondary recreation	Same as (1)(A)(i).
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use, or cause acute or chronic problem levels as determined by bioassay or other appropriate methods. May not, alone or in combination with other substances, cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines, or cause leaching of toxic or deleterious substances, or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.

(2) MARINE WATER USES	FECAL COLIFORM BACTERIA (FC) (See Note 1)	DISSOLVED GAS
(A) Water Supply (i) aquaculture	For products normally cooked, the mean, based on a minimum of 5 samples taken in a 30-day period, may not exceed 200 FC/100 ml, and not more than 10% of the samples may exceed 400 FC/100 ml. For products not normally cooked, the mean, based on a minimum of 5 samples taken in a 30-day period may not exceed 20 FC/100 ml, and not more than 10% of the samples may exceed 40 FC/100 ml.	Surface dissolved oxygen (D.O.) concentration in coastal water may not be less than 6.0 mg/l for a depth of one meter except when natural conditions cause this value to be depressed. D.O. may not be reduced below 4 mg/l at any point beneath the surface. D.O. concentrations in estuaries and tidal tributaries may not be less than 5.0 mg/l except where natural conditions cause this value to be depressed. In no case may D.O. levels exceed 17 mg/l. The concentration of D.O. may not exceed 110% of saturation at any point of sample collection.
(A) Water Supply (ii) seafood processing	Based on a minimum of 5 samples taken in a 30-day period, the mean may not exceed 20 FC/100 ml, and not more than 10% of the samples may exceed 40 FC/100 ml.	D.O. must be greater than or equal to 5 mg/l.
(A) Water Supply (iii) industrial	Where worker contact is present, the mean, based on a minimum of 5 samples taken in a 30-day period, may not exceed 200 FC/100 ml, and not more than 10% of the samples may exceed 400 FC/100 ml.	Not applicable.
(B) Water Recreation (i) contact recreation	Based on a minimum of 5 samples taken in a 30-day period, the mean may not exceed 100 FC/100 ml, and not more than one sample, or more than 10% of the samples if there are more than 10 samples, may exceed 200 FC/100 ml.	Same as (2)(A)(i).
(B) Water Recreation (ii) secondary recreation	Based on a minimum of 5 samples taken in a 30-day period, the mean may not exceed 200 FC/100 ml, and not more than 10% of the samples may exceed 400 FC/100 ml.	Same as (2)(A)(i).
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	Not applicable.	Same as (2)(A)(i).
(D) Harvesting for Consumption of Raw Mollusks or Other Raw Aquatic Life	Based on a 5-tube decimal dilution test, the fecal coliform median MPN may not exceed 14 FC/100 ml, and not more than 10% of the samples may exceed a fecal coliform median MPN of 43 FC/100 ml (See Note 14).	Same as (2)(A)(i).

(2) MARINE WATER USES	pH (Variation of pH for waters naturally outside the specified range must be toward the range)	TURBIDITY
(A) Water Supply (i) aquaculture	May not be less than 6.5 or greater than 8.5, and may not vary more than 0.1 pH unit from natural conditions.	May not exceed 25 nephelometric turbidity units (NTU).
(A) Water Supply (ii) seafood processing	May not be less than 6.0 or greater than 8.5, and may not vary more than 0.5 pH unit from natural conditions.	May not interfere with disinfection.
(A) Water Supply (iii) industrial	May not be less than 5.0 or greater than 9.0.	May not cause detrimental effects on established levels of water supply treatment.
(B) Water Recreation (i) contact recreation	May not be less than 6.5 or greater than 8.5. If the natural pH condition is outside this range, substances may not be added that cause any increase in buffering capacity of the water.	Same as (2)(A)(i).
(B) Water Recreation (ii) secondary recreation	Same as (2)(A)(iii).	Same as (2)(A)(i).
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	Same as (2)(A)(i).	May not reduce the depth of the compensation point for photosynthetic activity by more than 10%. May not reduce the maximum secchi disk depth by more than 10%.
(D) Harvesting for Consumption of Raw Mollusks or Other Raw Aquatic Life	Same as (2)(A)(ii).	Same as (2)(C).

(2) MARINE WATER USES	TEMPERATURE	DISSOLVED INORGANIC SUBSTANCES								
(A) Water Supply (i) aquaculture	May not cause the weekly average temperature to increase more than 1°C. The maximum rate of change may not exceed 0.5°C per hour. Normal daily temperature cycles may not be altered in amplitude or frequency.	A human-induced alteration may not cause a change in the water's isohaline patterns of more than ± 10% of the natural variations.								
(A) Water Supply (ii) seafood processing	May not exceed 15°C.	Not applicable.								
(A) Water Supply (iii) industrial	May not exceed 25°C.	No amounts above natural conditions that can cause corrosion, scaling, or process problems.								
(B) Water Recreation (i) contact recreation	Not applicable.	Not applicable.								
(B) Water Recreation (ii) secondary recreation	Not applicable.	Not applicable.								
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life and Wildlife	Same as (2)(A)(i).	Maximum allowable variation above natural salinity: <table><tr><td>Natural Salinity*</td><td>Human-Induced Salinity*</td></tr><tr><td>00.0 to 03.5</td><td>1</td></tr><tr><td>Greater than 03.5 to 13.5</td><td>2</td></tr><tr><td>Greater than 13.5 to 35.0</td><td>4</td></tr></table> * parts per thousand	Natural Salinity*	Human-Induced Salinity*	00.0 to 03.5	1	Greater than 03.5 to 13.5	2	Greater than 13.5 to 35.0	4
Natural Salinity*	Human-Induced Salinity*									
00.0 to 03.5	1									
Greater than 03.5 to 13.5	2									
Greater than 13.5 to 35.0	4									
(D) Harvesting for Consumption of Raw Mollusks or Other Raw Aquatic Life	Same as (2)(A)(i).	Same as (2)(A)(i) or (2)(C), whichever is more stringent.								

(2) MARINE WATER USES	SEDIMENT	TOXICS AND OTHER DELETERIOUS ORGANIC AND INORGANIC SUBSTANCES
(A) Water Supply (i) aquaculture	No imposed loads that will interfere with established water supply treatment levels.	Same as (2)(C).
(A) Water Supply (ii) seafood processing	Below normally detectable amounts.	Individual substances may not exceed criteria in EPA, <i>Quality Criteria for Water</i> (See Note 5) as applicable to the substance.
(A) Water Supply (iii) industrial	Same as (2)(A)(i).	Substances that pose hazards to worker contact may not be present.
(B) Water Recreation (i) contact recreation	No measurable increase in concentration of settleable solids above natural conditions, as measured by the volumetric Imhoff cone method (See Note 15).	Same as (2)(A)(ii).
(B) Water Recreation (ii) secondary recreation	May not pose hazards to incidental human contact or cause interference with the use.	Substances that pose hazards to incidental human contact may not be present.
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	Same as (2)(B)(i).	Individual substances may not exceed criteria in EPA, <i>Quality Criteria for Water</i> (See Note 5) or, if those criteria do not exist, may not exceed the Primary Maximum Contaminant Levels of the Alaska Drinking Water Standards (18 AAC 80). If those criteria are absent, or if the department finds that the criteria are not appropriate for sensitive resident Alaskan species, the department will, in its discretion, establish in regulation chronic and acute criteria to protect sensitive and biologically important life stages of resident Alaskan species, using methods approved by EPA or alternate methods approved by the department. There may be no concentrations of toxic substances in water or in shoreline or bottom sediments, that, singly or in combination, cause, or reasonably can be expected to cause, toxic effects on aquatic life, except as authorized by this chapter. Substances may not be present in concentrations that individually or in combination impart undesirable odor or taste to fish or other aquatic organisms, as determined by either bioassay or organoleptic tests (See Note 5).
(D) Harvesting for Consumption of Raw Mollusks or Other Raw Aquatic Life	Not applicable.	Same as (2)(C).

(2) MARINE WATER USES	COLOR (See Note 11)	PETROLEUM HYDROCARBONS, OILS AND GREASE
(A) Water Supply (i) aquaculture	May not exceed 50 color units or the natural condition, whichever is greater.	Total aqueous hydrocarbons (TAQH) in the water column may not exceed 15 $\mu\text{g/l}$ (See Note 8). Total aromatic hydrocarbons (TAH) in the water column may not exceed 10 $\mu\text{g/l}$ (See Note 8). There may be no concentrations of petroleum hydrocarbons, animal fats, or vegetable oils in shoreline or bottom sediments that cause deleterious effects to aquatic life. Surface waters and adjoining shorelines must be virtually free from floating oil, film, sheen, or discoloration.
(A) Water Supply (ii) seafood processing	May not exceed 15 color units or the natural condition, whichever is greater.	May not cause a film, sheen, or discoloration on the surface or floor of the waterbody or adjoining shorelines. Surface waters must be virtually free from floating oils. May not exceed concentrations that individually or in combination impart odor or taste as determined by organoleptic tests.
(A) Water Supply (iii) industrial	Not applicable.	May not make the water unfit or unsafe for the use.
(B) Water Recreation (i) contact recreation	Same as (2)(A)(ii).	May not cause a film, sheen, or discoloration on the surface or floor of the waterbody or adjoining shorelines. Surface waters must be virtually free from floating oils.
(B) Water Recreation (ii) secondary recreation	Surface waters must be free of substances that produce objectionable color.	Same as (2)(B)(i).
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	Color or apparent color may not reduce the depth of the compensation point for photosynthetic activity by more than 10% from the seasonally established norm for aquatic life. For all waters without a seasonally established norm for aquatic life, color or apparent color may not exceed 50 color units or the natural condition, whichever is greater.	Same as (2)(A)(i).
(D) Harvesting for Consumption of Raw Mollusks or Other Raw Aquatic Life	Same as (2)(C).	May not exceed concentrations that individually or in combination impart undesirable odor or taste to organisms as determined by bioassay or organoleptic tests.

(2) MARINE WATER USES	RADIOACTIVITY	TOTAL RESIDUAL CHLORINE
(A) Water Supply (i) aquaculture	May not exceed the concentrations specified in the Alaska Drinking Water Standards (18 AAC 80). Concentration factors for organisms involved may not exceed maximum permissible limits for specific radioisotopes and unidentified mixtures as established in 10 C.F.R. 20 (See Note 12) and National Bureau of Standards, Handbook 69 (See Note 13).	Concentrations may not exceed 2.0 $\mu\text{g/l}$ for salmonid fish, or 10.0 $\mu\text{g/l}$ for other organisms.
(A) Water Supply (ii) seafood processing	May not exceed the concentrations specified in the Alaska Drinking Water Standards (18 AAC 80) and may not exceed limits specified in 10 C.F.R. 20 (See Note 12) or National Bureau of Standards, Handbook 69 (See Note 13).	Not applicable.
(A) Water Supply (iii) industrial	Same as (2)(A)(ii).	Not applicable.
(B) Water Recreation (i) contact recreation	Same as (2)(A)(ii).	Not applicable.
(B) Water Recreation (ii) secondary recreation	Same as (2)(A)(ii).	Not applicable.
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	Same as (2)(A)(i).	Same as (2)(A)(i).
(D) Harvesting for Consumption of Raw Mollusks or Other Raw Aquatic Life	Same as (2)(A)(i).	May not exceed 1 mg/l at any time.

(2) MARINE WATER USES	RESIDUES Floating Solids, Debris, Sludge, Deposits, Foam, Scum, or Other Residues
(A) Water Supply (i) aquaculture	May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use. May not cause detrimental effects on established water supply treatment levels.
(A) Water Supply (ii) seafood processing	May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use; cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.
(A) Water Supply (iii) industrial	May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use.
(B) Water Recreation (i) contact recreation	Same as (2)(A)(ii).
(B) Water Recreation (ii) secondary recreation	Same as (2)(A)(ii).
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	May not, alone or in combination with other substances or wastes, make the water unfit or unsafe for the use, or cause acute or chronic problem levels as determined by bioassay or other appropriate methods. May not, alone or in combination with other substances, cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.
(D) Harvesting for Consumption of Raw Mollusks or Other Raw Aquatic Life	May not make the water unfit or unsafe for the use; cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.

Notes:

1. Wherever cited in this section, fecal coliform bacteria must be determined by the membrane filter technique or most probable number procedure according to *Standard Methods for the Examination of Water and Wastewater*, 18th edition, 1992 (see (c)(1) of this section) or in accordance with other standards approved by the department and the United States Environmental Protection Agency (EPA).
2. Wherever cited in this chapter, dissolved oxygen (DO) concentrations in interstitial waters of gravel beds will be measured using the technique found in *Variations in the Dissolved Oxygen Content of Intragravel Water in Four Spawning Streams of Southeastern Alaska*, Special Scientific Report - Fisheries No. 402, February 1962, by William J. McNeil, available from the U.S. Department of the Interior. See Note 16.
3. Wherever cited in this chapter, fine sediments must be sampled by the method described in *An Improved Technique for Freeze Sampling Streambed Sediments*, USDA Forest Service Research Note PNW-281, October 1976, by William J. Walkotten, available from the USDA Forest Service Pacific Northwest Forest and Range Experiment Station, P.O. Box 909, Juneau, AK 99802, or by the technique found in *Success of Pink Salmon Spawning Relative to Size of Spawning Bed Materials*, Special Scientific Report Fisheries No. 469, January 1964, by William J. McNeil and W.H. Ahnell, pages 1 through 3, available from the U.S. Fish and Wildlife Service. See Note 16.
4. Wherever cited in this chapter, percent accumulation of fine sediments will be measured by the technique found in the *Manual on Test Sieving Methods, Guidelines for Establishing Sieve Analysis Procedures*, STP 447A, 1972 edition, available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103. See Note 16.
5. The term "EPA Quality Criteria for Water" includes Quality Criteria for Water, July 1976, U.S. Environmental Protection Agency, Washington, D.C. 20460, U.S. Government Printing Office: 1977 0-222-904, the Ambient Water Quality Criteria for the 64 toxic pollutants listed in the Federal Register, Vol. 45, No. 231, pg. 79318, November 1980, the Ambient Water Quality Criteria Document for 2, 3, 7, 8-tetrachlorodibenzopdioxin (TCDD) listed in the Federal Register, Vol. 49, No. 32, pg. 5831, February 1984, and the final ambient water quality criteria documents listed in the Federal Register, Vol. 50, No. 145, pg. 30784, July 1985. These documents may be seen at the central office of the department or may be purchased through the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161.
6. The Report of the Committee on Water Quality Criteria, Federal Water Pollution Control Administration, Washington, D.C., April 1, 1968, available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. See Note 16.

7. Water Quality Criteria 1972, Environmental Studies Board of the National Academy of Sciences and the National Academy of Engineering, Washington, D.C., 1972, EPA-R3-73-033, March 1973, is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20204 (Stock No. 5501-00520). See Note 16.

8. Total aromatic hydrocarbons (TAH) and total aqueous hydrocarbons (TAqH) must be determined using the following sampling procedures and the individual analyte and group method detection limits (MDLs) and performance standards:

a. For purposes of complying with this chapter, before sample collection, a quality assurance project plan that meets the following requirements shall be submitted for department approval:

(i) *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans*, EPA QAMS-005/80, December 29, 1980; and

(ii) guidelines in the department's *Guidance on Preparation of Laboratory Quality Assurance Plans*, dated February 14, 1991.

b. TAH and TAqH concentrations in marine and fresh waters must be determined from samples taken below the surface. Methods for collection of water samples must assure that the samples are free from hydrocarbon contamination from exogenous sources. Determination of TAH and TAqH in wastewater effluent must employ methods for sampling, preservation, transport, and storage approved by the department to minimize losses of hydrocarbons through volatilization and light and bacterial degradation. The quality of data must be determined through the data validation process specified in the EPA *Draft National Functional Guidelines for Organic Data Review*, revised, June 1991.

c. *Interim Guidelines and Specifications for Preparing QA Project Plans* and *Draft National Functional Guidelines for Organic Data Review* referred to in (a) and (b) of this note are available from the Office of Monitoring Systems and Quality Assurance, Office of Research and Development, United States Environmental Protection Agency, Washington, D.C. 20460; the department's quality assurance guidelines, referred to in (a) of this note, may be obtained from any regional office of the department.

d. MDLs for individual monoaromatic or polynuclear aromatic hydrocarbon (PAH) analytes must be determined using procedures described in Appendix B, 40 C.F.R. 136, as amended through November 29, 1994. A group MDL may not exceed that of the constituent analyte having the highest MDL. A group MDL typically is determined as the geometric mean of the MDLs of the constituent analytes, weighted according to the analyte's relative contribution to the group.

e. TAH and TAqH must be measured as follows:

(i) For measuring compliance against the 10 µg/liter TAH criterion, the following volatile monoaromatic hydrocarbon compounds (commonly called BETX), Group I, must be analyzed and the concentrations summed: benzene, ethylbenzene, toluene, and the xylene isomers; the individual MDLs and required minimum reporting limits for BETX compounds may not exceed 0.2 µg/liter for the listed compounds; precision must be within the range +/- 30 percent; and recovery must be within the range of 60 to 130 percent;

(ii) For measuring compliance against the 15 µg/liter TAqH criterion, except as required under (e)(iii) of this note, the following aromatic groups must be analyzed and their concentrations summed:

A. Group I -- Volatile monoaromatic hydrocarbons, including benzene, ethylbenzene, toluene, and the xylene isomers (BETX), as measured under (e)(i) of this note; and

B. Group II -- Polynuclear aromatic hydrocarbons (PAHs), including, at a minimum, the following compounds:

Naphthalene; 1-methylnaphthalene; 2-methylnaphthalene; 2,6-dimethylnaphthalene; 2,3,5-trimethylnaphthalene; other C-2 and C-3 naphthalenes (estimated by using response factors of isomers with available standards); dibenzothiophene; biphenyl; fluorene; phenanthrene; 1-methylphenanthrene; anthracene; fluoranthene; acenaphthene; pyrene; benzo-a-anthracene; acenaphthylene; chrysene; benzo-e-pyrene; benzo-a-pyrene; dibenzo-a,h-anthracene; benzo-b-fluoranthene; benzo-k-fluoranthene; indeno-123-cd-pyrene; dibenzo a,h-anthracene; and benzo-g,h,i-perylene;

(iii) Where petroleum source identification is a major objective of sampling, such as when related to an oil spill, or when the sum of Group I BETX concentrations and Group II PAH concentrations approaches the 15 µg/liter criterion for TAqH, the department will, in its discretion, require that some or all isomers of the following additional PAH alkyl homologues (Group III) be analyzed for determination against the TAqH criterion:

C-4 naphthalenes; C-1, C-2, and C-3 fluorenes; C-1, C-2, and C-3 dibenzothiophenes; C-1, C-2, and C-3 phenanthrenes/anthracenes; C-1 fluoranthenes/pyrenes; C-1, C-2, C-3, and C-4 chrysenes;

(iv) For a one-liter sample extraction, the MDL for Group II and Group III PAH compounds may not exceed 0.10 µg/liter for each analyte, unless alternative analyte-specific MDLs are conclusively justified in writing to, and approved by, the department; the required reporting or quantitation limits for the Group II and Group III compounds may not exceed 0.20 µg/liter; larger volume samples may be extracted to achieve the 0.10 and 0.20 µg/liter MDL and minimum reporting limits, respectively, for each analyte; if Group III PAHs are required to be analyzed, representative isomers within each identified analyte group (C-1 chrysene, C-2 chrysene, etc.) may be used to determine MDLs for the other members within that group; for Group III compounds that do not have standards, values may be estimated using response factors of the most similar standard.

f. Any approved and published chromatographic method or combination of methods that measures the listed compounds and meets the performance standards specified above, is acceptable for determination of TAH and TAqH. Performance standards equal to or exceeding those of Methods 602 and 610, 40 C.F.R. 136, Appendix A, as amended through November 29, 1994, must be met for those target BETX and PAH compounds listed in Methods 602 and 610. Modifications to other promulgated EPA Gas Chromatography/Mass Spectrometry (GC/MS) or High Pressure Liquid Chromatography (HPLC) methods for analysis of PAHs will, in the department's discretion, be permitted for PAHs if the performance standards and MDLs specified in Method 610 are met. For compounds in Group I, Group II, and Group III that are not listed in Methods 602 and 610, methods used must have standard recoveries for spikes of target analytes and surrogates within the range of 60 to 130 percent. The precision of laboratory and field replicate analyses for both surrogates and target analytes may not exceed +/- 30 percent. The number, name, and level of surrogate compounds used in the analytical protocol must be approved by the department. Laboratory-approved standard operating procedures used for measurement of TAH and TAqH must be submitted to the department for review before sample analysis. For measuring TAH, EPA Method 602 (purge and trap with the addition of xylenes) is recommended. Measurement of PAHs in dichloromethane or other approved concentrated extract using chromatography is acceptable. GC/MS is the preferred method and will, in the department's discretion, be required in confirming disputed analyte identification; Gas Chromatography/Flame Ionization Detection (GC/FID) is acceptable for many of the compounds in this note. The department will, in its discretion, approve on a case-by-case basis, spectroscopic screening methods that are demonstrated to provide comparable sensitivity to a GC/MS method.

g. The frequency of monitoring for TAH and TAqH is a function of sampling objectives related to point source compliance, petroleum source identification, or another purpose. Initial screening of effluents or receiving waters may result in targeting specific fractions with the greatest contribution to petroleum hydrocarbon concentrations. The department will specify compliance monitoring frequency and a process for screening and targeting specific fractions in permits, approvals, certifications, orders, or notices. Targeted groups for compliance monitoring using effluents may vary from those targeted for compliance monitoring using receiving waters, based on relative contributions to TAqH.

9. Repealed 1/4/95.

10. Repealed 1/4/95.

11. Color is as measured in color units on the platinum-cobalt scale according to *Standard Methods for the Examination of Water and Wastewater*, 18th edition, 1992 (see (c)(1) of this section).

12. Wherever cited in this chapter, 10 C.F.R. Part 20 means the Standards for Protection Against Radiation published in the Code of Federal Regulations, January 1, 1978. See Note 16.

13. Wherever cited in this chapter, National Bureau of Standards Handbook 69 means Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and Water for Occupational Exposure, U.S. Department of Commerce, National Bureau of Standards Handbook 69, June 5, 1959, available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. See Note 16.

14. Wherever cited in this chapter, the National Shellfish Sanitation Program, Manual of Operations, Part I, means Sanitation of Shellfish Growing Areas, 1965 Revision, U.S. Department of Health, Education and Welfare, Public Health Service Publication No. 33 Part I, available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. See Note 16.

15. Volumetric measurements of settleable solids must be determined according to the following procedure: fill an Imhoff cone to the one-liter mark with thoroughly mixed sample. Settle for 45 minutes; gently stir sides of cone with a rod or by spinning; settle 15 minutes longer, and record volume of settleable matter in the cone as milliliters per liter. If the settled matter contains pockets of liquid between large settled particles, estimate volume of these and subtract from volume of settled matter.

16. The cited document is on file in the lieutenant governor's office and may be seen at any department office.

(c) Water quality will be analyzed according to

(1) *Standard Methods for the Examination of Water and Wastewater*, 18th edition, 1992, published jointly by the American Public Health and American Water Works Associations, and the Water Environment Federation (publication office: American Public Health Association, 1015 15th Street NW, Washington, D.C. 20005);

(2) Methods for Chemical Analysis of Water and Wastes, March 1979, Technical Report No. EPA 600-4-79-020, Environmental Monitoring and Support Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, OH 45268 (available from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161, Order No. PB 297686);

(3) Guidelines Establishing Test Procedures for the Analysis of Pollutants; Final Rule and Interim Final Rule and Proposed Rule, Federal Register Part VIII, EPA, Friday, October 26, 1984, 40 C.F.R. Part 136, Vol. 49, No. 209;

(4) Guidelines Establishing Test Procedures for the Analysis of Pollutants; Final Rule and Interim Final Rule and Proposed Rule; Corrections, Federal Register Part VI, EPA, Friday, January 4, 1985, 40 C.F.R. Part 136, pages 690 through 697;

(5) Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater, July 1982 Technical Report No. EPA 600 14-82-057, Environmental Monitoring and Support Laboratory, Cincinnati, OH 45268;

(6) methods cited in (b) of this section; or

(7) other methods of analysis approved by the department and EPA.

(d) In applying acute aquatic life criteria, a one-hour averaging period typically is used for ammonia and other fast-acting toxic substances; a 24-hour averaging period is used for all other toxic substances, unless otherwise specified by the department. (In effect before 7/28/59; am 5/24/70, Register 34; am 8/28/71, Register 39; am 10/22/72, Register 44; am 8/12/73, Register 47; am 2/2/79, Register 69; am 4/23/79, Register 70; am 9/19/79, Register 71; am 12/19/82, Register 84; am 6/23/85, Register 94; am 1/7/87, Register 100; am 1/4/95, Register 133)

Authority: AS 46.03.020
AS 46.03.050
AS 46.03.070
AS 46.03.080

Editor's note. Federally-promulgated water quality standards for the State of Alaska regarding toxic substances, including human health criteria and acute and chronic aquatic life criteria, are found at 40 C.F.R. 131.36 (1993).

18 AAC 70.022. HUMAN HEALTH RISK LEVEL FOR CARCINOGENIC SUBSTANCES. After January 1, 1995, any adoption by the department of water quality criteria for a carcinogenic substance for the protection of human health will be based on a lifetime incremental cancer risk level of 1 in 100,000 for exposed individuals. (Eff. 1/4/95, Register 133)

Authority: AS 46.03.020
AS 46.03.050
AS 46.03.070
AS 46.03.080

18 AAC 70.023. WHOLE EFFLUENT TOXICITY LIMIT. (a) An effluent discharged to a water may not impart chronic toxicity to aquatic organisms, expressed as 1.0 chronic toxic unit, at the point of discharge, or if the department authorizes a mixing zone in a permit, approval, or certification, at or beyond the mixing zone boundary, based on the minimum effluent dilution achieved in the mixing zone. If the department determines that an effluent has reasonable potential to cause or contribute to exceedance of this limit, the department will require whole effluent toxicity testing as a condition of a permit, approval, or certification. The permittee shall use methods and species approved by the United States Environmental Protection Agency in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (2d ed. 1989) (Office of Research and Development, Cincinnati, OH, EPA-600/4-89/001), *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (1988) (Office of Research and Development, Cincinnati, OH, EPA-600/4-87/028), and *Supplement to "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Surface Waters to Freshwater Organisms"* (September 1989) (Office of Research and Development, Cincinnati, OH, EPA-600/4-89/001a, Revision 1), or alternate methods and species approved by the department that provide equivalent estimates of chronic toxicity. The department will, in its discretion, require that the testing use sensitive and biologically important life stages of indigenous species.

(b) In this section, "chronic toxic unit" means an expression of the chronic toxicity of an effluent, determined as $(100/\text{NOEC})$, where NOEC, the "No Observed Effects Concentration," is the highest tested percentage concentration of an effluent, established by direct testing of toxicity to aquatic organisms, that causes no observable adverse effects, including effects on growth, development, behavior, reproduction, or survival, over a test duration that generally is one-tenth or more of the lifespan of the test organism. Other equivalent chronic toxicity endpoints approved by the department, such as the "25 percent Inhibition Concentration (IC_{25})", may be used in place of NOEC, and may incorporate shorter test durations. (Eff. 1/4/95, Register 133)

Authority: AS 46.03.020
AS 46.03.050
AS 46.03.070
AS 46.03.080

18 AAC 70.025. SITE-SPECIFIC CRITERIA. (a) The department will, in its discretion, administratively authorize in a permit, certification, or approval issued in accordance with (b) of this section, or establish in regulation under (c) of this section, a site-specific water quality criterion that modifies a water quality criterion set out in 18 AAC 70.020(b) if the department finds that the evidence is sufficient to reasonably demonstrate that the site-specific criterion will fully protect designated uses in 18 AAC 70.020(b) and that

(1) a criterion in 18 AAC 70.020(b) would require that the receiving water at a certain site be of higher quality than natural conditions;

(2) for reasons specific to a certain site, a criterion in 18 AAC 70.020(b) is more stringent or less stringent than necessary to ensure full protection of the corresponding use class; or

(3) a criterion would be better expressed in terms different from those used in 18 AAC 70.020(b).

(b) If the department finds that a natural condition of a waterbody has been demonstrated to be of lower quality than a water quality criterion for the use classes in 18 AAC 70.020(b) and that the natural condition will fully protect designated uses in 18 AAC 70.020(b), the natural condition constitutes the applicable water quality criterion. Upon application or on its own initiative, the department will determine whether a natural condition should be approved as a site-specific water quality criterion. Before making the determination, the department will issue public notice of a proposed approval under this subsection and provide opportunity for public comment. If a natural condition varies with time, the natural condition will be determined to be the prevailing highest quality natural condition measured during an annual, seasonal, or shorter time period before discharge or operation, or as the actual natural condition measured concurrent with discharge or operation. The department will, in its discretion, determine a natural condition for one or more seasonal or shorter time periods to reflect variable ambient conditions. The department will, in its discretion, require additional or continuing monitoring of natural conditions.

(c) Except as provided in (b) of this section, upon application, or on its own initiative, the department will, in its discretion, set site-specific criteria in regulation for reasons listed in (a)(2) and (3) of this section. The department will set a site-specific criterion for the "growth and propagation of fish, shellfish, other aquatic life, and wildlife" use classes in 18 AAC 70.020(a)(1)(C) and 18 AAC 70.020(a)(2)(C) only if the department finds that the evidence is sufficient to reasonably demonstrate that

(1) the species or habitats present, or expected to be present under natural conditions, are more sensitive or less sensitive to a substance than indicated by the criterion, and a site-specific criterion is required to prevent adverse effects or to alleviate an unnecessarily restrictive general criterion; or

(2) the natural characteristics of the receiving environment would increase or reduce the biological availability or the toxicity of a substance, or otherwise alter the substance, and a site-specific criterion is required to prevent adverse effects or to alleviate an unnecessarily restrictive general criterion.

(d) An applicant seeking a site-specific criterion under (b) or (c) of this section shall provide all information that the department determines is necessary to modify an existing criterion. The department will, in a timely manner, request and review for completeness, information submitted under this subsection. In all cases, the burden of proof is on the applicant seeking a site-specific criterion. (Eff. 1/7/87, Register 100; am 1/4/95, Register 133)

Authority: AS 46.03.020 AS 46.03.090
AS 46.03.050 AS 46.03.100
AS 46.03.070 AS 46.03.110
AS 46.03.080 AS 46.03.720

18 AAC 70.030. PROCEDURE FOR APPLYING WATER QUALITY

CRITERIA. In applying the appropriate water quality criteria for any water body or portion of a water body, the department will use the following procedure:

(1) if a water body is protected for more than one use class under 18 AAC 70.050, the most stringent water quality criteria for all the included use classes will apply;

(2) at the boundary between waters protected for different use classes under 18 AAC 70.050, the water quality criteria for the more stringent use class will apply; and

(3) in estuaries, where the fresh and marine water quality criteria differ within the same use class, the standard will be determined on the basis of salinity; however, the marine water quality criteria will apply for dissolved oxygen if the salinity is one part per thousand or greater and for fecal coliform bacteria if the salinity is 10 parts per thousand or greater. (In effect before 7/28/59; am 5/24/70, Register 34; am 8/28/71, Register 39; am 10/22/72, Register 44; am 8/12/73, Register 47; am 2/2/79, Register 69; am 1/7/87, Register 100)

Authority: AS 46.03.020(10)
AS 46.03.070
AS 46.03.080

18 AAC 70.032. MIXING ZONES. (a) In applying the water quality criteria and limits set by or under this chapter, the department will, in its discretion, upon application, authorize in a permit or certification, a mixing zone. The department will not authorize a mixing zone if it finds that available evidence reasonably demonstrates that

(1) pollutants discharged could

(A) bioaccumulate, concentrate, or persist above natural levels in sediments, water, or biota to significantly adverse levels based on consideration of bioaccumulation and bioconcentration factors, toxicity, and exposure;

(B) be expected to cause carcinogenic, mutagenic, or teratogenic effects on biota or human health, so that significant human health risks could occur to consumers of water, fish, or shellfish when evaluated using reasonable assumptions about exposure pathways, including exposure duration of affected aquatic organisms in the proposed mixing zone and the patterns of fisheries use and consumption in the area; or

(C) otherwise create a public health hazard through encroachment on water supply or contact recreation users of the waterbody;

(2) there could be an adverse impact on anadromous or resident fish or shellfish spawning or rearing, a barrier formed to migratory species, failure to provide a zone of passage, or an adverse effect on threatened or endangered species;

(3) flushing or mixing of the waterbody is not adequate to ensure full protection of uses of the waterbody outside the proposed mixing zone; or

(4) there could be an environmental effect so adverse that a mixing zone is not appropriate.

(b) The water quality standards and limits set by or under this chapter may be exceeded only within a mixing zone authorized by the department. A discharge may not cause or reasonably be expected to cause lethality to passing organisms in the mixing zone, or a toxic effect in the water column, sediments, or biota outside the boundaries of the mixing zone. Human health and chronic aquatic life criteria apply at and beyond the boundaries of the mixing zone. Acute aquatic life criteria apply at and beyond the boundaries of a smaller initial zone surrounding the outfall. The initial zone for application of acute criteria must be sized to prevent lethality to passing organisms. Methods for calculating the boundaries of the zone for application of acute criteria, unless otherwise specified by the department, must follow procedures under Alternatives 2 or 3 in Section 5.1.2 of the United States Environmental Protection Agency's Water Quality Standards Handbook, Second Edition, September 1993.

(c) In determining whether a mixing zone is appropriate, and in determining the size of a mixing zone, the department will ensure that existing uses of the waterbody as a whole are maintained and fully protected so that any discharge will neither partially nor completely eliminate an existing use in a waterbody as a whole, cause significant growth reduction or genetic impairment of endemic aquatic populations within the overall waterbody, or impair the overall biological integrity of the waterbody. In making a determination under this section, the department will consider

(1) the physical, biological, and chemical characteristics of the receiving water, including volume and flow rate;

- water;
- (2) the effects that the discharge might have on the uses of the receiving water;
 - (3) the flushing and mixing characteristics of the receiving water;
 - (4) effluent treatment technology requirements under federal or state law;
 - (5) the characteristics of the effluent, including volume, flow rate, dispersion, and quality after treatment;
 - (6) methods to analyze and model near-field and far-field mixing; and
 - (7) the cumulative effects of multiple mixing zones and diffuse, nonpoint source inputs located within, or affecting, the receiving water.

(d) A mixing zone must be as small as practicable and will be authorized by the department only after the applicant has submitted to the department evidence that the department finds affirmatively demonstrates that

- (1) the applicable requirements of this chapter will be met; and
- (2) an effluent or substance that might exceed the water quality criteria and limits set by or under this chapter will be treated to remove, reduce, and disperse pollutants, using methods found by the department to be most effective and technologically and economically feasible, consistent with the highest statutory and regulatory treatment requirements.

(e) The department will reduce in size or deny a mixing zone if the department finds that available evidence reasonably demonstrates that pollutants discharged will result in undesirable or nuisance aquatic life; produce objectionable color, taste, or odor in aquatic resources harvested for human consumption; or preclude or limit established processing activities or commercial, sport, personal-use, or subsistence fish and shellfish harvesting.

(f) Unless the department finds that evidence provided to the department is sufficient to reasonably demonstrate in accordance with this section that the size limitations can be safely increased, a mixing zone must comply with the following size limitations in order to be authorized by the department:

- (1) for estuarine and marine waters, the cumulative linear length of all mixing zones intersected on any given cross section of an estuary, inlet, cove, channel, or other marine water, measured at mean lower low water, may not exceed 10 percent of the total length of that cross section, nor may the total horizontal area allocated to mixing zones in these waters exceed 10 percent of the surface area, measured at mean lower low water;
- (2) for lakes, the total horizontal area allocated to all mixing zones may not exceed 10 percent of the lake's surface area;

(3) for streams, rivers, or other flowing fresh waters,

(A) a mixing zone may not extend downstream beyond the point of complete mixing, as determined using standard river flow mixing models accepted by the department, or beyond the location where a public health hazard reasonably could be expected to occur, whichever point is nearer to the point of discharge;

(B) in calculating the size of a mixing zone and maximum pollutant discharge limitations, the volume of flow available for dilution must be determined using

(i) the actual flow as determined by gauging data collected concurrent with the discharge; or

(ii) for conventional or nontoxic substances, the default 2-year, 3-day low flow (3Q2) appropriate to the period of discharge, and for toxic substances, the 10-year, 7-day low flow (7Q10) as the chronic criteria design flow for protection of aquatic life; these low flows must be calculated using methods of Ashton and Carlson, *Determination of Seasonal, Frequency and Durational Aspects of Streamflow with Regard to Fish Passage Through Roadway Drainage Structures* (1984); Carlson, *Seasonal, Frequency and Durational Aspects of Streamflow in Southeast and Coastal Alaska* (1987); or another appropriate regional regression flow model approved by the department; numeric water quality criteria apply at all design flows that are equal to or greater than these critical low flows;

(C) a mixing zone may not result in

(i) permanent or irreparable displacement of indigenous organisms; or

(ii) a reduction in fish population levels in the waterbody; and

(D) a mixing zone will not be authorized in an area of

(i) anadromous fish spawning; or

(ii) resident fish spawning redds for Arctic grayling, northern pike, rainbow trout, lake trout, brook trout, cutthroat trout, whitefish, sheefish, Arctic char (Dolly Varden), burbot, and landlocked coho, king, and sockeye salmon.

(g) An applicant requesting authorization for a mixing zone shall provide to the department all information reasonably necessary for a decision on an application for a mixing zone, including all information and demonstrations required in this section and other information that the department determines is necessary to meet the requirements of this section. The burden of proof for justifying a mixing zone through demonstrating compliance with the requirements of this section rests with the applicant. The department will, in a timely manner, request and review for completeness, information submitted under this section. (In effect before 7/28/59; am 5/24/70, Register 34; am 8/28/71, Register 39; am 10/22/72, Register 44; am 8/12/73, Register 47; am 2/2/79, Register 69; am 4/23/79, Register 70; am 9/19/79, Register 71; am 3/30/84, Register 89; am 9/15/88, Register 107; am 1/4/95, Register 133)

Authority: AS 46.03.020
AS 46.03.050
AS 46.03.070
AS 46.03.080
AS 46.03.100
AS 46.03.110

18 AAC 70.033. ZONES OF DEPOSIT. (a) In its discretion, the department will issue or certify a permit that allows deposit of substances on the bottom of marine waters within limits set by the department. The water quality criteria of 18 AAC 70.020(b) and the antidegradation requirement of 18 AAC 70.010(c) may be exceeded in a zone of deposit. However, the standards must be met at every point outside the zone of deposit. In no case may the water quality standards be violated in the water column outside the zone of deposit by any action, including leaching from, or suspension of, deposited materials. Limits of deposit will be defined in a short-term variance issued under 18 AAC 70.015 or a permit issued or certified under 18 AAC 15.

(b) In deciding whether to allow a zone of deposit, the department will consider, to the extent it deems appropriate,

- (1) alternatives that would eliminate, or reduce, any adverse effects of the deposit;
- (2) the potential direct and indirect impacts on human health;
- (3) the potential impacts on aquatic life and other wildlife, including the potential for bioaccumulation and persistence;
- (4) the potential impacts on other uses of the water body;
- (5) the expected duration of the deposit and any adverse effects; and
- (6) the potential transport of pollutants by biological, physical, and chemical processes.

(c) The department will, in its discretion, require an applicant to provide information that the department deems necessary to adequately assess (b)(1) - (b)(6) of this section. In all cases, the burden of proof for providing the required information is on the person seeking to establish a zone of deposit. (Eff. 3/30/84, Register 89; am 1/7/87, Register 100)

Authority: AS 46.03.020(10)
AS 46.03.070
AS 46.03.080
AS 46.03.100
AS 46.03.110

18 AAC 70.034. THERMAL DISCHARGES. Under section 316(a) of the Clean Water Act of 1977, if the owner or operator of a thermal discharge source, after opportunity for public hearing, can show to the department's satisfaction that application of the temperature criterion in 18 AAC 70.020 is more stringent than needed to assure the protection and propagation of diverse indigenous and anadromous populations of aquatic life in waters to which the discharge would occur, the department will, in its discretion, apply a new temperature criterion to the water body affected. The new criterion will assure the protection and propagation of diverse indigenous and anadromous populations of aquatic life, and other wildlife, in and on that water body, according to its protected use classes. (Eff. 2/2/79, Register 69; am 1/7/87, Register 100)

Authority: AS 46.03.020
AS 46.03.070
AS 46.03.080

18 AAC 70.040. NATURAL CONDITIONS. Repealed and consolidated into 18 AAC 70.010. 2/2/79.

18 AAC 70.050. CLASSIFICATION OF STATE WATERS. (a) Except as specified in (b) of this section, state water is protected for the following use classes:

- (1) fresh waters - Classes (1)(A), (1)(B), and (1)(C);
- (2) groundwaters - Class (1)(A);
- (3) marine waters - Classes (2)(A), (2)(B), (2)(C), and (2)(D).

(b) Specific water of the state is protected only for the designated use class shown, as follows:

WATERSHED TYPE/NAME	NUMBER*	LATITUDE LONGITUDE**	LOCATION	DESIGNATED USE CLASS	REACH OF WATER AFFECTED
Amy Creek	19030004	148°26'55"W 65°32'30"N	Near Livengood	(1)(A)(i) (1)(A)(iii) (1)(A)(iv) (1)(B)(ii) (1)(C)	Headwaters of Amy Creek to its confluence with Livengood Creek
Chena River	190 3004	64°47'45"N 147°54'45"W	Near Fairbanks	(1)(A)(ii) (1)(A)(iii) (1)(A)(iv) (1)(B) (1)(C)	Confluence of Chena and Chena Slough to the confluence of Chena River and Tanana River
Franklin Creek	19030004	148°30'08"W 65°33'07"N	Near Livengood	(1)(A)(iv)	Headwaters of Franklin Creek to Hess Creek Dam/ reservoir diversion ditch
Gertrude Creek	19030004	148°30'05"W 65°32'05"N	Near Livengood	(1)(A)(i) (1)(A)(iv) (1)(B)(ii) (1)(C)	Headwaters of Gertrude Creek to its confluence with Livengood Creek
Heine Creek	19030004	148°25'12"W 65°33'60"N	Near Livengood	(1)(A)(iv) (1)(C)	Headwaters of Heine Creek to Hess Creek Dam/reservoir diversion ditch
Isabell Creek	19030004	148°31'42"W 65°32'50"N	Near Livengood	(1)(A)(iv)	Headwaters of Isabell Creek to Hess Creek Dam road crossing
Isabell Creek	19030004	148°31'42"W 65°32'50"N	Near Livengood	(1)(A)(iv) (1)(C)	Hess Creek Dam road crossing to Hess Creek Dam/reservoir diversion ditch

* Watershed numbers refer to watersheds established by the U.S. Department of Interior, Geological Survey "HYDROLOGIC UNIT MAP - 1974 STATE OF ALASKA" for sale by the U.S. Geological Survey, Fairbanks, AK 99701; Denver, CO 80225; or Reston, VA 22092. This document is on file in the lieutenant governor's office and may be seen at any department office.

** River latitudes and longitudes are set at the downstream end of the affected river reach, as determined from U.S. Department of Interior, Geological Survey quadrangle maps or as assigned in "Water Resources Data for Alaska Water Year 1977" (U.S. Geological Survey Water Data Report AK-77-1).

WATERSHED TYPE/NAME	NUMBER*	LATITUDE LONGITUDE**	LOCATION	DESIGNATED USE CLASS	REACH OF WATER AFFECTED
Lillian Creek	19030004	148°34'23"W 65°30'40"N	Near Livengood	(1)(A)(iv)	Headwaters of Lillian Creek to its confluence with Livengood Creek
Lucille Creek	19030004	148°27'25"W 65°32'25"N	Near Livengood	(1)(A)(iv)	Headwaters of Lucille Creek to its confluence with Livengood Creek
Nolan Creek and all its tributaries excluding Acme Creek	190 3005	67°27'35"N 150°14'49"W	Near Wiseman	(1)(A)(iv)	Headwaters of Nolan Creek to its confluence with Wiseman Creek, and from the headwaters of each tributary of Nolan Creek to its confluence with Nolan Creek excluding Acme Creek
Olive Creek	19030004	148°30'44"W 65°28'40"N	Near Livengood	(1)(A)(iv)	Headwaters of Olive Creek to 1.5 miles above its confluence with the Tolovana River
Olive Creek	19030004	148°30'44"W 65°28'40"N	Near Livengood	(1)(A)(i) (1)(A)(iii) (1)(A)(iv) (1)(B)(i) (1)(B)(ii) (1)(C)	1.5 miles above the confluence with the Tolovana River to its confluence with the Tolovana River
ReadyCreek	19030004	148°35'30"W 65°29'43"N	Near Livengood	(1)(A)(i) (1)(A)(iii) (1)(A)(iv) (1)(B)(ii) (1)(C)	Headwaters of Ready Bullion Bullion Creek to its confluence with Livengood Creek

* Watershed numbers refer to watersheds established by the U.S. Department of Interior, Geological Survey "HYDROLOGIC UNIT MAP - 1974 STATE OF ALASKA" for sale by the U.S. Geological Survey, Fairbanks, AK 99701; Denver, CO 80225; or Reston, VA 22092. This document is on file in the lieutenant governor's office and may be seen at any department office.

** River latitudes and longitudes are set at the downstream end of the affected river reach, as determined from U.S. Department of Interior, Geological Survey quadrangle maps or as assigned in "Water Resources Data for Alaska Water Year 1977" (U.S. Geological Survey Water -Data Report AK-77-1).

WATERSHED TYPE/NAME	NUMBER*	LATITUDE LONGITUDE**	LOCATION	DESIGNATED USE CLASS	REACH OF WATER AFFECTED
Ruth Creek	19030004	148°32'30"W 65°31'26"N	Near Livengood	(1)(A)(iv)	Headwaters of Ruth Creek to its confluence with Livengood Creek
Steel Creek	19030004	148°24'50"W 65°28'12"N	Near Livengood	(1)(A)(i) (1)(A)(iii) (1)(A)(iv) (1)(B)(ii) (1)(C)	Headwaters of Steel Creek to its confluence with the Tolovana River
Wonder Creek	19030004	148°27'21"W 65°33'33"N	Near Livengood	(1)(A)(iv) (1)(C)	Headwaters of Wonder Creek to Hess Creek Dam/reservoir diversion ditch

* Watershed numbers refer to watersheds established by the U.S. Department of Interior, Geological Survey "HYDROLOGIC UNIT MAP - 1974 STATE OF ALASKA" for sale by the U.S. Geological Survey, Fairbanks, AK 99701; Denver, CO 80225; or Reston, VA 22092. This document is on file in the lieutenant governor's office and may be seen at any department office.

** River latitudes and longitudes are set at the downstream end of the affected river reach, as determined from U.S. Department of Interior, Geological Survey quadrangle maps or as assigned in "Water Resources Data for Alaska Water Year 1977" (U.S. Geological Survey Water -Data Report AK-77-1).

(In effect before 7/28/59; am 5/24/70, Register 34; am 8/28/71, Register 39; am 10/22/72, Register 44; am 8/12/73, Register 47; am 2/2/79, Register 69; am 9/22/84, Register 91; am 1/7/87, Register 100; am 11/30/89, Register 112)

Authority: AS 46.03.020(10)
AS 46.03.070
AS 46.03.080

18 AAC 70.055. PROCEDURE FOR RECLASSIFICATION. (a) At least once each year, the department will hold hearings for the purpose of reviewing the classification of state water under 18 AAC 70.050. In its discretion, the department will use information obtained from the public hearings, and from other sources considered appropriate by the department, in carrying out the department's policymaking functions with respect to reclassification of state water.

(b) A decision on whether to proceed with reclassification is a matter of the department's discretion. Before amending 18 AAC 70.050 to reclassify state water, the department will conduct at least one public hearing, and otherwise comply with 40 C.F.R. Part 131, as amended effective December 8, 1983, and other applicable state and federal statutes and regulations.

(c) An interested person may petition the department for the adoption or repeal of a classification of state water under 18 AAC 70.050 in accordance with AS 44.62.220 - 44.62.230. This subsection neither expands nor restricts the opportunity to petition provided under AS 44.62.220 - 44.62.230. The opportunity to petition does not give rise to an adjudicatory hearing nor to any adjudicative procedures under AS 44.62.330 -- 44.62.630.

(d) The following water may not be reclassified under this section:

(1) water in areas administered under the National Wilderness Preservation System;

(2) water in state and national parks, national preserves and monuments, national recreation areas, and national wildlife refuges;

(3) wild and scenic rivers established under 16 U.S.C. 1271 et seq.;

(4) marine sanctuaries established under 33 U.S.C. 1401 et seq.;

(5) estuarine sanctuaries established under 16 U.S.C. 4151 et seq.;

(6) water in critical habitat areas established under AS 16.20.220 -- 16.20.270;
and

(7) water in Land Use Designation (LUD) II areas established by the U.S. Forest Service. (Eff. 2/2/79, Register 69; am 12/19/82, Register 84; am 1/7/87, Register 100)

Authority: AS 46.03.020
AS 46.03.070
AS 46.03.080

18 AAC 70.058. RECLASSIFICATION CRITERIA. Repealed 1/7/87.

18 AAC 70.060. PERMITS. Repealed 10/22/72.

18 AAC 70.070. WATER QUALITY CRITERIA FOR WATERS OF THE STATE OF ALASKA. Repealed and consolidated into section 20(b). 10/22/72.

18 AAC 70.080. MINIMUM TREATMENT. Repealed and consolidated into 18 AAC 72. 2/2/79.

18 AAC 70.081. CERTIFICATE OF REASONABLE ASSURANCE. Repealed 8/21/78.

18 AAC 70.082. PUBLIC NOTICE OF APPLICATION. Repealed 8/21/78.

18 AAC 70.083. PUBLIC HEARING. Repealed 8/21/78.

18 AAC 70.084. NOTICE OF PUBLIC HEARING. Repealed 8/21/78.

18 AAC 70.085. ACTION UPON APPLICATION. Repealed 8/21/78.

18 AAC 70.086. ENFORCEMENT DISCRETION. In determining whether to initiate enforcement action on a water quality violation, the department will consider whether the activity in question was conducted in compliance with permit conditions established in accordance with AS 46.03.100 or 46.03.110(e), and with 18 AAC 15; engineering plans approved in accordance with AS 46.03.720; or best management practices adopted by the department. This section is intended to confirm the department's enforcement discretion, and does not create a reviewable decision. (Eff. 2/2/79, Register 69; am 1/7/87, Register 100)

Authority: AS 46.03.020

18 AAC 70.090. IMPLEMENTATION AND ENFORCEMENT PLAN. Consolidated in 18 AAC 72. 2/29/79.

18 AAC 70.100. PENALTIES. Repealed 8/21/78.

18 AAC 70.110. DEFINITIONS. Repealed. (In effect before 7/28/59; am 5/24/70, Register 34; am 8/28/71, Register 39; am 10/22/72, Register 44; am 8/12/73, Register 47; am 2/2/79, Register 69; am 4/23/79, Register 70; am 9/19/79, Register 71; am 6/23/85, Register 94; am 1/7/87, Register 100; repealed 1/4/95, Register 133)

18 AAC 70.990. DEFINITIONS. Unless the context indicates otherwise, in this chapter

(1) "acute" means of, relating to, or resulting from a level of toxicity of a substance, a substance combination, or an effluent sufficient to produce observable lethal or sublethal effects in aquatic organisms exposed for short periods of time, typically 96 hours or less;

(2) "anadromous fish" has the meaning given that term in the definitions section of the Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes, adopted by reference in 5 AAC 95.010;

(3) "apparent color" means the condition of water that results in the visual sensations of hue and intensity, due both to substances in solution and to suspended matter;

(4) "aquaculture" means the cultivation of aquatic plants or animals for human use or consumption;

(5) "boundary" means a line or landmark that serves to clarify, outline, or mark a limit, border, or interface;

(6) "carcinogenic" means a substance that is expected to cause cancer in aquatic life or, for human health purposes, that is classified as a Group A or Group B carcinogen according to the United States Environmental Protection Agency *Guidelines for Carcinogen Risk Assessment*, 51 Fed. Reg. 33992, 33999 - 34000 (1986); Group A includes substances that have been shown to cause cancer in humans; Group B, based on epidemiologic and other studies, includes "probable human carcinogens" and is divided between

(A) "B1", for which there is limited evidence of carcinogenicity in humans; and

(B) "B2", for which there is sufficient evidence of carcinogenicity in animals, but inadequate or no evidence of carcinogenicity in humans from epidemiologic studies;

(7) "central office" means the main office of the Alaska Department of Environmental Conservation in Juneau;

(8) "certification" means the certificate of reasonable assurance the department may issue under 33 U.S.C. 1341 (Clean Water Act, sec. 401), as amended through February 4, 1987;

(9) "Clean Water Act" means the Federal Water Pollution Control Act (33 U.S.C. 1251 - 1387), as amended through February 4, 1987;

(10) "chronic" means of, relating to, or resulting from a level of toxicity of a substance, a substance combination, or an effluent sufficient to produce observable lethal or sublethal effects, including effects on growth, development, behavior, reproduction, or survival, in aquatic organisms exposed for a period of time that generally is one-tenth or more of their life span;

(11) "color" means the condition that results in the visual sensations of hue and intensity as measured after turbidity is removed;

(12) "commissioner" means the commissioner of the Department of Environmental Conservation, or the commissioner's designee;

(13) "compensation point for photosynthetic activity" means the point at which incident light penetration allows plankton to photosynthetically produce enough oxygen to balance their respiration requirements;

(14) "contact recreation" means activities in which there is direct and intimate contact with water; examples include wading, swimming, diving, water skiing, and any intimate contact with water directly related to shoreline activities;

(15) "criterion" means a set concentration or limit of a water quality parameter that, when not exceeded, will protect an organism, a population of organisms, a community of organisms, or a prescribed water use with a reasonable degree of safety; a criterion might be a narrative statement instead of a numerical concentration or limit;

(16) "department" means the Alaska Department of Environmental Conservation;

(17) "designated uses" means those uses specified in 18 AAC 70.020 as protected use classes for each waterbody or segment, whether or not those uses are being attained;

(18) "dissolved oxygen" means the concentration of oxygen in water as determined either by the Winkler (iodometric) method and its modifications or by the membrane electrode method;

(19) "effluent" means the segment of a wastewater stream that follows the final step in a treatment process and precedes discharge of the wastewater stream to the receiving environment;

(20) "existing uses" means those uses actually attained in a waterbody on or after November 28, 1975;

(21) "fecal coliform bacteria" means those bacteria that can ferment lactose at $44.5^{\circ} \pm 0.2^{\circ}\text{C}$ to produce gas in a multiple tube procedure; "fecal coliform bacteria" also means all bacteria that produce blue colonies within $24 \pm$ hours of incubation at $44.5^{\circ} \pm 0.2^{\circ}\text{C}$ in an M-FC broth medium;

(22) "fish" means any of the group of cold-blooded vertebrates that live in water and have permanent gills for breathing and fins for locomotion;

(23) "grain size accumulation graph" means a plot of sediment-sieving data showing logarithm of grain size in millimeters on the horizontal axis and percent accumulation by weight (linear scale) on the vertical axis;

(24) "groundwater" means water in the zone of saturation; in this paragraph, "zone of saturation" is the zone below the water table, where all interstices are filled with water;

(25) "highest statutory and regulatory treatment requirements" means

(A) any federal technology-based effluent limitation identified in 40 C.F.R. 125.3, as amended through November 29, 1994;

(B) minimum treatment standards in 18 AAC 72.040; and

(C) any treatment requirement imposed under another state law that is more stringent than a requirement of this chapter;

(26) "industrial use" means use of a water supply for a manufacturing or production enterprise except food processing, and includes mining, placer mining, energy production, or development;

(27) "irreparable displacement" means a change in aquatic organism use or presence due to a decrease in water quality that is irreversible by natural processes so that the biological system will not return to a state functionally equivalent to the original after cessation of discharge;

(28) "lake" means an inland waterbody of substantial size that occupies a basin or hollow in the earth's surface and that might or might not have a current or a single direction of flow;

(29) "mean" means the average of values obtained over a specified time period and, for fecal coliform analysis, is computed as a logarithm;

(30) "micrograms per liter ($\mu\text{g/l}$)" means the concentration at which one millionth of a gram (10^{-6} g) is found in a volume of one liter;

(31) "milligrams per liter (mg/l)" means the concentration at which one thousandth of a gram (10^{-3} g) is found in a volume of one liter; it is approximately equal to the unit "parts per million (PPM)," formerly of common use;

(32) "mixing zone" means a volume of water, adjacent to a discharge, in which wastes discharged mix with the receiving water;

(33) "most probable number (MPN)" means the statistic that represents the number of individuals most likely present in a given sample, based on test data;

(34) "natural condition" means any physical, chemical, biological, or radiological condition existing in a waterbody before any human-caused influence on, discharge to, or addition of material to, the waterbody;

(35) "nephelometric turbidity unit (NTU)" has the meaning given the term "NTU" in 18 AAC 80.990;

(36) "nonpoint source" means a source of pollution other than a point source;

(37) "oils and grease" means oils and grease as defined by the procedure used under 18 AAC 70.020(c)(1);

(38) "pH" means the negative logarithm of the hydrogen-ion concentration, expressed as moles per liter:

$$\text{pH} = -\log_{10} (\text{H}^+);$$

(39) "point of complete mixing" means the computed point where the variation in the concentration of a water quality parameter across a stream or river is predicted to be less than five percent;

(40) "point source" means a discernible, confined, and discrete conveyance, including a pipe, ditch, channel, tunnel, conduit, well, container, rolling stock, or vessel or other floating craft, from which pollutants are or could be discharged;

(41) "pollution" has the meaning given that term in AS 46.03.900;

(42) "residues" means floating solids, debris, sludge, deposits, foam, scum, or any other material or substance remaining in a waterbody as a result of direct or nearby human activity;

(43) "secondary recreation" means recreation activities in which water use is incidental, accidental, or sensory; it includes fishing, boating, camping, hunting, hiking, and vacationing;

(44) "sediment" means solid material of organic or mineral origin that is transported by, suspended in, or deposited from water and includes chemical and biochemical precipitates and organic material such as humus;

(45) "settleable solids" means solid material of organic or mineral origin that is transported by and deposited from water, as measured by the volumetric Imhoff cone method and at the method detection limits specified in method 2540(F), *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992);

(46) "sheen" means an iridescent appearance on the water surface;

(47) "significantly adverse levels" means concentrations of pollutants that would impair the productivity or biological integrity of the overall waterbody, including reducing or eliminating the viability or sustainability of a given species or community of species in the overall waterbody;

(48) "sodium adsorption ratio (SAR)" means the estimated degree to which sodium from a given water will be adsorbed in soil, as proposed in *Diagnosis and Improvement of Saline and Alkali Soils*, Agriculture Handbook No. 60, United States Salinity Laboratory Staff, United States Department of Agriculture, and is expressed as the quotient of the sodium ion concentration and the square root of half the sum of the calcium and magnesium ion concentrations:

$$\frac{(Na^{++})}{\sqrt{\frac{(Ca^{++}) + (Mg^{++})}{2}}}$$

(49) "spawning" means the process of producing, emitting, or depositing eggs, sperm, seed, germ, larvae, young, or juveniles, especially in large numbers, by aquatic life;

(50) "thermocline" means a zone of water between a warmer, surface zone and a colder, deep-water zone in a thermally stratified waterbody, in which water temperature decreases rapidly with depth;

(51) "total aqueous hydrocarbons (TAqH)" means those collective dissolved and water-accommodated monoaromatic and polynuclear aromatic petroleum hydrocarbons that are persistent in the water column; "total aqueous hydrocarbons" does not include floating surface oils or greases;

(52) "total aromatic hydrocarbons (TAH)" means the sum of the following volatile monoaromatic hydrocarbon compounds: benzene, ethylbenzene, toluene, and the xylene isomers, commonly called BETX;

(53) "toxic" means of, relating to, or resulting from a substance or substance combination that causes death, disease, malignancy, genetic mutations, abnormalities or malfunctions in growth, development, behavior, or reproduction, or other physical or physiological abnormalities or malfunctions in affected organisms or their offspring;

(54) "toxic substances" means those substances or substance combinations, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available, cause a toxic effect in the affected organism or its offspring; "toxic substances" includes the following substances, and any other substance identified as a toxic pollutant under 33 U.S.C. 1317(a) (Clean Water Act, sec. 307(a)), as amended through February 4, 1987:

2-chlorophenol; 2,4-dichlorophenol; 2,4-dimethylphenol; acenaphthene; acrolein; acrylonitrile; Aldrin/Dieldrin; antimony; arsenic; asbestos; benzene; benzidine; beryllium; cadmium; carbon tetrachloride; Chlordane; chlorinated benzenes; chlorinated naphthalene; chlorinated ethanes; chloroalkyl ethers; chloroform; chlorophenols; chlorophenoxy herbicides; chromium; copper; cyanide; DDT; Demeton; dichlorobenzenes; dichlorobenzidine; dichloroethylenes; dichloropropane; dichloropropene; dinitrotoluene; diphenylhydrazine; Endosulfan; Endrin; ethylbenzene; fluoranthene; Guthion; haloethers; halo-methanes; Heptachlor; hexachlorobutadiene; hexachlorocyclohexane; hexachlorocyclopentadiene; isophorone; lead; Lindane; Malathion; mercury; methoxy-chlor; Mirex; naphthalene; nickel; nitrobenzene; nitrophenols; nitrosamines; p-dioxin; Parathion; PCBs; pentachlorophenol; phenol; phthalate esters; polynuclear aromatic hydrocarbons; selenium; silver; tetrachloroethylene; thallium; toluene; Toxaphene; trichloroethylene; vinyl chloride; and zinc;

(55) "treatment works" has the meaning given that term in AS 46.03.900;

(56) "turbidity" means an expression of the optical property that causes light to be scattered and absorbed rather than transmitted in straight lines through a water sample; turbidity in water is caused by the presence of suspended matter such as clay, silt, finely divided organic and inorganic matter, plankton, and other microscopic organisms;

(57) "water," "waterbody," and "waters" have the meaning given the term "waters" in AS 46.03.900;

(58) "water of the United States" has the meaning given the term "waters of the United States" in 40 C.F.R. 122.2, as amended through November 29, 1994;

(59) "water recreation" means contact recreation or secondary recreation, as defined in this section;

(60) "water supply" means any of the waters of the state that are designated in this chapter to be protected for fresh water or marine water uses, including waters used for drinking, culinary, food processing, agricultural, aquacultural, seafood processing, and industrial purposes; "water supply" does not necessarily mean that a waterbody, protected as a supply for the uses listed in this paragraph, is safe to drink in its natural state; and

(61) "wildlife" means all species of mammals, birds, reptiles, and amphibians.
(Eff. 1/4/95, Register 133)

Authority: AS 46.03.020
AS 46.03.050
AS 46.03.070
AS 46.03.080
AS 46.03.090
AS 46.03.100
AS 46.03.110
AS 46.03.720

Editor's note: Before Register 133, 1/4/95, the definitions for 18 AAC 70 appeared in former 18 AAC 70.110.

Editor's note: The central office of the Alaska Department of Environmental Conservation, referred to in 18 AAC 70.990, is located at 410 Willoughby Avenue, Suite 105, Juneau, AK 99801-1795.

ALASKA STATUTES
CITED AS AUTHORITY FOR 18 AAC 70

Alaska Statutes

Title 46. Water, Air, Energy, and Environmental Conservation.

Chapter

- 03. Environmental Conservation (§§ 46.03.010 — 46.03.900)
- 04. Oil and Hazardous Substance Pollution Control (§§ 46.04.010 — 46.04.900)
- 06. Recycling and Reduction of Litter (§§ 46.06.010 — 46.06.150)
- 07. Village Safe Water Act (§§ 46.07.010 — 46.07.080)
- 08. Oil and Hazardous Substance Releases (§§ 46.08.005 — 46.08.900)
- 09. Hazardous Substance Release Control (§§ 46.09.010 — 46.09.900)
- 11. Conservation of Energy and Materials (§§ 46.11.010 — 46.11.900)
- 13. Alaska State Emergency Response Commission (§§ 46.13.010 — 46.13.900)
- 15. Water Use Act (§§ 46.15.010 — 46.15.270)
- 16. Management and Use of Water in Mining (§§ 46.16.010 — 46.16.100)
- 17. Supervision of Safety of Dams and Reservoirs (§§ 46.17.010 — 46.17.900)
- 30. Water and Wastewater Works Operators (§§ 46.30.010 — 46.30.130)
- 35. Environmental Procedures Coordination (§§ 46.35.010 — 46.35.210)
- 40. The Alaska Coastal Management Program (§§ 46.40.010 — 46.40.210)
- 45. Northwest Interstate Compact on Low-level Radioactive Waste Management (§§ 46.45.010, 46.45.020)

Revisor's notes. — The provisions of this title were redrafted in 1987 to remove personal pronouns pursuant to § 4, ch. 58,

SLA 1982 and in 1987 and 1991 to make other minor word changes.

Chapter 03. Environmental Conservation.

Article

1. Declaration of Policy (§ 46.03.010)
2. Department of Environmental Conservation (§§ 46.03.020 — 46.03.045)
3. Water Pollution Control and Waste Disposal (§§ 46.03.050 — 46.03.120)
4. Air Pollution Control (§§ 46.03.140 — 46.03.245)
5. Radiation and Hazardous Waste Protection (§§ 46.03.250 — 46.03.317)
6. Pesticide Control (§§ 46.03.320, 46.03.330)
7. Underground Storage Tank Systems (§§ 46.03.360 — 46.03.450)
8. Prohibited Acts and Penalties (§§ 46.03.710 — 46.03.850)
9. General Provisions (§§ 46.03.860 — 46.03.900)

Article 1. Declaration of Policy.

Section

10. Declaration of policy

Sec. 46.03.010. Declaration of policy. (a) It is the policy of the state to conserve, improve, and protect its natural resources and environment and control water, land, and air pollution, in order to enhance the health, safety, and welfare of the people of the state and their overall economic and social well-being.

(b) It is the policy of the state to improve and coordinate the environmental plans, functions, powers, and programs of the state, in cooperation with the federal government, regions, local governments, other public and private organizations, and concerned individuals, and to develop and manage the basic resources of water, land, and air to the end that the state may fulfill its responsibility as trustee of the environment for the present and future generations. (§ 3 ch 120 SLA 1971)

NOTES TO DECISIONS

This chapter is not void for vagueness under the Alaska and United States constitutions. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

When the somewhat shadowy boundaries of the area of prohibited conduct were contrasted with the overall purpose of this chapter and the absence of any evidence of discriminatory application, the supreme court could not say that the presumption of constitutionality of the statute was overcome. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

There can be no doubt of the gen-

eral frame of operation of this chapter; no contention can be made that this chapter has a subterfugal purpose or effect of curtailing the exercise of protected political or individual rights to speech, association, privacy and the like. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

As to adequacy of notice of what acts prohibited, see *Stock v. State*, 526 P.2d 3 (Alaska 1974).

The concern indicated by this chapter is the protection of the environment from pollution. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

Article 2. Department of Environmental Conservation.**Section**

20. Powers of the department
30. Water quality enhancement, water supply, sewage, and solid waste facilities grants

Section

32. Alaska clean water fund
34. Alaska clean water account
36. Alaska drinking water fund
38. Alaska drinking water account

Sec. 46.03.020. Powers of the department. The department may

- (1) enter into contracts necessary or convenient to carry out the functions, powers, and duties of the department;
- (2) review and appraise programs and activities of state departments and agencies in light of the policy set out in AS 46.03.010 for the purpose of determining the extent to which the programs and activities are contributing to the achievement of that policy and to make recommendations to the departments and agencies, including but not limited to, environmental guidelines;
- (3) consult with and cooperate with
 - (A) officials and representatives of any nonprofit corporation or organization in the state;
 - (B) persons, organizations, and groups, public and private, using, served by, interested in, or concerned with the environment of the state;
- (4) appear and participate in proceedings before any state or federal regulatory agency involving or affecting the purposes of the department;
- (5) undertake studies, inquiries, surveys, or analyses it may consider essential to the accomplishment of the purposes of the department; these activities may be carried out by the personnel of the department or in cooperation with public or private agencies, including educational, civic, and research organizations, colleges, universities, institutes, and foundations;
- (6) at reasonable times enter and inspect with the consent of the owner or occupier any property or premises to investigate either actual or suspected sources of pollution or contamination or to ascertain compliance or noncompliance with a regulation that may be adopted under AS 46.03.020 — 46.03.040; information relating to secret processes or methods of manufacture discovered during investigation is confidential;
- (7) conduct investigations and hold hearings and compel the attendance of witnesses and the production of accounts, books, and documents by the issuance of a subpoena;
- (8) advise and cooperate with municipal, regional, and other local agencies and officials in the state, to carry out the purposes of this chapter;
- (9) act as the official agency of the state in all matters affecting the purposes of the department under federal laws now or hereafter enacted;

(10) adopt regulations necessary to effectuate the purposes of this chapter, including, by way of example and not limitation, regulations providing for

(A) control, prevention, and abatement of air, water, or land or subsurface land pollution;

(B) safeguard standards for petroleum and natural gas pipeline construction, operation, modification, or alteration;

(C) protection of public water supplies by establishing minimum drinking water standards, and standards for the construction, improvement, and maintenance of public water supply systems;

(D) collection and disposal of sewage and industrial waste;

(E) collection and disposal of garbage, refuse, and other discarded solid materials from industrial, commercial, agricultural, and community activities or operations;

(F) *[Repealed, § 12 ch 172 SLA 1978.]*

(G) control of pesticides;

(H) other purposes as may be required for the implementation of the policy declared in AS 46.03.010;

(I) handling, transportation, treatment, storage, and disposal of hazardous wastes;

(11) after consultation with other state agencies and local government officials, identify and propose for addition or deletion, by regulation, other licenses, permits, or authorizations for which the provisions of AS 46.35 are applicable;

(12) *[Repealed, § 92 ch 36 SLA 1990.]*

(13) inspect the premises of sellers and suppliers of paint, vessels, and marine and boating supplies, and take other actions necessary to enforce AS 46.03.715. (§ 3 ch 120 SLA 1971; am § 1 ch 220 SLA 1976; am § 2 ch 60 SLA 1977; am § 12 ch 172 SLA 1978; am § 8 ch 93 SLA 1981; am § 86 ch 138 SLA 1986; am § 1 ch 67 SLA 1987; am § 92 ch 36 SLA 1990; am § 30 ch 126 SLA 1994)

Effect of amendments. — The 1994 amendment, effective July 1, 1994, in paragraph (11), deleted “, and report annually to the legislature the permits that have been included or deleted” at the end and made a minor stylistic change.

NOTES TO DECISIONS

Cited in *Colville Envtl. Servs., Inc. v. North Slope Borough*, 831 P.2d 341 (Alaska 1992).

Sec. 46.03.050. Authority. The department has jurisdiction to prevent and abate the pollution of the waters of the state. (§ 3 ch 120 SLA 1971)

Sec. 46.03.060. Water pollution control plan. The department shall develop comprehensive plans for water pollution control in the state and conduct investigations it considers advisable and necessary for the discharge of its duties. (§ 3 ch 120 SLA 1971)

Collateral references. — Health board's power to prescribe methods of keeping water free from impurities. 23 ALR 228.

Constitutionality and construction of statutes for protection of municipal water supply. 72 ALR 673.

Validity of prohibition or regulation of bathing, swimming, boating, fishing, etc., to protect public water supply. 56 ALR2d 790.

Sec. 46.03.070. Pollution standards. After public hearing, the department may adopt standards and make them public and determine what qualities and properties of water indicate a polluted condition actually or potentially deleterious, harmful, detrimental, or injurious to the public health, safety, or welfare, to terrestrial and aquatic life or their growth and propagation, or to the use of waters for domestic, commercial, industrial, agricultural, recreational, or other reasonable purposes. (§ 3 ch 120 SLA 1971)

Sec. 46.03.080. Quality and purity standards. After study and public hearings held upon due notice, the department may establish standards of quality and purity or group the designated waters of the state into classes as to minimum quality and purity, or both. The department shall classify waters in accordance with considerations of best usage in the interest of the public. The department may alter and modify classifications after hearing. (§ 3 ch 120 SLA 1971)

Collateral references. — Statute prescribing standard of purity of water fur-

nished for human consumption. 6 ALR 475.

Sec. 46.03.090. Plans for pollution disposal. The department may require the submission of plans for sewage and industrial waste disposal or treatment or both for a publicly or privately owned or operated industrial establishment, community, public or private property subdivision or development. (§ 3 ch 120 SLA 1971)

NOTES TO DECISIONS

Quoted in *State v. Anderson*, 749 P.2d 1342 (Alaska 1988).

Sec. 46.03.100. Waste disposal permit. (a) A person who conducts an operation that results in the disposal of solid or liquid waste material or heated process or cooling water into the waters or onto the land of the state shall procure a permit from the department before disposing of the waste material or water. The permit shall be obtained for direct disposal and for disposal into publicly operated sewerage systems.

(b) A permit for disposal of a hazardous waste may not be issued under this section unless the applicant for the permit has furnished proof to the commissioner of financial ability to control the hazardous waste. Proof of financial responsibility may be demonstrated by self-insurance, insurance, surety, or guarantee, under regulations adopted by the department. Acceptance of proof of financial responsibility under this subsection expires

(1) one year from its issuance for self-insurance;

(2) on the effective date of a change in the surety bond, guarantee, or insurance agreement; or

(3) on the expiration or cancellation of the surety bond, guarantee, or insurance agreement.

(c) This section does not apply to a person discharging only domestic sewage into a sewerage system.

(d) This section does not apply to injection projects permitted under AS 31.05.030(h).

(e) A person who applies for a solid waste permit under this section shall demonstrate to the satisfaction of the commissioner that the applicant has reasonably considered all solid waste management options and that the permit would be consistent with the practices and priorities established under AS 46.06.021. (§ 3 ch 120 SLA 1971; am § 3 ch 22 SLA 1976; am § 9 ch 93 SLA 1981; am § 4 ch 91 SLA 1984; am § 3 ch 88 SLA 1990)

Revisor's notes. — Subsections (b) and (c) were formerly (c) and (b), respectively. Relettered in 1987.

Cross references. — For further requirements for persons submitting proof of financial ability under this section, see AS 46.03.833.

Effect of amendments. — The 1990 amendment added subsection (e).

Opinions of attorney general. — This section confers upon the Department of Environmental Conservation permit authority over dredge or fill activities, including residential subdivisions, within

wetlands, estuaries, and inland and coastal marshes periodically inundated by discernible bodies of fresh or salt water upland from the mean high tide line to the extent of the aquatic or salt water vegetation line. November 13, 1975 Op. Att'y Gen.

Dredge or fill activities in coastal and fresh water wetlands shoreward to the aquatic vegetation line do result in the disposal of solid waste material into the waters of the state within the meaning of this section and thus, to the extent that these activities are of a commercial or in-

dustrial nature, do require a permit from the Department of Environmental Conservation. November 13, 1975 Op. Att'y Gen.

The state has jurisdiction to require

permits of government contractors discharging sewage from a federally-owned treatment plant. June 28, 1977 Op. Att'y Gen.

Sec. 46.03.110. Waste disposal permit procedure. (a) An application for a permit shall be made on forms prescribed by the department or on forms prescribed by the United States Environmental Protection Agency and must contain the name and address of the applicant, a description of the applicant's operations, the quantity and type of waste material sought to be disposed of, the proposed method of disposal, and any other information considered necessary by the department. Application for permit shall be made at least 60 days before commencement of a proposed discharge.

(b) Upon receipt of a proper application the department shall publish notice of the application in two separate publications of a newspaper of general circulation within the general area in which the disposal of waste material is proposed to be made. The notice may also be published in other appropriate information media. The notice must include a statement that a person who wants to present views to the department in regard to the application may do so in writing to the department within 30 days of the second publication of the notice. The written response entitles the writer to a copy of the application.

(c) When the department receives an application, the commissioner shall immediately send copies of the application to the commissioner of fish and game, the commissioner of natural resources, the commissioner of commerce and economic development, and the commissioner of health and social services.

(d) The department may specify in a permit the terms and conditions under which waste material may be disposed of. The terms and conditions shall be directed to avoiding pollution and to otherwise carry out the policies of this chapter. A permit may not be effective for a period in excess of five years from the date of issuance.

(e) If the department has certified a National Pollutant Discharge Elimination System permit under 33 U.S.C. 1341 (sec. 401, Federal Water Pollution Control Act Amendments of 1972), and the United States Environmental Protection Agency has issued that permit to a person, the department may waive the requirements of this section, and adopt the federal permit as the permit required under AS 46.03.100. (§ 3 ch 120 SLA 1971; am § 6 ch 104 SLA 1971; am § 116 ch 218 SLA 1976; am §§ 4, 5 ch 220 SLA 1976)

Opinions of attorney general. — This section requires no more than that the Department of Environmental Conservation allow a 30-day public comment period, and that it fully and completely review

those comments on receipt. June 11, 1975 Op. Att'y Gen.

The Department of Environmental Conservation cannot issue a waste disposal permit prior to expiration of the 30-day

public comment period. June 11, 1975 Op. Att'y Gen.

If the Department of Environmental Conservation has reviewed and considered all public and agency comments prior to the expiration of the 60-day period, and has also completed the preparation of the permit itself within that period, it would be competent for the department to waive the remainder of the 60-day "pre-com-

mencement" period, and issue the permit at that time. June 11, 1975 Op. Att'y Gen.

The public comments received pursuant to subsection (b) of this section function similarly to environmental impact statements for federal agencies contemplating major federal actions significantly affecting the quality of the environment. June 11, 1975 Op. Att'y Gen.

Sec. 46.03.120. Termination or modification of waste disposal permit. (a) The department may terminate a permit upon 30 days' written notice if the department finds

(1) that the permit was procured by misrepresentation of material fact or by failure of the applicant to disclose fully the facts relating to its issuance;

(2) that there has been a violation of the conditions of the permit;

(3) that there has been a material change in the quantity or type of waste disposed of.

(b) The department may modify a permit if the department finds that a material change in the quality or classification of the waters of the state has occurred. (§ 3 ch 120 SLA 1971)

Sec. 46.03.720. Construction and operation of certain facilities prohibited. (a) A person may not construct, extend, install, or operate a sewerage system or treatment works, or any part of a sewerage system or treatment works, until plans for it are submitted to the department for review and the department approves them in writing and issues a written permit.

(b) A person may not construct, extend, install, or operate a public water supply system, or any part of a public water supply system, until plans for it are submitted to the department for review and the department approves them in writing.

(c) The department may waive the requirements of this section. (§ 3 ch 120 SLA 1971; am § 7 ch 220 SLA 1976)

Opinions of attorney general. — The state has jurisdiction to require permits of government contractors discharging sewage from a federally-owned treatment plant. June 28, 1977 Op. Att'y Gen.

The Department of Environmental Conservation's regulations concerning on-site water wells and wastewater disposal systems are a legitimate exercise of the de-

partment's police power though the department lacks authority to adjudicate among conflicting future uses of land. The department also has authority under this section to regulate the construction of all (private and public) water wells drawn from a public water source. September 5, 1985 Op. Att'y Gen.

Sec. 46.03.900. Definitions. In this chapter

(1) "air contaminant" means dust, fumes, mist, smoke, other particulate matter, vapor, gas, odorous substances or a combination of these;

(2) "air pollution" means the presence in the outdoor atmosphere of one or more air contaminants in quantities and duration that tend to be injurious to human health or welfare, animal or plant life or property or would unreasonably interfere with the enjoyment of life or property;

(3) "atomic radiation" means all ionizing radiation;

(4) "broadcast chemicals" means chemical substances which are released into the air or onto land or water for the purpose of preventing, destroying, repelling, stimulating or retarding plant or animal life, or chemical substances released for meteorological control, oil spill control or fire control;

(5) "commissioner" means the commissioner of environmental conservation;

(6) "department" means the Department of Environmental Conservation;

(7) "dispose" has the meaning given "disposal" in 42 U.S.C. 6903(3);

(8) "facility" means any offshore or onshore structure, improvement, vessel, vehicle, land, enterprise, or endeavor;

(9) "hazardous waste" means a waste or combination of wastes that because of quantity, concentration, or physical, chemical, or infectious characteristics may

(A) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or

(B) pose a substantial present or potential hazard to human health or the environment when improperly managed, treated, stored, transported, or disposed of;

(10) "hazardous waste reduction" means decreasing, avoiding, or eliminating wastes that are hazardous to human health or the environment through source reduction or recycling; the term does not include hazardous waste treatment or hazardous waste disposal;

(11) "industrial waste" means a liquid, gaseous, solid, or other waste substance or a combination of them resulting from process of industry, manufacturing trade or business, or from the development of natural resources; however, gravel, sand, mud, or earth taken from its original situs and put through sluice boxes, dredges, or other devices for the washing and recovery of the precious metal contained in them and redeposited in the same watershed from which it came is not industrial waste;

(12) "low level radioactive materials" means a radioactive waste other than

(A) used nuclear reactor fuel;

(B) waste produced during the reprocessing of used nuclear reactor fuel; and

(C) elements having an atomic number greater than 92 and containing 10 or more nanocuries per gram;

(13) "manifest" means the form used for identifying the quantity, composition, origin, routing, and destination of a hazardous waste when the hazardous waste is transported;

(14) "mining waste" means solid waste from the extraction, beneficiation and processing of ores and minerals, including coal, and including phosphate rock and overburden from the mining of uranium ore;

(15) "motor vehicle" has the meaning given in AS 28.40.100;

(16) "other wastes" means garbage, refuse, decayed wood, sawdust, shavings, bark, trimmings from logging operations, sand, lime cinders, ashes, offal, oil, tar, dyestuffs, acids, chemicals, heat from cooling or other operations, and other substances not sewage or industrial waste which may cause or tend to cause pollution of the waters of the state;

(17) "person" means any individual, public or private corporation, political subdivision, government agency, municipality, industry, co-partnership, association, firm, trust, estate, or any other entity whatsoever;

(18) "pesticide" means any chemical or biological agent intended for preventing, destroying, repelling, or mitigating plant or animal life and any substance intended for use as a plant regulator, defoliant or desiccant, including but not limited to insecticides, fungicides, rodenticides, herbicides, nematocides, and biocides;

(19) "pollution" means the contamination or altering of waters, land or subsurface land of the state in a manner which creates a nuisance or makes waters, land or subsurface land unclean, or noxious, or impure, or unfit so that they are actually or potentially harmful or detrimental or injurious to public health, safety or welfare, to domestic, commercial, industrial, or recreational use, or to livestock, wild animals, bird, fish, or other aquatic life;

(20) "resource recovery" means the recovery of materials or energy from solid wastes for industrial use, agriculture, heat production, power production, or other processes or purposes and includes the reuse of materials or products to conserve natural resources;

(21) "restricted-use pesticides" means pesticides that are classified for restricted use under 7 U.S.C. 136a(d)(1)(C) (sec. 3(d)(1)(C), Federal Insecticide, Fungicide, and Rodenticide Act), as amended;

(22) "service" means a function performed or service provided by the state or by a municipality under a duty or power authorized by AS 29 or other provision of law authorizing a municipality to perform functions or provide services, or a comparable function performed or service provided by a village; "service" includes functions not previously performed and services not previously provided;

(23) "sewage" means the water-carried human or animal wastes from residences, buildings, industrial establishments, or other places, together with ground water infiltration and surface water as may be present; the admixture with sewage of industrial wastes or other wastes is "sewage";

(24) "sewer system" or "sewerage system" means pipelines or conduits, pumping stations, and force mains, and all other appurtenant constructions, devices, and appliances used for conducting sewage, industrial waste, or other wastes to a point of ultimate disposal;

(25) "solid waste" means all unwanted, abandoned, or discarded solid or semi-solid material whether or not subject to decomposition, originating from any source;

(26) "solid waste disposal facility" means a facility for the discharge, deposit, injection, consolidation, or placement of solid waste into or onto the land and includes transfer stations and sanitary landfills;

(27) "solid waste processing facility" means a facility for the extraction of materials from solid waste, volume reduction, conversion to energy, or other separation and preparation of solid waste for reuse or disposal and includes incinerators, shredders, balers, and transfer stations;

(28) "standard" means the measure of purity or quality for air, water, and land in relation to their reasonable and necessary use as established by the department;

(29) "storage" means the containment of hazardous waste, either on a temporary basis or for a period of years, in a manner that does not constitute disposal of the hazardous waste;

(30) "treat" has the meaning given "treatment" in 42 U.S.C. 6903(34);

(31) "treatment works" means a plant, disposal field, lagoon, pumping station, constructed drainage ditch or surface water intercepting ditch, incinerator, area devoted to sanitary landfills, or other works installed for the purpose of treating, neutralizing, stabilizing, or disposing of sewage, industrial waste, or other wastes;

(32) "village" means a place within the unorganized borough or within a borough as to a power, function, or service that is not exercised or provided by the borough on an areawide or nonareawide basis that

(A) has irrevocably waived, in a form approved by the Department of Law, any claim of sovereign immunity that might arise under this chapter; and

(B) has

(i) a council organized under 25 U.S.C. 476 (sec. 16 of the Indian Reorganization Act);

(ii) a traditional village council recognized by the United States as eligible for federal aid to Indians; or

(iii) a council recognized by the commissioner of community and regional affairs under regulations adopted by the Department of Community and Regional Affairs to determine and give official recognition of village entities under AS 44.47.150(b);

(33) "waste associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy" means (A) waste, including drilling muds, cuttings, hydrocarbons, brine, acid, sand, and emulsions or mixtures of fluids produced from and unique to the operation or maintenance of a well, whether naturally occurring or added for the operation or productivity of the well; and (B) waste that is derived intrinsically from primary field operations; "waste associated with the exploration, development, or production of crude oil, natural gas, or geothermal energy" does not include spent solvents and oils from equipment maintenance activities, discarded chemical products, or fuels;

(34) "waste derived intrinsically from primary field operations" means waste produced from a well, and removed

(A) at the drill site; or

(B) at crude oil production facilities by crude oil or wastewater treatment process before custody transfer of the crude oil;

(35) "waters" includes lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, straits, passages, canals, the Pacific Ocean, Gulf of Alaska, Bering Sea, and Arctic Ocean, in the territorial limits of the state, and all other bodies of surface or underground water, natural or artificial, public or private, inland or coastal, fresh or salt, which are wholly or partially in or bordering the state or under the jurisdiction of the state. (§ 3 ch 120 SLA 1971; am §§ 16, 17 ch 220 SLA 1976; am § 2 ch 26 SLA 1977; am § 2 ch 129 SLA 1977; am §§ 7, 12 ch 172 SLA 1978; am § 5 ch 163 SLA 1980; am §§ 7, 14 ch 93 SLA 1981; am §§ 115, 116 ch 59 SLA 1982; am § 9 ch 77 SLA 1984; am § 4 ch 97 SLA 1989; am § 62 ch 21 SLA 1991; am § 11 ch 83 SLA 1991)

Revisor's notes. — Reorganized in 1984, 1989, and 1991 to alphabetize the defined terms and to maintain alphabetical order.

Cross references. — For definitions of "electronic product," "electronic product radiation," and "radiation source" with regard to radiation protection, see AS 18.60.545; for additional definitions applicable to AS 46.03.822 — 46.03.823, see AS 46.03.826.

Effect of amendments. — The 1989

amendment, effective July 1, 1989, added paragraph (10).

The first 1991 amendment, effective June 11, 1991, repealed former paragraph (16).

The second 1991 amendment, effective June 28, 1991, added paragraphs (22) and (32).

Editor's notes. — Section 23, ch. 83, SLA 1991 provides that paragraphs (22) and (32), enacted by § 11, ch. 83, SLA 1991 "do not apply to a release of oil or a

hazardous substance and resultant cleanup activities or to efforts to respond to or abate that release if the release occurred before June 28, 1991."

Opinions of attorney general. — "Waters," within the meaning of para-

graph (33) (now paragraph (34)) of this section, clearly encompasses environments which are components of the marine ecosystem, but are not themselves subject to continuous inundation. November 13, 1975 Op. Att'y Gen.

NOTES TO DECISIONS

This chapter is not void for vagueness under the Alaska and United States constitutions. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

When the somewhat shadowy boundaries of the area of prohibited conduct were contrasted with the overall purpose of this chapter and the absence of any evidence of discriminatory application, the supreme court could not say that the presumption of constitutionality of the statute was overcome. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

As to purpose of this chapter, see *Stock v. State*, 526 P.2d 3 (Alaska 1974).

Definitional language of paragraph (19) incorporated in AS 46.03.710. — See *Stock v. State*, 526 P.2d 3 (Alaska 1974).

For waters to be polluted, there must first be a contamination or alteration. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

The alteration must create a nuisance. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

Or it must make the waters unclean, or noxious, or impure, or unfit so that they are actually or potentially harmful or detrimental or injurious (a) to public health, safety or welfare, (b) to domestic, commercial, industrial or recreational use, or (c) to livestock, wild animals, bird, fish or other aquatic life. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

The alteration must have a specific effect, resulting in water so impure that it is actually or potentially harmful to any one of the three categories listed in paragraph (19). *Stock v. State*, 526 P.2d 3 (Alaska 1974).

The term "alteration" is broader than contamination, as waters may be altered by purifying as well as befouling. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

And means "change". — Commonly understood, the word "alteration" means "change," and as here used, could encompass any change in the waters whether by taking away or adding substances. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

The term "nuisance" has a well established meaning at common law. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

The definition of "pollution" as applied to creating conditions that are "actually," as opposed to "potentially," harmful while admittedly broad in scope, appears to have sufficient clarity in all but de minimis situations. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

Foreseeability requirement imposed in cases of potentially harmful alterations of water. — By use of the word "potentially" in paragraph (19) in prohibiting potentially harmful alterations of water, this chapter prohibits acts which a reasonable person would foresee as creating a substantial risk of making water actually injurious to the statutorily protected interests. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

In "potentiality" cases, the state must hereafter prove that the threatened injury was foreseeable to a reasonable man in the position of the defendant at the time of the act or omission. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

The foreseeability requirement is no more than a narrowing construction. — The supreme court imposes it only to give this chapter definite enough standards to survive on its face and in future cases. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

Effect of foreseeability requirement. — A foreseeability requirement assures that fair notice is given to the defendant that his conduct is within the ambit of the statute. Such an element added to the definition of the offense also criminalizes only that conduct which is serious enough to warrant enforcement and conviction, thus discouraging discriminatory enforcement. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

Application of foreseeability requirement is prospective. — The supreme court could not find plain error in the district court's failure to anticipate and apply to defendant the narrowing construction of paragraph (19) and AS

46.03.710 which it orders for future cases. *Stock v. State*, 526 P.2d 3 (Alaska 1974).

Emptying lagoon of raw sewage into stream. — Whatever may be the outer boundaries of conduct prohibited by AS 46.03.710 as defined by paragraph (19), it

is beyond dispute that the emptying of a lagoon of raw sewage into a stream running through residential areas comes within the definition of the term "pollution." *Stock v. State*, 526 P.2d 3 (Alaska 1974).

ALASKA STATE LEGISLATURE

House of Representatives

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ADMINISTRATIVE REGULATION REVIEW, VICE CHAIRMAN
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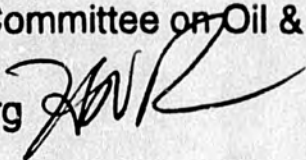
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Representative Norman Rokeberg

MEMORANDUM

TO: Members of the House Special Committee on Oil & Gas

FROM: Representative Norman Rokeberg 

DATE: February 19, 1996

SUBJECT: HB 342 - An Act relating to water quality

Attached is a copy of a sponsor statement for HB 342. The packets for this bill were prepared and distributed last September. If you have any questions please contact myself or my staff person, Shirley Armstrong at 465-4968.

ALASKA STATE LEGISLATURE

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Representative Norman Rokeberg

SPONSOR STATEMENT

HB 342 - "An Act relating to water quality."

HB 342 is a bill that attempts to provide certainty to members of the public and industry on the water standards that will be applied to the users of water.

Secondly, the bill provides the same direction to the Departments of Environmental Conservation, Fish & Game and Natural Resources that the commissioners may not require a higher standard for discharged water than the existing water used.

Thirdly, it establishes the volumetric Imhoff Cone method as the criteria for establishing a discharge water quality standard for the measurement of sediment.

Fourthly, it directs the commissioner to establish a standard that reflects a range of values that are satisfactory for downstream water uses.

Lastly, the standard developed for water quality cannot be more restrictive than applicable federal water quality standards.

I urge the support of the committee to provide certainty to the public in enforcement of Alaska's water quality requirements.

**ALASKA OIL AND GAS ASSOCIATION
POSITION ON
HB 342, WATER QUALITY STANDARDS**

The Alaska Oil and Gas Association (AOGA) is a trade association whose 19 member companies account for the majority of oil and gas exploration, production, transportation, refining and marketing activities in Alaska.

AOGA supports the goal of HB 342 to establish reasonable, economically achievable, and scientifically based State water quality standards that are no more stringent than federal standards unless, on a case by case basis, scientific evidence justifies more stringent state regulation.

Specifically, AOGA supports legislation that provides for the following:

State regulations and standards to be consistent with federal requirements;

If circumstances warrant state standards which are more restrictive than federal requirements, a definitive process for evaluating the need for a more stringent standard which considers science and economics;

Efficient amendment of state regulations to match changing federal regulations;

Regulations that specify only EPA-approved measurement methods;

Allowance for discharge waters to match the quality of receiving waters

Presently the state is required to amend its regulations only when changes to federal regulations result in standards which are *more* restrictive than those of the state. To ensure consistency with federal regulations, the state also should be required to amend state standards when changes occur to federal regulations which result in *less* restrictive standards, or when provisions are deleted from federal regulations. There should be an efficient means for agencies to modify existing state regulations to effect this requirement.

Federal regulations should be the basis as well as the boundary for state regulations. In the event that there is a legitimate need for more stringent state regulations, an impartial scientific peer review should be established. In addition, there should be established review criteria, which considers science and economics, for evaluating the merit of the argument for having state regulations that would be more stringent than federal requirements.

Finally, an appeal process should be provided that allows the regulated community to challenge state regulations on the basis that a state regulation is more stringent than federal requirements. That process should involve a review panel comprised of representatives other than the agency issuing the regulations in question.

Message from the Executive Director

by Becky L. Gay

Water quality standards: A good faith effort

After six years trying to complete a so-called triennial review for Alaska's water quality regulations, Governor Knowles and Commissioner Gene Burden tried something a little different last month. After an exhaustive administrative review of the regulations and in order to move away from the rhetoric of opposition, a threatened lawsuit, and other obstacles to resolution, a friendly "hostage-taking" took place at the Governor's office in Juneau.

Taking two representatives of each "side," specifically RDC and the Alaska Oil and Gas Association along with Clean Water Alliance and Sierra Club Legal Defense Fund, and a full complement of DEC staff, Governor Knowles stuck us in his conference room for six hours to get beyond the impasse which has been frustrating all sides. The Commissioner briefed us on what the Knowles administration actions would be, the reasons for those actions and asked for honest debate and hopefully, agreement on moving forward.

None of us were totally pleased, but I believe all were pretty surprised that the Governor could get us moving in the same direction. It was a good faith effort and with a little perseverance, the water quality standards will work. They need to give certainty to the regulated community, be technologically achievable and economically feasible and not be challenged in court.

The adoption draft for revisions to the water quality standards for anti-degradation, treatment works and pe-

troleum hydrocarbons was recently signed by Commissioner Burden and is now at the Department of Law for review. *The actions taken are:*

Anti-degradation: The administration determined the absence of such a regulation was a deficiency, as the original standards did not include this aspect. Since it was added in final administrative review, this regulation was not subject to the same extensive public scrutiny, but is identical to federal law. *Action: State adopted additional anti-degradation provisions which specifically protect "out-standing national resource waters."*

Treatment works: Under review, DEC determined that treatment works in natural waterbodies (sewage lagoons, tailings impoundments, etc.) are permitted under solid waste and domestic water programs and were therefore redundant if included in the water quality regulations. *Action: Repealed.*

Petroleum hydrocarbons: Much of the debate surrounding oil or diesel limits in wastewater discharges is focused on measurement methodology and analysis found in "Note 8" of the current regulation. DEC is amending the regulation to clarify required measurements. *Action: DEC repealed the current Note 8, instead adopting August 1993 version of Note 8. DEC will further research need for a numerical particulate standard by July 1996.*

Human health risk: The array of variables used to determine a risk level were debated, reflecting concerns about the importance of "Alaskanizing" specific values. The present Alaska standard of 10^{-5} was retained using federal values, in direct response to federal law. *Action: DEC retained current level and will initiate rulemaking to determine Alaska-specific values.*

Sediment: Most of the discussion

on sediment was whether settleable solids or total suspended solids (TSS) should be the standard. Since there is no criteria for TSS in EPA, a significant factor supporting DEC's regulation is that testing for settleable solids uses simple field equipment and procedures. *Action: DEC retained the existing regulation, clarifying settleable solids as the regulated parameter, agreeing to study and report on the need for a TSS standard by July 1996.*

Mixing zones: Mixing zones are designated areas of a waterbody in which wastewater enters and mixes with a receiving water, diluting the discharge within the zone, but meeting water quality standards at and beyond the zone boundaries. DEC noted the current regulations provide better controls by setting stricter standards and addressing fresh water rivers and streams. *Action: DEC will prepare interim guidance and initiate rule-making and complete guidance by April. DEC retained authority to grant or deny mixing zones based on factual data presented.*

Of all the issues debated, mixing zones were held out for the most additional scrutiny. It is RDC's understanding that the next round of discussions will include all users of mixing zones and be open to the most technical data possible. Additional aspects under consideration are size limits, toxics and lethality. Marine mixing zones will also be included in the discussion, although the regulations under review dealt with fresh water. Existing mixing zones will remain, and all efforts will be made to ensure no unintended side-effects occur.

A summary of the actions taken are available at RDC and DEC. Please call me directly and I will make sure your concerns are advance to the appropriate level.

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April 22, 1996

STATEMENT OF SUPPORT - CSHB342 (RESOURCES)

The Alaska Oil and Gas Association supports CSHB342 as passed by the House Resources Committee on April 19, 1996. This legislation will provide the basis for the State of Alaska to have reasonable, economically achievable and scientifically-based State water quality standards that are no more stringent than federal standards, unless, on a case by case basis, scientific evidence justifies more stringent state regulations. It also provides an efficient mechanism for amending the state's regulations when federal requirements change, and allows ADEC to take into account the natural condition of waterbodies when setting discharge standards in permits.



Resource Development Council for Alaska, Inc.

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April 22, 1996

Representative Norm Rokeberg, Sponsor
and members of the Alaska State House
State Capitol
Juneau, AK 99801-1182

Dear Representative Rokeberg,

RDC supports CS for HB 342 (Resources), "an Act relating to water quality," which strengthens the Alaska mandate for economically-feasible and technologically-achievable state water quality standards.

Presently states are required to amend regulations to match federal regulations only when federal regulations become more restrictive. This is a one-way street. CS for HB 342 legislates a similar requirement to adjust state standards when federal changes result in less strict standards, or when federal mandates are deleted from law.

It should be understood that the State may still set stricter standards, but this legislation will encourage a pro-active response automatically and a review of such a decision. For those few cases where the State argues for a standard stricter than federally required, this bill also establishes a methodology for evaluating the merit of such an argument.

RDC supports CS for HB 342 for the additional provisions:

- An efficient "change mechanism" for agency response to consistency with federal regulations;
- A professional and definitive process for evaluating any conclusion which results in state standards being set stricter than federal requirements;
- An allowance for discharge waters to match the quality of the receiving waters strengthening DEC's resolve to use natural background levels as the standard when natural levels exceed the State standard, as is often the case in Alaska;
- Specifying EPA-approved measurements, in particular the volumetric Imhoff Cone method which strengthens the Department of Environmental Conservation's (DEC) current policy on settleable solids measurements.

RDC urges the Legislature to vote positively on this important bill in time to be successful this session.

Sincerely,

RESOURCE DEVELOPMENT COUNCIL
for Alaska, Inc.

Becky L. Gay
Executive Director

copies to RDC Board, AMA, AOGA and member communities



2173 University Ave. S., #101
Fairbanks, AK 99709
907-474-2080
Fax 907-474-2082

FAX TRANSMITTAL

TO: Representative Norman Rokeberg DATE: 4/24/96
ORG.: State House of Representatives
CITY: Juneau, AK NO.: 907-465-2040

MESSAGE

As Chairman of the Fairbanks Branch of the Alaska Miners Association and Project Manager for Ryan Lode Mines, I wish to express support for CSHB343 "An Act relating to water quality" with the changes suggested by Steve Borell, Executive Director of the Alaska Miners Association on this date. Your efforts in addressing the water quality issue is greatly appreciated.

Yours truly,

Richard A. Hughes, P. E.
Project Manager



Resource Review

March 1995

A monthly publication of the Resource Development Council, Inc.

Retain existing water quality standards

Utility rates across Alaska could increase an average of 400 percent if the state increases the human health risk level from 1 in 100,000 to 1 in 1 million. While the benefits are hardly measurable, the costs are enormous

By Becky L. Gay and Carl Portman

The Resource Development Council and a broad coalition of businesses, individuals, organizations and local communities, are gearing up to defend the state's water quality standards, signed into law in December, but now the subject of a controversial administrative appeal and subsequent public hearings.

The Alaska Coalition for Responsible Water Quality Management is

watching the review process closely and has offered additional science and cost-benefit data defending the existing regulations. The coalition includes the communities of Anchorage, Fairbanks and Juneau, as well as water and wastewater utilities and resource producers, ranging from oil, mining and forest product companies to seafood processors. The Coalition supports the existing regulations and believes they ensure protection for Alaskans without placing un-

necessary and overwhelming restrictions on development.

Department of Environmental Conservation Commissioner Gene Burden re-opened the water quality issue in response to a petition filed by the Sierra Club Legal Defense Fund (SCLDF). The environmental law group is seeking to repeal or suspend five provisions in the regulations: Human health risk levels, mixing zones, treatment works, sediment and petroleum hydrocarbons. Hearings on the regulations were held in Anchorage, Fairbanks and Juneau in March and the public comment record is open until April 19.

SCLDF had threatened to sue to block the regulations, but the Knowles administration convinced the group to pursue the administrative appeal route. Under the administrative appeal, the regulations will stay in effect until the issues are settled. Burden emphasized that DEC's decision to re-open the regulations to further public comment does not mean the state is ready to sign off on the petition.

Sections of the regulations to be re-opened are limited to the five areas challenged in the petition, but DEC intends to use the review period to propose an anti-degradation provision, which was not a part of the regulations.

(Continued to page 4)



A change in the Alaska water quality standard risk level of 1 in 100,000 to 1 in 1 million and/or a loss of mixing zones would drive dischargers into advanced metals removal for wastewater. In Juneau, utility rates would increase by 293% with customers paying an additional \$138 per month for sewer service. See page 5 for rate impacts across Alaska.

(Photo by Carl Portman)

RDC urges ADEC to reject petition, retain water quality standards

(Continued from page 1)

The water quality standards are used as a basis for limits in wastewater discharge permits issued to industries and local communities. The existing standards were the product of an intense, five-year public process which included 12 public hearings, two statewide teleconferences, two public comment periods running 213 days and three two-day meetings of a State Water Quality Standards Advisory Group. The regulations were signed into law in December, but shortly after they became effective, the environmental group's petition was filed.

RDC members were very active in the prior round of hearings and testimony. The public record clearly showed widespread support for the regulations.

RDC believes there should be some finality to the regulatory process and has told Commissioner Burden that after all the effort expended by all sides in this debate, it seems unreasonable to go through the process again.

Compounding the water quality issue is the historic decision to classify all waters in Alaska to the highest use, namely drinking water and aquatic life, regardless of activity or reality. Due to the lack of money to sample, characterize and classify thousands of waterbodies, the state made the most stringent choice, creating some strange regulatory situations.

For instance, taken literally, if you poured a glass of drinking water from most Alaskan communities into a natural waterbody, you would be violating current discharge standards.

RDC is distributing briefing papers on water quality for those who want more detailed information. Here are summaries:

Human health risk: The present Alaska standard is 10^{-5} , which sets the risk level at 1 in 100,000. In this debate,

risk is calculated from an array of variables and reported as the potential chance of getting cancer from some source, namely ingesting polluted water or fish. (The statistical risk of dying from cancer in the U.S. is about 1 in 4, or 25,000 per 100,000.)

Because of the conservative assumptions used in risk assessment, the actual individual risk for most Alaskans is much lower, since people move from place to place and very little fish they eat are contaminated. Here's the catch: the 1 in 100,000 risk level is based on people eating contaminated fish for 70 years. Moreover, the contaminated fish would have had to spend its life at an industrial or municipal wastewater outfall — an unrealistic assumption.

While the risks are estimated, the costs are certain and will either be borne by the taxpayer for upgrades to public sewage systems, or by the consumer for upgrades to industrial systems. The Municipality of Anchorage estimates that sewer utility rates would increase 407 percent if the State increases the human health risk level to 1 in 1 million. The average utility rate increase across Alaska would be approximately 400%.

Those advocating the stricter 1 in 1 million standard reflect a broader public perception about risk. This perception demands that large amounts of resources and attention be devoted to alleged dangers that are speculative and small. This is particularly disturbing in light of the fact that in Alaska lack of rural drinking water and sanitation systems pose the greatest threats to public health.

EPA gives states discretion to set risk levels between 10^{-5} and 10^{-7} (1 in 10 million). But, local communities, utilities and industries say the higher risk standard of 10^{-6} (1 in 1 million) is impossible to meet, noting that states with the higher standard are granting administrative exemptions in discharge permits

Alaska standards are technologically achievable and economically feasible

RDC urges its members to submit comments supporting the existing water quality standards, which took effect in December. Submit comments to: Water Quality Management Section, AK Dept. of Environmental Conservation, 210 Willoughby Avenue, Suite 100, Juneau, AK 99801-1795, or fax to 907-465-2274.

ACTION

Main Point:

- Urge DEC to retain the existing water quality regulations and reject the petition filed by the Sierra Club Legal Defense Fund.

Other Points:

- The existing regulations afford a sufficient level of protection for Alaskans without placing overwhelming restrictions on development.

- The 1 in 100,000 risk level adopted by DEC protects human health.

- The mixing zone provisions are critical for communities and industries.

- The newly-adopted Treatment Works definition is necessary for all Alaskan municipalities and industries responsible for waste treatment. It should be retained as adopted by the department.

- The petroleum hydrocarbons, oil and grease standards adopted by DEC are a good first step toward resolving concerns and should be retained to serve as a starting point for discussions to be held during Phase II of the water quality standards review.

- The proposed antidegradation policy should be withdrawn from this process and should be included in Phase II of the state's triennial review process.

Please write a brief letter today. The opposition has launched a major campaign demanding that the current regulations be repealed.

Rate impact of advanced metals removal for wastewater

Utility	Current Revenue Requirement	Current Sewer Rate	Type of Treatment	Capital Cost for advanced treatment	Additional Revenue Required* for advanced treatment	Percent Rate Increase	Projected Monthly Rate
Anchorage	\$22,607,000	\$21.65	Primary	\$346,807,000	\$91,941,000	407%	\$109.70
Fairbanks	6,370,000	24.45	Secondary	54,948,000	16,845,000	264%	89.11
Juneau	4,149,000	35.35	Secondary	40,380,000	12,145,000	293%	138.83
Kenai	850,000	41.00	Secondary	11,244,000	2,745,000	323%	173.41
Ketchikan	1,296,000	24.15	Primary	36,133,000	7,431,000	573%	162.62
Kodiak	1,633,000	32.20	Secondary	22,170,000	6,270,000	384%	155.83
Nome	533,000	32.00	Secondary	7,602,000	1,570,000	295%	126.26
Sitka	1,033,000	24.00	Primary	33,726,000	6,843,000	662%	182.92

*Includes debt service (10% of capital cost)

A change in the Alaska water quality standard risk level of 1 in 100,000 to 1 in 1 million and/or a loss of mixing zones would drive dischargers into advanced metals removal for wastewater. The construction and operation of advanced metals removal facilities are extremely expensive and the technology generally unproven.

because dischargers simply cannot comply. The existing 10^{-5} standard already requires sampling accuracy for some constituents beyond the limits of testing equipment; in many cases this standard is ten times more stringent than naturally-occurring background levels of various substances in state waters.

Mixing zones: Municipalities, as well as industries, including mining, timber, fish processing, and oil and gas rely on mixing zones. Mixing zones enable a discharger to use the natural assimilative capacity of a receiving water while satisfying water quality regulations in a feasible, safe and cost-effective manner outside the zone. Mixing zones are a legal provision recognizing standards can be accommodated within a predictable and acceptable distance from the point of discharge. Allowing mixing zones is an essential regulatory rule for site-specific situations. The new standards provide comprehensive requirements for extensive analysis prior to DEC authorization of fresh water mixing zones and prohibit mixing zones in certain circumstances. These regulations are significantly more restrictive than the previous regulations, and repealing them would be a step backward.

As an example, elimination of mixing zones in Cook Inlet would require a zero discharge of process waters, affecting fish processors and Cook Inlet communities, including Anchorage. For the oil and gas industry, estimates of

It does not make sense

• It does not make sense for water quality standards to be so restrictive that discharges must be cleaner than natural water.

• It does not make sense for Anchorage to spend nearly \$350 million to construct an advanced metals removal facility to remove one pound per day of arsenic, at a cost to Anchorage ratepayers of \$110 per month, when Knik Arm contains over 10,000 pounds of natural arsenic that has no impact on aquatic life.

• It does not make sense to establish more restrictive limits for Alaska than EPA recently recommended as being necessary for protection of people around the Great Lakes.

• It does not make sense to blindly follow the bad examples set by Idaho, Washington and Oregon who adopted 1 in 1 million risk limits and now have a convoluted permitting process because no dischargers can meet the limits.

the cost of reinjection of the process waters is over \$50 million. According to Wylie Barrow, General Manager of Unocal, the Trading Bay Field and McArthur River Field would be prematurely abandoned, resulting in the loss of 875 oil industry and service company jobs, \$87,474,300 in state royalty and taxes, and \$581,000,000 in gross revenues.

Hydrocarbons, oil and grease limits: In the general sense, petro-

leum hydrocarbons and oil and grease are just as they sound to the lay person. For regulatory purposes, it gets much more complex, looking at the individual components that make up the hydrocarbons, oil and grease.

The existing requirements adopted by DEC limit hydrocarbons to those that would pose significant potential environmental impact. More sensitive detection and reporting limits are included, and the numeric criteria for hydrocarbons remain the same as in earlier regulations.

Essentially all water discharges are affected by the hydrocarbon limits in the existing standards. If standards become even stricter, every stormwater or municipal discharge (without a mixing zone) will be in violation. The cost of compliance would be exorbitant with minimal environmental improvement. Enforcement will be costly and selective, since even small boat harbors will be out of compliance.

Treatment works: Water-borne wastes may, in some cases, be held in constructed "treatment works" for purposes of treatment and disposal. Treatment works may include mine tailings impoundments, sediment settling ponds, sewage lagoons, cooling water ponds, landfill containments and other waste treatment facilities. Treatment works in natural water bodies are primarily used four ways throughout Alaska.

(Continued to page 6)

Alaskans must understand implications, costs and benefits of water quality standards

(Continued from page 5)

• **Village treatment systems:** Village systems commonly use nearby lagoons or ponds for naturally aerated treatment. If natural waterbodies or impoundments in natural drainages could not be used for treatment works, approximately 30 to 50 small wastewater treatment systems in the state may require modification to more complex mechanical treatment systems. Capital and operating costs for more sophisticated mechanical systems in Alaskan villages have proven prohibitive.

• **Stormwater runoff:** Treatment of stormwater runoff by use of detention ponds for municipal, other governmental and industrial sites is a common practice. The practice is identified by the Environmental Protection Agency and by most state regulations as the best management practice (BMP). Treatment of stormwater by other means is normally not economically feasible.

• **Mining:** Uses treatment works in the form of settling, sediment and tailings ponds.

• **Fish processing and hatchery systems:** Both discharge untreated wastes into water bodies designated as waters of the state or the United States.

Urban and rural Alaska face different options and costs for complying. For instance, the Municipality of Anchorage estimates capital construction costs of \$347 million and ongoing operation and maintenance costs of \$92 million per year for complying with the proposed changes to the water quality standards at the city's major treatment works. The monthly user rate would increase from \$22 to \$110.

In rural Alaska, the cost of installing a mechanical system is estimated to be between \$2 million and \$10 million with operating and maintenance costs running between \$200,000 and \$400,000 annually. Cumulative capital costs for treatment alone could exceed \$900 million with additional annual operation and maintenance costs exceeding \$20 million.

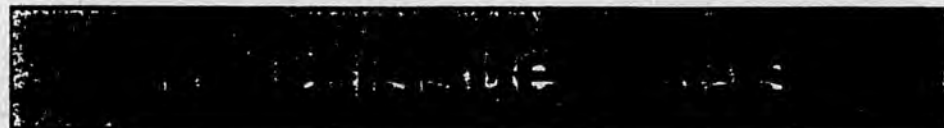
Sediment: The recently-adopted sediment standard relies on a combination of settleable solids and turbidity to regulate sediment loads. The standard also provides for the use of a simple, recognized field procedure to measure settleable solids. Rapid determination of discharge quality can be used for control of treatment and discharge timing. Within an hour, a discharger or an agency can determine compliance or violation of a standard, versus an alternative method which would require three to four weeks of laboratory analysis.

Anti-degradation: Since this was not part of the years of public hearings and other work, RDC believes this important aspect deserves more study and consideration and should not be

held to the same administrative time line as the adopted regulations. Many people are confused, for example, about the difference between anti-degradation and "anti-backsliding," which have important distinctions in the regulatory arena.

RDC supports the current water quality standards, which are the result of years of work, discussion, debate and testimony. RDC was one of many groups which spent many hours with its membership, the public and the Administration working to shape water quality standards which are technologically and economically feasible for Alaska. Shouldn't we give them a chance to work?

Editor's Note: Briefing packets on this issue are available at RDC. Call 276-0700 for a copy.



Salvage timber bill advances

Legislation that would change state law to allow loggers quicker access to trees that will lose substantial economic value due to disease or fire, has passed the Senate and at press time was moving to Governor Tony Knowles' desk, pending House concurrence of Senate changes.

RDC supports HB 121, known as the salvage timber bill. RDC believes the bill will serve as a vital forest management tool to help manage dead and dying forest in Alaska. HB 121 would give DNR the ability to accelerate its timber sale program for insect-damaged trees.

The state currently is required to list targeted stands on a five-year plan for at least two years before timber can be offered for sale. Even if the timber is threatened with disease or infestation the wood can't be sold and cut. The legislation would allow the DNR commissioner to waive the two-year requirement after determining a particular stand of trees is likely to lose substantial value if not cut within two years.

Time is a critical factor in harvesting dead or dying timber and reforesting infested stands. HB 121 would allow the private sector to respond in a timely manner to harvest dead trees and reforest infested areas before the trees deteriorate to an uneconomic level. After about two years of spruce bark beetle infestation, there is insufficient value in the forest to meet the costs of reforestation, as well as the costs of the sale and the infrastructure required for harvests.

In response to misinformation on the bill, RDC noted that HB 121 would not exempt salvage timber sales from public review nor eliminate public planning for lands and resources. Moreover, HB 121 does not exempt timber sales from reforestation provisions of existing state law.

RDC urges its members to write the Governor in support of HB 121.

(Continued to page 7)

Water quality standards and the arsenic cancer risk

Editor's Note: The Montana Legislature passed several bills revising the state's water quality standards and requiring that treatment standards be economically, environmentally and technologically feasible. Legislation passed by the Montana Legislature and supported by Governor Rasicot revised the human health risk level from 1 in 1 million to 1 in 100,000 and adjusted the standard for arsenic from 1 in 1 million to 1 in 1,000 risk. The revisions were made after local communities and businesses throughout Montana were unable to obtain waivers from stricter standards which were economically and technologically infeasible.

By Senator Lorents Grosfield
Chairman, Montana Senate
Natural Resources Committee

Second of two-part series
(Edited for space)

One of the troubling policy questions that we must continually weigh is, how "clean" does "clean" need to be? If we are discharging water into a stream, should "clean" mean as close as we

can get to totally pure? Should it mean cleaner than the water naturally occurring in the stream? Should it mean as clean as the water we're discharging into? Should it mean clean enough to meet all the water quality standards that have been set to protect our health and environment?

Take Anchorage, Alaska, a city of about 250,000 people. Recently it was discovered the discharge into Cook Inlet from the municipal sewage treatment facility contained too much arsenic to meet the standard. An analysis of the problem revealed that it would cost the city \$970 million to upgrade its system in order to eliminate enough arsenic to meet the standard. That's over \$12,000 for every family! The amount of arsenic to be eliminated was about one pound. But further investigation revealed that literally hundreds of pounds of arsenic already arrives naturally from the various rivers that flow into Cook Inlet and from the tide coming in from the ocean. Given that hundreds of pounds are already arriving naturally, what possible sense would it make for the city to tax its citizens enough to pay the \$970 million to eliminate one pound from the city's discharge? Could it be perhaps that the standard is flawed, or at least needed an exemption to deal with the specific Anchorage situation?

It's important to remember that water quality standards have not been cast in stone by some supreme being. Environmental science is not an exact science and none of these standards are "infallible."

Take Senate Bill 331 and the issue of Montana's water quality standard for arsenic. Arsenic is a known cancer causing agent. But there are at least four major points that need to be understood.

First, SB 331 changed the standard for arsenic from being based on a one-in-a-million increased lifetime cancer risk to a one-in-a-thousand increased risk. Does this mean that the Legislature has increased the cancer risk 1,000 times? Absolutely not.

At a one-in-a-million increased risk, the Montana water quality standard for arsenic in Montana streams and rivers

before SB 331 was 0.018 parts per billion (18 parts per trillion). But the EPA drinking water standard is 50 parts per billion (50,000 parts per trillion). This means that our old standard for streams and rivers was 2,778 times more restrictive than the federal drinking water standard!

The new one-in-a-thousand cancer risk standard in SB 331, for discharges to our rivers, streams and groundwater, figures out at 18 parts per billion, which is still almost three times stricter than the federal drinking water standard of 50. But what is even more telling are the relatively high levels of arsenic that occur in most Montana streams naturally. For example, the average arsenic in the Missouri River at Toston from natural sources is about 24 parts per billion. With this level of arsenic naturally occurring in the river, there is no increased cancer risk in the upper Missouri River by moving the standard from 0.018 to 18. Why? Because the standard is still less than what's there naturally.

Granted, not all Montana streams have as much naturally occurring arsenic as the Upper Missouri. The average natural arsenic in the Yellowstone River at Livingston is about 21 parts per billion. By the time the Yellowstone reaches the North Dakota border, it is down to about 7. But in the Madison River at West Yellowstone, the natural arsenic level is about 260 parts per billion!

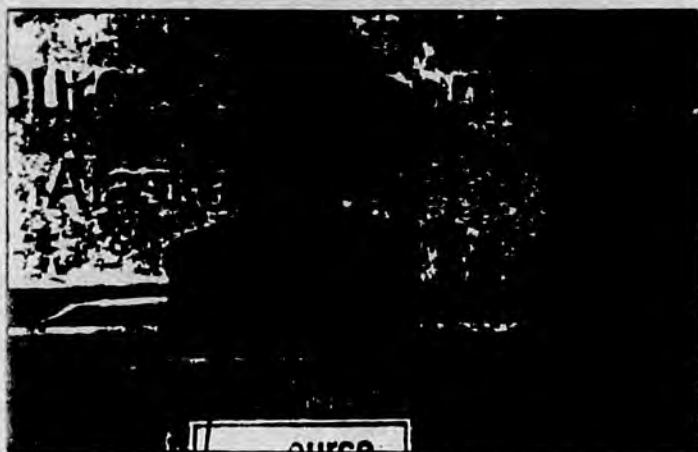
Remember, with our standard now at 18, we are still nearly three times stricter than the federal standard of 50, which like all federal drinking water standards, already has a significant safety margin built into it.

The second point is that fish are not as sensitive to arsenic as humans. Changing the standard to 18 will have absolutely no effect on fish. The arsenic standard set for healthy fish is 190 parts per billion; that is, below this level, fish will not be affected at all, and it's not until continual exposure for a week or more at a level of 360 parts per billion that fish will actually die.

The third major point is that we

(Continued to page 5)





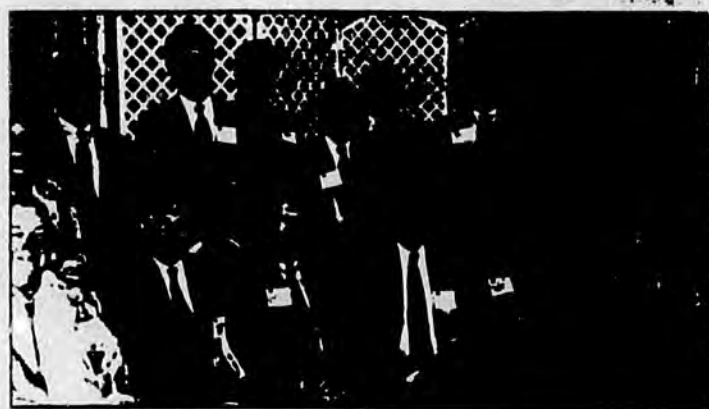
Congressman Don Young, Chairman of the House Resources Committee, enjoys a warm welcome before the large luncheon crowd at the RDC Annual Meeting. Young addressed new opportunities for Alaska in the new Congress.



Outgoing President Dave Parish receives a "First Barrel of Oil" plaque from President Elizabeth Rensch for his outstanding service to RDC. Parish first came to RDC ten years ago as a student intern during summer break from college.



RDC board member John Forceskie, President of Teamsters Local 959, receives special recognition and a plaque from RDC's outgoing President Dave Parish. Forceskie, who retires from the Teamsters this month, served as Vice President of RDC for eight years, longer than any other board member in that office.



At upper right, members of RDC's new Executive Committee pose for the camera. At bottom right, Gail Phillips, Speaker of the Alaska House, presents Eielson Junior High School student Katrina Balash with a certificate for her winning essay in the RDC Statewide Essay Contest. Katrina's essay addressed "The Role of Resource Development in Alaska's Economy." The winner in the high school category was Skagway's Lisa See who focused on "Opening ANWR."



Montana strives for reasonable water quality standards

(Continued from page 2)

cannot, even given present technologies, reliably measure arsenic at less than 3 parts per billion. Now, if 0.018 parts per billion is not measurable, it's not detectable, and if it's not detectable it's certainly not enforceable.

The fourth point pertains to the creation of the old standard at 0.018 parts per billion. It was based on a Tai-

wan study showing that a person living in Taiwan had a one-in-a-million increased chance of getting cancer IF that person drank 2 liters of water per day from that same "contaminated" source of supply each consecutive day for 70 years and ate an average of 6.5 grams of fish caught from that same source of supply each day for 70 years.

If a person were to do these things, that person would have a one-in-a-million increased chance of getting cancer.

Given all this, was it reasonable to have a standard set at 0.018 parts per billion in the first place? Is it reasonable to have a water quality standard for discharges to streams and groundwater set at a level 2,778 times

stricter than the federal drinking water standard? It reasonable to have standards we cannot even measure? Is it reasonable to have standards set at a level substantially below the condition that nature provides naturally?

Don't forget who pays for the implementation of these standards.

ARCO, BP

North Slope producers were upbeat in their assessment of Alaska's potential at the Jan. 21 "Meet Alaska" conference. ARCO told of new work on West Sak; BP talked about its prospects at Milne Point and Badami. Much of the optimism stems from perceptions of a new relationship with state government. (Page 2)

Alyeska Pipeline

Alyeska Pipeline submitted its final plan for its Valdez vapor control project to EPA, and is optimistic about early approval. (Page 3)

Governor

Commerce Commissioner Hensley says Gov. Knowles was encouraged over his meetings with industry in Los Angeles and Houston, and plans meetings in London in March. Knowles wants to listen to industry concerns as well as sell the companies on the state's oil priorities. (Page 3)

Legislature

State Sen. Loren Lemar will hold hearings of his Senate Resources Committee Feb. 1, looking for ideas on ways the state can encourage new oil and gas investment.

House Resources chair Rep. Joe Green predicts his committee will also deal with oil and gas incentives. (Page 5)

INSIDE



Published By The Alaska Oil & Gas Association

Vol. 2, No. 2 • January 26, 1995

Environmental groups file appeal

Water quality regs open again

Dept. of Environmental Conservation Commissioner Gene Burden has reopened issues in new state water quality regulations signed into effect by former DEC Commissioner John Sandor in early December, in response to a petition filed with DEC Jan. 12 by the Sierra Club Legal Defense Fund. SCLDF was acting on behalf of the Alaska Clean Water Alliance, United Fishermen of Alaska, and Alaska Wilderness Recreation and Tourism Assoc. Hearings on the regulations will be held in Juneau, Anchorage and Fairbanks, the commissioner said. DEC officials are making efforts to assure people that the fact that the regulations have been opened for further hearings does not mean DEC is ready to sign off on positions put forward by the environmental law group.

SCLDF had threatened to sue to enjoin the regulations but State Attorney General Bruce Botelho talked the group into taking the administrative appeal route. (The Knowles administration did not want to be slapped with an environmental lawsuit in its first days in office, even though the issues were linked to the previous administration.) Under an administrative appeal, the regulations being questioned stay in effect until issues are settled one way or another. If an action for an injunction were filed, and succeeded, the regulations would be shelved. Sources in the Knowles administration said there were no "guarantees" given SCLDF by state attorneys, but that there was an "expectation" there would be opportunity for further comment on the regulations, i.e. that the appeal would not be denied. *Continued on Page 8*

Oil and Gas Director Eason's resignation accepted

The Knowles administration accepted the resignation of Jim Eason, veteran director of the Division of Oil and Gas. All division directors were asked to submit their resignations. Eason served the division for 14 years through four state administrations and nine Commissioners of Natural Resources. While sometimes at odds with the industry, Eason was a strong defender of the state's interests.

Environmental law group challenges state's water quality regulations

Continued from Page 1

SCLDF's appeal challenged five areas in the regulations: (1) exemption of water "treatment works" from standards; (2) sediment criteria, to cover only settleable, and not suspended, solids; (3) criteria for Total Hydrocarbons; (4) criteria for mixing zone authorizations; and (5) human health risk level. The human health "acceptable" risk level of 1 additional case of cancer in 100,000 population, instead of 1 in 1 million, was the most controversial part of the new regulations. Commissioner Burden has asked DEC staff to prepare a justification as to why the 1 in 100,000 standard is the preferable standard for Alaska. Sections of the regulations to be reopened are limited to the five areas challenged in the SCLDF's petition. In addition, the department intends to use this opportunity to propose language dealing with antidegradation, which was excluded from the final regulations at the suggestion of the attorney general, who expressed concern that the public had not had adequate opportunity to comment on that specific section. The 60-day comment period is expected to commence Feb. 13, when copies of the formal package will be available to the public.

Upcoming events

February 13, 1995: Revised deadline for comments on proposed revisions and additions to the Classification of State Agency Approvals ("ABC" list). Comments should be submitted to Chas Dense, DGC, P.O. Box 110030, Juneau, Alaska 99811-0030. Phone: 1-907-465-3562.

February 17, 1995: Deadline for submission of recommendations for changes to Air Quality Control Regulations. Comments should be submitted to John Stone, ADEC, 410 Willoughby Avenue, Suite 105, Juneau, Alaska 99801.

Alaska Oil and Gas Association
121 West Fireweed, Suite 207
Anchorage, Alaska 99503



Greater Fairbanks Chamber of Commerce
709 2nd Ave., Fairbanks, AK 99701
(907) 452-1105

Issue No. 5
March 10, 1995

Fairbanks Spared in Base Cutting

Fairbanks' wide open spaces are a rare and highly desirable commodity from the military point of view, Maj. Gen. Thomas Needham told the Fairbanks chamber at their General Membership Luncheon Feb. 28.

Needham spoke to the Fairbanks chamber the same day that the latest round of base closures and realignments was announced by the Department of Defense, but the news for Fairbanks was mostly good.

"It's not easy talking to a chamber of commerce on the day the secretary (of the Department of Defense) announces base cutbacks and closures," Needham said.

Fort Wainwright, Needham said, would be spared further cuts for the foreseeable future and may actually gain some military and civilian personnel due to the transfer of responsibilities and personnel from Fort Greely near Delta Junction.

"According to the announcement made by the secretary, Fort Greely will become a sub-post of Fort Wainwright," Needham said.

The Department of the Army has decided to transfer Fort Greely's Northern Warfare Training Center and Cold Region Testing Center to Fort Wainwright. Along with the new responsibilities, Fort Wainwright will gain approximately 205 military and 56 civilian positions, according to the Department of Defense.

According to a Department of the Army report, the move will cost Delta Junction, the town closest to Fort Greely, 969 jobs or 36 percent of the area's employment base between 1996 and 2001. Direct employment by the military accounts for 724 of those jobs and the other 245 are "indirect" employment created as a collateral effect of military activity.

"It's too early to tell how many," Needham said. "Cooks can be moved pretty easily, but it is harder

to move a power plant."

Needham said it is still too early to say whether the move will mean more civilian jobs for Fairbanksans working on construction of new facilities. He did, however, point out that while defense contracts are down an average of 23 percent nationwide this year, the level remained virtually unchanged in Alaska.

Needham said Alaska will wind up with about 6,500 soldiers, approximately 5,000 at Fort Wainwright and most of the balance at Fort Richardson. The Army will also hang on to its 1.6 million acres of land in Alaska, he said.

Availability of space, Needham said, is part of what makes the Interior a desirable home for the military. As Anchorage grows, the military is running out of room for "live-fire" exercises.

"The trouble with live-fires at Fort Richardson is that, because of environmental constraints, we can only do it in the winter when there is 8-inches of ice," Needham said. "We're running out of room down there."

The Army has 916,000 acres available for training at Fort Wainwright, 62,000 acres at Fort Richardson and 662,000 acres that they will retain at Fort Greely, according to Linda Douglass of the Fort Wainwright Public Affairs Department.

According to the Department of the Army report, the realignment between Fort Greely and Fort Wainwright will result in a \$23 million implementation investment that will yield a net savings of \$43 million during the implementation period and \$19 million a year thereafter.

Needham said the army plans to spend \$2 million to upgrade Bassett Army Hospital at Fort Wainwright and another \$5 million on barracks renovation.

"Family housing is adequate, but we have let barracks slide," Needham said. "In the barracks, we (see Needham, next page)

(Needham continued from page 1)
have soldiers sitting on furniture older than they are."

The Army also plans to fix up the post swimming pool and spend another \$12 million on roads and other projects.

"The good news is that we have money to train," Needham said, adding that he expects Alaska's military to be called to a global hot spot some day.

Needham thanked Fairbanks for its support of Fort Wainwright during the army post of excellence evaluation that recently went on in Fairbanks.

"Both Fairbanks and the post had a good day when the evaluation team was here," Needham said. "We sincerely appreciate the support we get from the community."

Needham said he doesn't expect the results of the evaluation until some time in June.

"We won't know until they call us and tell us to come to Washington (D.C.)," Needham said.

* Board Hears Report on Water Quality Standards

The Sierra Club is mounting a new challenge to Alaska's Water Quality Standards which could cost Alaskans billions of dollars and stifle future development the chamber board was told at their March 6 meeting.

Mary Nordale, President of the Alaska Miner's Association, and Bill Jeffress, of Fairbanks Gold, gave the board a briefing on the Department of Environmental Conservation water quality standards review currently underway. The Sierra Club Legal Defense Fund has petitioned the DEC to revoke the water quality standard signed into law by Gov. Hickel on Dec. 5, 1994.

If the new standard being sought by the Sierra Club goes into effect, it could kill the mining, fishing and timber industries, Jeffress said. The Fort Knox project near Fairbanks, due to begin construction this summer, could be jeopardized by new, more stringent standards, Jeffress said.

Alaska's current standard allows a human health risk of 1 in 100,000. That means a person would have a 1 in 100,000 chance of contracting cancer if they were to drink two liters of treated water a day for 70 years, Jeffress said. The Sierra Club wants the risk factor changed to 1 in 1 million.

To put it into perspective, he said, your chances of being hit by an airplane falling from the sky involve about half the risk of the state's 1 in 100,000 standard. According to Jeffress' figures, Americans have a 1 in 4 chance of dying from cancer with or without the 1 in 1 million standard.

The Sierra Club's standards are unattainable, Jeffress said. Under the 1 in 1 million standard, drinking water would not be an acceptable discharge, he said. The technology doesn't exist, Jeffress said, to remove natural levels of arsenic from Alaska's water to the 1 in 1 million standard.

Nordale said the 1 in 1 million standard, if applied, would apply across the board and cost state and local government in Alaska \$2 billion to upgrade waste water systems. She estimated the cost to owners of residential septic systems at \$50,000 per lot.

Jeffress said the effect on the Alaskan economy would be catastrophic. He said venture capital for development would likely be scared off by the 1 in 1 million standard. The higher standards have proven fiscally and technologically unattainable in other states, he said. If we ignore the public process, he said, the regulations will go into effect virtually unopposed.

There will be a public hearing on the proposed water quality standards at 7 p.m., March 17 in the Noel Wein Library. Jeffress urged all interested parties to attend the meeting.

March Luncheon Speakers

March 14 British Petroleum Alaska President John Morgan will address the membership on development opportunities on the North Slope and what needs to be done to make those opportunities a reality. There will also be a Parka Parade preview.

March 21 MarkAir Director of Marketing Craig Johnson will speak on MarkAir's economic impact in the state of Alaska.

March 28 American Red Cross will give a Koyukuk River flood update.

Business After Hours

5-7 p.m., Thursday March 23

at

Frontier Business Machines

hosted by

Margherita Gilbertson

See insert for details

Water-quality rule changes draw criticism on all sides

The Associated Press

JUNEAU — Proposed changes in the state's water-quality regulations are being panned by industry and environmental representatives alike.

But their complaints differ: Citizen groups say the regulations didn't change enough, while a mining representative says the changes are a major break from the past and could cause problems.

The state revised the regulations in response to a January 1995 petition by the Sierra Club Legal Defense Fund, represent-

ing United Fishermen of Alaska, the Alaska Clean Water Alliance and the Alaska Wilderness Recreation and Tourism Association.

The groups petitioned the state after Gov. Walter Hickel signed new water-quality regulations just hours before he left office in December 1994. Those regulations followed a three-year battle over water-quality standards.

The proposed changes focus on mixing-zone regulations, with potential effects on mining, oil and pulp companies. Mixing zones are areas near a

discharge where state water-quality standards are exceeded.

"Mixing zones were designed as a temporary exemption to Clean Water Act principles," said Gershon Cohen, who heads the Alaska Clean Water Alliance. "But mixing zones have become the rule, not the exception."

Pamela Grefsrud of the state Department of Environmental Conservation said the revisions were largely minor language changes intended to clarify the regulations. But the Alaska Miners Association disagrees.

"It's very disturbing DEC

has presented this as minor changes when they've broken with the past. It's a very, very different document than anything we've had in the state," said Paul Rusanowski, Juneau branch chairman of the association.

One of the changes is a new definition of mixing zones, which Rusanowski said is likely to confuse people because it differs from what has been described as a mixing zone for years.

Another revised section could be interpreted to require the state to review a previously

approved discharge into water if any circumstances change, he said. That could pose problems for companies when changes occur, such as a drop in water flow in a dry year.

But Sierra Club Legal Defense Fund representatives are disappointed the revisions don't do more to narrow the situations in which a mixing zone for toxins or carcinogens are allowed, said Kelly Nolen, associate attorney for the organization.

A hearing on the proposed changes was held Friday night in Juneau.

oice of The Times

Inlet oil jobs, revenue face serious threat

This concludes a two-part series on the over-regulation of the oil industry in Cook Inlet.

By BILL STAMPS

The oil industry in Cook Inlet has done many positive things for this region of the state. Unfortunately, where once 12 major companies operated, only three remain. And they face being over-regulated out of existence by federal and state agencies.

The issue has to do with the requirements of a permit to discharge water from an oil platform. Many people probably aren't aware that a permit "violation" does not have to be something that causes harm to the environment — only violate the written text of the permit.

For instance, oil companies have to report a spill the size of less than one tablespoon. Millions of gallons of water move by an oil platform every hour, and if one tablespoon of anything not listed on the permit goes into the waters of Cook Inlet, a company is required to report it as a violation.

Another violation would be for a company to draw a bucket of water from Cook Inlet and pour it back in. A company would not be allowed to dump the water back into Cook Inlet if permission to do so is not written into the permit. That's because the natural waters of Cook Inlet may not meet the water discharge standards imposed on oil companies by the Environmental Protection Agency.

Can you imagine the EPA telling the fishing industry that fishermen are not allowed to wash off the decks of their boats because the waters of Cook Inlet are not clean enough to be dumped into the waters of Cook Inlet?

The reporting requirements placed on oil companies by the EPA and Alaska Department of Environmental Conservation are excessive and costly to the industry. Proposed regulations are even worse.

Consider some of the disparities in the standards placed on oil companies. Oil companies are allowed to discharge up to 50 milligrams of suspended solids per liter into Cook Inlet. The city of Anchorage is allowed to discharge 120 milligrams per liter. Ships (including Greenpeace's ship) are allowed 150 milligrams per liter.

Even Mother Nature is not held to the same strict permit requirements that the oil companies are. Cook Inlet waters naturally have from 2,000 milligrams of suspended solids per liter in the northern part to 200 in the southern part.

An oil company discharges produced



water and drilling mud and cuttings into Cook Inlet. These are byproducts of production and drilling operations. Even though four recent studies have shown that produced water and drilling mud and cuttings have no negative impact on the waters of Cook Inlet, the EPA is proposing extensive new testing requirements under the proposed National Pollutant Discharge Elimination System (NPDES) permit.

Consider also the approximate amounts of treated sewage discharged daily into Cook Inlet in 1994 by the following Cook Inlet area cities (numbers provided by the cities):

- Homer discharges approximately 300,000 to 400,000 gallons a day.
- Soldotna discharges about 500,000 gallons per day (via the Kenai River).
- Kenai discharges approximately 825,000 gallons per day.
- Eagle River discharges approximately 1.3 million gallons a day.
- Anchorage (Point Woronzof) discharges about 30 million gallons a day.

Those "dirty oil" platforms discharge the smallest amount — approximately 60,000 gallons a day.

Environmental extremists want a zero discharge from the oil industry into Cook Inlet. We should tip our hats to the EPA and to ADEC for not agreeing to this and recognize the zero-discharge issue for what it is: an attempt by the radical environmentalists to shut down the oil industry in Cook Inlet. It would take an estimated \$50 million to achieve zero discharge on the oil platforms.

Even though recent studies have shown the oil companies have done no

harm to the waters of Cook Inlet, they are being targeted for much tougher, more expensive and **unnecessary** discharging standards than other entities. Anchorage, for instance, is not required to meet the same total suspended solids standard the oil companies have to meet. Why? Because the cost would be too great for residents to bear if municipalities had to meet the same standards.

Oil companies operating in the declining fields can't afford the additional costs either. And they could use some support right now from the community.

Alaskans need to send letters to the EPA and the ADEC stating support for environmental protection of the waters of Cook Inlet but opposing unnecessary and expensive regulations in the proposed NPDES permit. We don't want to see the industry kicked out because of unnecessary standards demanded by extremists.

Letters from individual Alaskans are like votes in an election — each and every one counts. Public comments are being received through Jan. 29, 1996. Send your letters to:

EPA, Region X
Attention: Ocean Programs Section
WD-137
1200 Sixth Ave.
Seattle, Washington 98101

ADEC
Southcentral Regional Office
555 Cordova Street
Anchorage, AK 99501

Bill Stamps is chairman of the Kenai chapter of the Alaska Support Industry Alliance.

ADN 8/24/75

Water rules will go

Knowles wants new standards

Daily News staff and wire reports

JUNEAU — The Knowles administration said Wednesday it will change some controversial rules environmentalists say allow too much pollution in Alaska's relatively clean waters. The rules were approved the last day of the Hickel administration and were supported by industry and pro-development groups.

Environmentalists had hoped for a complete reversal. But clean-water activists said they were satisfied Gov. Tony Knowles agreed to revise at least some rules and to study others to see if changes are needed.

"There's ample room for industries to operate in Alaska with strong water standards and still make a profit," said Gershon Cohen, who heads the Alaska Clean Water Alliance. "We're not interested in stopping industry and stopping economic uses of natural resources."

Among the revisions will be a policy identical to federal standards for protecting high-quality waters such as those in national and state parks or wildlife refuges. The state previously had no such policy.

Rules on mixing zones also will be clarified. Mixing zones are parts of bays

WATER: Pollution rules in for a change

Continued from Page B-1

and other waters where a fixed amount of pollutants can be discharged without penalty. The idea is to use the water to dilute potentially harmful compounds so they won't hurt fish or other wildlife, or people, outside the mixing zone. Cohen and others felt Hickel's mixing zone rules were too lax.

The state also will set up rules to determine acceptable levels of cancer-causing chemicals that might be absorbed by fish that people eat, said Gene Burden, environmental conservation commissioner.

The compromise was reached Tuesday, when the governor's staff met with business and conservation leaders.

Hickel's top environ-



mental officials devised the new rules mainly to help wood-pulp mills and to speed the development of new mines, including the planned A-J mine near Juneau. Many pro-business groups had said the state's previous water-pollution standards were too harsh and hurt businesses. On Wednesday, one business supporter appeared satisfied with Knowles' compromise, which retains some of Hickel's rules.

"Certainly, there are areas in which we would have preferred a different

outcome," said Becky Gay, who heads the Resource Development Council, a trade group. "Nevertheless, we believe the Knowles administration has made a good faith effort to address the concerns of both sides."

State officials plan to begin meetings with interested parties next month with business and conservation leaders to work out details of the new water-quality standards, which could be in place within six months, Burden said.

State leaders said working out a compromise will benefit the business climate and the environment. Knowles told reporters, "This is a very positive step forward from the gridlock and confrontation and hard feelings that were there before."

Please see Page B-2. WATER

FORUM / LETTERS

Costs outweigh benefits of tougher water standards

By BECKY GAY

In a state with so much water, it is understandably hard for most people to grasp the implications, costs and benefits of Alaska's strict water-quality standards signed into law in December.

The standards are used for setting pollutant limits in wastewater discharge permits issued to industries and local communities. Limits are used to control discharges and prevent contamination of state waters and fish. Risk levels describe the statistical possibility of some hypothetically affected population getting cancer from ingesting polluted water or fish.

For a reality check, the statistical risk of dying from cancer in the United States is one in four. But for risk management purposes, the current Alaska standard for waste-water discharges has been set at the strict limit of one in 100,000.

Why? Because although risk assessment may be a science, risk management is definitely policy-driven, not something science can determine.

Risk is one of the least understood concepts at the heart of the debate over Alaska's water-quality standards. Those advocating even stricter standards reflect a broader public perception about risk. This perception translates into demands that require large amounts of resources and attention be devoted to alleged dangers that often give only margin-



al gains. While arguing about minute elements, large obvious risks remain unfunded.

For instance, in Alaska, the lack of rural drinking water and sanitation systems poses a far greater threat to public health than outweighs any marginal health benefit gained from changing the risk level from one in 100,000 to one in 1 million.

Risk is calculated from many variables. The calculation that produces the one in 100,000 risk level is based on an assumption of hypothetical people eating contaminated fish for 70 years. In short, people not eating contaminated fish nor drinking contaminated water face a risk much lower — or completely absent. Because of such conservative assumptions, the true individual risk for most Alaskans is far lower since they are not part of an affected population.

Alaskans eat a lot of fish. But whether we eat more than five pounds of contaminated fish per year is the actual question and how many contaminated fish do you think you ate last year?

None, right? Remember, only an affected population faces the risk level under debate, and I'd be willing to bet Alaskans hardly ever eat contaminated fish, much less for 70 years.

I implore Alaska fishing groups to help set the record straight whether or not Alaska fish are more contaminated. If true, that certainly sends a mixed message to our markets regarding Alaska's seafood quality, which the Resource Development Council maintains is the best.

Although risks are minuscule by definition, the costs of managing society's risk aversion are huge. Perceived risk is even more of a societal burden to afford when one considers the competition for scarce resources (money) that could divide urban and rural Alaska communities already fighting to comply with even stricter limits.

Generally, it is a mark of bad public policy when the socioeconomic costs are immense and the marginal benefits are small. This is exactly what will occur if the present water quality regulations get any more onerous.

If the human health-risk level is raised to one in 1 million, the cost for advanced treatment will cause the average utility rate across Alaska to increase approximately 400 percent. Rates in Ketchikan are estimated to increase by 573 percent, Nome by 295 percent, Juneau by 293 percent and Sitka, a whopping 662 percent. Here, where half the state population lives, the Municipality of Anchorage estimates that rates would increase 407 percent. Costs will be borne by the taxpayer (for upgrades to

Perceived risk is even more of a societal burden to afford when one considers the competition for scarce resources (money) that could divide urban and rural Alaska communities already fighting to comply with even stricter limits.

public sewage systems) or by the consumer (for upgrades to industrial systems) who will see little, if any, commensurate benefit.

The Resource Development Council believes Alaska water-quality regulations should be both technologically achievable and economically feasible. The existing one in 100,000 standard already requires sampling accuracy for some constituents beyond the limits of testing equipment.

The council also believes standards should not be so restrictive that discharges must be cleaner than drinking water. Does it make sense to follow bad examples set by some states that adopted the stricter risk limits and now operate under de-facto exemptions because dischargers like municipal treatment facilities cannot meet the limits?

The public record clearly has shown widespread support for the current regulations that were the product of an intense, five-year public process spanning two administrations and including 12 public hearings, two statewide

teleconferences, two public comment periods running 213 days and three two-day meetings of a State Water Quality Advisory Group, and this latest administrative review. Isn't it reasonable to have some finality to a public regulatory process as rigorous as this?

Let Alaska give the regulations a chance to work. Write Commissioner Gene Burden at the Department of Environmental Conservation and give him support to retain the current regulations that provide a high level of protection for Alaskans without placing too many overwhelming restrictions on local communities and industry. For additional briefing materials, call the Resource Development Council, 276-0700. Deadline: April 19.

Becky Gay is executive director of the Resource Development Council for Alaska Inc., now celebrating its 20th year of educating on Alaska resources issues.

ADN 4/24/95

VOL

The Anchorage Times

Publisher: BILL J. ALLEN

"Believing in Alaskans, putting Alaska first"

Editors: DENNIS FRADLEY, PAUL JENKINS, WILLIAM I. TOBIN

The Anchorage Times Commentary in this segment of the Anchorage Daily News does not represent the views of the Daily News. It is written and published under an agreement with former owners of The Times, in the interests of preserving a diversity of viewpoints in the community.

Expensive flush

IT'S UNLIKELY that many residents are giving serious thought to the state's water quality standards now under review by the Alaska Department of Environmental Conservation.

But if local sewer bills increase by more than 400 percent as a result of new water discharge regulations requested by environmental activists, the residents will not only take an interest, they probably will be up in arms.

The state's water quality regulations were signed into law by Gov. Walter J. Hickel on Dec. 5, 1994 — the day he left office. The Hickel administration had worked on developing those regulations for about three years, during which there were numerous opportunities for public comment.

The Sierra Club Legal Defense Fund, however, challenged the process. It petitioned the new administration to suspend or repeal the water quality standards that had just been enacted. Gov. Tony Knowles responded by ordering an additional public review period for the regulations.

It is important to note that Knowles did not signal an intention to make any changes in the new water quality law. Neither did he suspend or repeal the regulations as requested. He only provided an additional comment period, which ended last week.

THE MERE POSSIBILITY, though, that Sierra Club lawyers might prevail in persuading the new administration to rewrite the law got the attention of Anchorage's elected officials, as well as numerous other local government and business leaders across the state.

According to written testimony from Mayor Rick Mystrom, for instance, the state's water quality standards already "are highly protective of the environment and in some cases are more restrictive than federal standards."

It would cost Anchorage hundreds of millions of dollars, he said, if the state were to adopt the changes requested by the environmentalists — "and unfortunately result in little or no measurable improvement to the environment."

Among changes requested by the Sierra Club is one that would require municipal wastewater dumped into the Inlet to be 10 times purer than the ocean water into which it is discharged.

Complying with such a bizarre standard would require construction of new water treatment facilities. Mystrom says sewer bills for single family dwellings in Anchorage would increase to \$109.70 a month, from an existing rate of \$21.65. The mayor endorsed a resolution that the Anchorage Assembly passed unanimously earlier this month. It requests simply that DEC retain the current water quality standards as enacted last December.

We trust that Anchorage's former mayor, now the governor, will take the city's concern to heart.

ADN The Anchorage Times

Publisher: BILL J. ALLEN

8/25/95 "Believing in Alaskans, putting Alaska first"

Editors: DENNIS FRADLEY, PAUL IENKINS, WILLIAM I. TOBIN

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Water quality

THE KNOWLES administration has good reason to celebrate this week's general accord reached with environmentalists and industry over revised water quality regulations for the state. From all accounts, the process followed by the administration in developing a consensus was fair and the final result appears balanced.

Neither side got all that it wanted, but each is signaling it can accept the compromise.

Count us among the skeptics who doubted such a result was possible. We voiced our concern earlier this year when Gov. Tony Knowles ordered the Department of Environmental Conservation to review the state's water quality regulations that were signed by the previous administration on its last day in office.

The Sierra Club Legal Defense Fund petitioned for the repeal of those regulations and although the new administration did not grant the request, it agreed to reopen the process to more public discussion. That sent shudders through the mining, timber and oil industries — and throughout state communities that treat, process and discharge wastewater. There was much apprehension that any changes to the water quality regulations would result in extraordinary expense for all concerned.

That kind of worst-case scenario, as it turns out, did not occur. Instead, the Knowles administration appears to have achieved that oft-sought middle ground that protects the most important objectives of both sides in the debate.

In announcing resolution of the issue Wednesday, Gov. Knowles said, "Industry benefits from having clear standards to work with and from knowing that the administration is willing to work with them to resolve regulatory disputes. And all of Alaska's family benefits from having high standards for the protection of our precious liquid assets."

It's understandable that the governor should feel good about his accomplishment. But as he knows, the debate is by no means over regarding this particular issue.

The compromise itself ensures there will be more give and take to come. For instance, adding a new set of regulations requiring protection of "outstanding national resource waters" is sure to generate legal challenges down the road. Yet-to-come standards for regulating hydrocarbon particulates and total suspended solids, and a further review of mixing zone restrictions all promise more controversy and debate.

That's how it should be. Ongoing review, debate and revision of state water regulations are anticipated in the federal law that provides states the authority to regulate water quality.

An open public process that allows all sides to be represented at the table, as has happened up to this point, is the best way to address these complex issues and serve the state's best interest.

ADN 01 FEB 95

State agrees to review rules on water quality

The Associated Press

JUNEAU — The Knowles administration has agreed to reopen for public review key sections of water-quality standards adopted on the final day of Gov. Wally Hickel's term.

Department of Environmental Conservation Commissioner Gene Burden has decided to accept additional public comment between Feb. 13 and April 19 on some

sections of the new regulations.

Burden made the decision in response to a Jan. 12 petition from the Sierra Club Legal Defense Fund, which represents several groups that have criticized the rules as too lax.

The Alaska Clean Water Alliance, United Fishermen of Alaska and Alaska Wilderness Recreation

Please see Page D-4, WATER

WATER: New standards to get review

Continued from Page D-1

and Tourism Association have alleged that the rules actually weaken water-protection standards and threaten public health.

The Hickel administration had defended the rules and said they would protect the state's water bodies from pollution.

Industry generally supported the rules. A mining association official said reopening the regulations would bring uncertainty to the mining and oil and gas

industries.

Sections reopened to public review are those dealing with mixing zones and treatment works, sediment, petroleum hydrocarbons and human health-risk levels.

Mixing zones are areas where water-quality standards can be exceeded as pollutants are released into, and diluted with, public waters. Such zones have been proposed by developers of the Kensington and Alaska-Juneau gold mines.

Critics of the new rules

had wanted several sections of the rules suspended, but the rules will remain in effect during the new public review period, DEC special assistant Ernie Piper said.

"We're not overturning the regulations ... we're not slowing down any permit reviews," Piper said. "At the same time, we're going to be as responsive as possible to public concerns."

Changes could be made to the rules after the comment period, Piper said.

7.

Miners upset by rules

Changes proposed
to arsenic levels

By HEATHER ROBERTSON
Staff Writer

Disputes over draft National Pollution Discharge Elimination System mining permits are one step closer to being resolved if proposed changes to arsenic levels in discharge water are approved.

Since the Environmental Protection Agency, Department of Environmental Conservation and Alaska Mining Association met with local miners March 15 for "all hands on the table" discussion, negotiations regarding the proposed draft NPDES general permit for placer mining in Alaska have led to a partial agreement.

Officials within the last month have proposed revised arsenic levels in the general draft permit. The current placer mining draft permit has miners meet an arsenic level of 0.18 parts per billion, which has drawn fire from mining interests statewide. To compensate, EPA plans to require miners to take monthly site-specific examples of background levels which would give average limits. Limits found could vary from required levels in the current permit.

"Each miner would be granted site-specific arsenic limit based on samples taken of arsenic in



Mike Mathers/News-Miner

MOVING ON—Don May Sr. stands above the equipment yard at Polar Mine Inc.'s Lower Gold Mine off Murphy Dome Road Thursday. May stepped down from the company as president and chief executive officer in November, turning the enterprise over to his sons.

the background levels in the receiving water. Miners would then get relief from the current 0.18 ppb levels," said Tim Hamlin, assistant legal counsel for EPA.

Of the obstacles faced in the ongoing petitioning sessions, one

of the challenges faced has been what defines natural background. The dilemma revolves around state requirements regarding current water quality standards. Miners are hoping for a solution that isn't unduly expensive or

impossible to meet.

Don May, owner of Polar Mining, Inc., a placer gold mine in operation in the Goldstream Valley for 46 years, said regulations regarding arsenic levels in the draft permit are unjust.

"We are a local mining company struggling to make ends meet. The regulations aren't fair; they are unmeasurable. The city of Fairbanks has upwards of 50

See MINING, Page A-8

Fairbanks Daily News-Miner, Monday, April 22, 1996

MINING: Miners, regulators seek compromise on arsenic levels

Continued from Page A-1

for arsenic levels for drinking water. If we as miners take a gallon of city water and put it into the Chena River, we are in violation with current regulations because we are miners," said May. EPA has set themselves up for some huge lawsuits. They should think clearly before they pursue this avenue."

On Monday, the state Senate passed Joint Resolution 39 by a 34-2 vote, requesting that the EPA withdraw its settlement in a lawsuit filed by the Sierra Club Legal Defense Fund on behalf of American Rivers and the Northern Alaska Environmental Center.

Mining representatives are hopeful that the Senate's support will bolster efforts to negotiate the permit with approval by all before the upcoming mining season.

"The state has taken what seems to be a reasonable approach to the permit process," said Steve Borell, executive director of the Alaska Miners Association. "We are pleased that they have taken such a position. Exactly where it goes from here is not certain."

With representatives from DEC, DNR, Fish and Game, and petitioners deciding on legal wording, mining representatives have hopes of seeing a level of mutually satisfactory language emerge in the new permit. In some areas, representatives have had agreements; in other areas negotiators have exchanged views only.

"We don't know what the decisions are going to be in this thing. There were a multitude of terrible errors in that permit. Many things were stupid, to put it mildly;

EPA must surely recognize that," said Borell. "If EPA comes out with a different permit other than the draft and issues another permit with changes, what it will look like, we don't know."

Through lawsuits against the EPA by special interest groups such as American Rivers and the Sierra Club, mining and prospecting is now highly restrictive on the historical gold mining portions of the federal Wild and Scenic Rivers of Alaska. Fines for mining without a proper permit of up to \$25,000 a day can be handed down from the EPA, affecting established mining companies and tourists involved in recreational mining.

"Tourists were never notified that they couldn't mine. With substantive changes to permits, thousands of people have no way to know or comment," said Borell.

"The fact that notification to both tourists and miners was not effective is a major flaw in the EPA process. EPA did not address the people who were going to be impacted by the proposed permit."

He added, "If you're fined, it is one thing if you are breaking the law and know it. It is another if requirements are so nebulous and bad that you can't operate at all. The choice is either to shut down or operate under the letter of the law and still risk penalties."

Hamlin said the EPA doesn't know when it will issue the final new permit. Stating that it may be in the next few months, he said the agency has not decided how to ease the transition from the old to the new permit, but intends to do so with the least possible disruption to miners.

A Brief History of the Classification of Alaskan Waters From a Review of Water Quality Objectives/Standards Since 1949



1949 The Alaska Water Pollution Control Board was established by the territorial legislature under the authority of Chapter 117, titled simply 'An Act'. The Alaska Water Pollution Control Board was responsible for administration of the Alaska Water Pollution Control 'Act' to safeguard Alaskan waters from pollution and establish standards of water purity which affect public health, fish and wildlife, recreation and industrial development.

According to Amos Alter (Person. comm., 1992), Director of the Division of Sanitation and Engineering for the Alaska Department of Health in 1949, there was only one person assigned to actively administer the water pollution control program. It wasn't possible for this one person to classify all Alaskan waters for different uses. It was also generally believed by the Board that Alaska had a unique chance to protect its pristine waters, unlike states that already had many polluted waterbodies. Therefore, it was determined that Alaskan waters should be generally protected for the highest water use. This was 'water supply and their sources.' Initial limits were provided by the US Public Health Service (USPHS) and included federal Drinking Water Standards.

1952 The first Water Quality Objectives table of standards was produced. This is found in a paper titled, 'Pollution Control Council, Pacific Northwest Area'. It was developed through the coordination of the engineering representatives from pollution control agencies in Alaska, British Columbia, Idaho, Montana, Oregon, and Washington. These standards were applicable to those regions and the Territory of Alaska.

It is in this table, 'applicable to the receiving waters for salt and fresh surface waters and underground waters,' that the first employment of protecting waters for the highest water use is evident. For example, for the parameter 'toxic, colored or other deleterious substances', the USPHS standards applied to four of the five listed water uses.

1959 The Territory of Alaska became the State of Alaska. Concurrently, the Alaska Administrative Procedure Act became effective. Water Quality Objectives were published in the Administrative Code, Title 7, under Health and Welfare. The Water Pollution Control Board was disbanded. The Water Quality Objectives were under the broad authority of A.S. Title 46, (Water) and A.S. Title 16, (Fish and Game). The Commissioner of Health and Welfare after conducting public hearings, could establish standards and/or group the designated waters of the state into classes.

The Water Quality Objectives adopted by the State of Alaska were the same table established in 1952 by the Territory.

1952 - 1979 For 27 years the original work and intent of the Alaska Water Pollution Control Board and the Pacific Northwest Council were repeated in succeeding Water Quality Standard (WQS) revisions. Clarifications in language and some modifications were made but these did not change the character of the original work. Key elements in the classification of state waters follow:

1. It was possible through public hearings to reclassify waters for specific uses. If waters were not reclassified, the 'highest water use' superceded the other uses for a given waterbody.
2. The burden of justifying a reclassification was placed on those wishing to reclassify a waterbody.
3. In 1970, Ward Cove in Ketchikan, Ship Creek in Anchorage, Chena River, Fairbanks, and Silver Bay in Sitka were classified for specific uses as were all coastal waters. In 1971, both Ward Cove and Silver Bay were deleted from the reclassification list.
4. In 1973 the following significant clarification was made: 'if waters have more than one use, the most stringent water quality criterion of the the uses shall apply.' Up until 1979, numeric limits were primarily found in the USPHS Drinking Water Standards because other criteria had not been developed. It became more evident with this wording clarification that criteria and designated uses were integral parts of a water quality standard.

The Department of Environmental Conservation was created in July of 1971 as a split off from the Division of Environmental Health in the Department of Health and Welfare. DEC made few changes in the 1971 Water Quality Standards from previous Department of Health and Welfare standards. Reclassification required public hearings, the approval of the Commissioner of DEC and concurrence by the Administrator of the EPA for interstate waters.

1979 In 1979 significant changes were made in style, format and content of the WQS. Water quality criteria applicable to each use were significantly broadened in scope and detail. It was in this revision that aquatic life criteria made their first appearance with the adoption of 'federal criteria from the 1976 Red Book for the parameter of 'toxic and other deleterious organic and inorganic substances.' The USPHS Drinking Water Standards were also replaced by the Alaska Drinking Water Standards. It was now stated that between the Drinking Water Standards and the aquatic life criteria, the more stringent should be chosen as the applicable criterion. This practice continues today and in most cases, EPA's aquatic life criteria are more stringent than the Drinking Water Standards.

In general, the WQS took a more restrictive turn in 1979. There were many more stipulations that had to be met before a waterbody could be reclassified. For the first time, there was a section that included waterbodies ineligible for reclassification (parks, refuges, etc.). Another section spelled out what conditions defined the designated uses. To eliminate a use for a given waterbody it would have to be proven that those conditions did not exist. Ship Creek and marine waters were deleted from the reclassified list in this revision.

Key points are that although significant alterations were made in 1979, it was still quite possible to reclassify a waterbody after public hearings and the approval of the Commissioner. The burden of proof was on the applicant and the applicant only had to address 'existing uses' of the waterbody in the reclassification procedures.

1979 - 1987 During this period, amendments were proposed and adopted through the public process, but no comprehensive Water Quality Standard document was published with the incurred changes. No significant amendments were made concerning reclassification of waterbodies during this time.

In 1982 one important amendment was the adoption by reference of federal aquatic life criteria for 64 compounds or classes of compounds listed in the 1980 EPA Ambient Water Quality Criteria documents. This adoption by reference includes the bulk of the numeric criteria in effect today. Human health criteria for non-carcinogens also were adopted at that time.

In 1984 Nolan Creek and five tributaries near Wiseman were reclassified for the industrial use.

1987 - Today In 1987, revised Water Quality Standards were published. It was in this revision that aquatic life criteria for nine compounds, published by EPA in 1985, were adopted by reference. The procedures for reclassifying state waters were extensively modified to make them consistent with 1983 EPA regulations. The Clean Water Act does not address procedures for reclassifying state waters. At the time of this revision, two waterbodies remained on the reclassified list, Nolan Creek and Chena River. Although not referred to specifically in the WQS, the department now had to comply with EPA regulations in order to reclassify waterbodies of the state. Significant federal requirements follow:

A) To exclude a designated use through reclassification, it was no longer enough to show that the designated use was not an 'existing use' of the waterbody. One also had to prove that the designated use was not 'attainable.' This provision added a new and more difficult element in the formula for reclassification of state waters. It has proven to be onerous and costly to show that some designated uses might not be attained at some place in time, by some method.

B) EPA's regulations also require that a structured scientific study called a 'use attainability analysis' (UAA) must be conducted to prove that a use cannot be attained. Therefore, the decision to reclassify a waterbody is made after conducting a use attainability analysis. The State's request to reclassify must be approved by the Regional Administrator of EPA. High costs of analysis and strict EPA guidelines were prohibitive for considering all suggested reclassifications proposed. Based on these factors, a provision was added in the WQS that the decision on whether to proceed with a reclassification was at the department's discretion.

In November, 1989 an amendment to the WQS included a revision of the section on Classification of Waters. As a result of the Tolovana Use Attainability Analysis, the Department removed some protected use classes from 14 streams or segments of streams in the Tolovana River Basin. The cost to the state was extensive and it proved to be very difficult to eliminate significant 'attainable' uses that would satisfy the original intent of the applicant. In the final analysis, the department's cost and efforts to reclassify or not to reclassify rested solely on EPA's final approval. Therefore, even if the department wished to reclassify a waterbody, the department decisions can be vetoed by EPA according to the 1983 EPA regulations still in effect today.

The 1989 WQS revision retained the same procedures for reclassification adopted in 1987, and they remain the same today.

ALASKA WATER QUALITY REGULATIONS

Summary of Actions

Issue		Discussion	Action
1. ANTI-DEGRADATION	Adding a requirement to protect Outstanding National Resource Waters ("ONRW") to existing law that 1.) protects current water uses, and 2.) maintains existing water quality that exceeds minimum standards.	The absence of a section on ONRW is a deficiency in current regulations. Federal law requires protection of high quality waters such as a water of a national or state park or wildlife refuge or a water of exceptional recreational or ecological significance.	Adopt additional antidegradation provisions identical to current federal law that protects ONRW.
2. TREATMENT WORKS	These are facilities or bodies of water used to treat and/or dispose of sewage or industrial waste, such as municipal treatment plants, sewage lagoons or constructed drainage ditches.	Current regulation authorizes treatment works in natural water bodies. DEC is repealing this section because it is redundant with existing permitting laws administered in DEC's Solid Waste and Domestic Waste Water programs. The repealed section also confuses treatment methodologies with water quality standards.	Repealed.
3. PETROLEUM HYDROCARBONS	These are found in oil or diesel and are limited in wastewater discharges to protect water quality.	Current law prohibits surface oil sheens and film, but does not measure particulate hydrocarbons or nonaromatics; however, neither did the former regulations. The current regulations more accurately measure the most toxic dissolved hydrocarbons available to aquatic organisms and thus are superior to the former regulations. However, DEC will investigate the need for a particulate standard. DEC concluded that the present "Note 8" describing methodology and analysis for petroleum hydrocarbon testing is confusing and deficient. DEC is amending the regulation to clarify required analytical measurements.	Repeal Note 8 regarding analytical standards and adopt Note 8 from August 1973 version. Conduct research of need for a numerical particulate standard by July 1996.
4. SEDIMENT	"Sediment" can be interpreted as settleable solids or as total suspended solids which includes both settleable and nonsettleable solids.	Before the December 1994 changes, the water quality standards defined "sediment" as total suspended solids which includes both settleable and nonsettleable solids, but established a numerical criterion only for settleable solids. DEC's change clarified that settleable solids is the regulated parameter. There is no criteria established for TSS. Neither EPA nor the Region 10 states have a TSS criteria.	Retain existing section. Complete study of the need for TSS standard and report by July 1996.
5. MIXING ZONES	These are designated areas of a waterbody where wastewater enters and mixes with the receiving water. The water quality standards can be exceeded within a MZ to dilute the wastewater discharge, but standards must be met at and beyond the zone boundaries.	The current regulations provide better MZ management controls by setting stricter standards for human health exposures in the vicinity of a proposed MZ; establishing previously lacking criteria for mixing zones in fresh water rivers and streams; and establishing control technology prerequisites. DEC retains the authority to grant or deny a MZ based on the factual data presented. Despite the improvements, there is a need to revisit the regulations to clarify a number of issues, such as size limits for rivers and streams, toxics and lethality.	Initiate rule making in September 1995. Prepare interim guidance for MZ evaluation ASAP and complete guidance by April 1, 1996.
6. RISK LEVEL	The adoption of a risk level was in response to federal law; however, the state has not developed the human health criteria necessary to effectuate the standard.	EPA devised a mathematical equation composed of factors such as risk level, contaminated fish consumption rates, body weights and contaminated water consumption. When presented with three choices DEC adopted the middle risk factor of 1 in 100,000 or (or 10^{-5}). No other parameters necessary to this equation have been defined so national default standards apply. There are 54 carcinogens for which human health criteria could be established; however, DEC can limit the discharge of a toxic as appropriate to protect public health.	Recommend no change and initiate rulemaking to determine Alaska-specific values.

Industry and Environmental Representatives Hail Cooperative Process

**GOVERNOR TONY KNOWLES
ANNOUNCES RESOLUTION ON
WATER QUALITY STANDARDS**



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**OFFICE OF THE GOVERNOR
TONY KNOWLES
JUNEAU, ALASKA**

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OFFICE OF THE GOVERNOR
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2/19/96

CS FOR HOUSE BILL NO. 342(O&G)

IN THE LEGISLATURE OF THE STATE OF ALASKA

NINETEENTH LEGISLATURE - SECOND SESSION

BY THE HOUSE SPECIAL COMMITTEE ON OIL AND GAS

Offered:

Referred:

Sponsor(s): REPRESENTATIVE ROKEBERG

A BILL

FOR AN ACT ENTITLED

1 **"An Act relating to water quality."**

2 **BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:**

3 *** Section 1. AS 16.05.050 is amended by adding a new subsection to read:**

4 (b) The commissioner may not require a higher discharge water quality
5 standard for water use ~~1~~ than the existing quality of water received for the use.

6 *** Sec. 2. AS 38.05.020 is amended by adding a new subsection to read:**

7 (c) The commissioner may not require a higher discharge water quality
8 standard for water used than the existing quality of water received for the use.

9 *** Sec. 3. AS 46.03 is amended by adding a new section to read:**

10 Sec. 46.03.085. **WATER QUALITY STANDARDS.** (a) If, in considering the
11 discharge of water and establishing criteria for water quality for discharged water, the
12 commissioner finds it necessary to establish a discharge standard for sediment, the
13 measurement of the sediment shall be by the volumetric Imhoff Cone method or by
14 another method approved by the U.S. Environmental Protection Agency for the
15 measurement of sediment.

1 (b) In applying the water quality criteria and limits authorized under this
2 chapter, the commissioner may require a person who uses water to meet a discharge
3 standard that is compatible with downstream uses at the point of the downstream uses
4 if the standard

5 (1) reflects a range of values that are satisfactory for the other
6 downstream uses;

7 (2) is not more restrictive than current applicable federal water quality
8 standards; and

9 (3) does not require a higher discharge water quality standard than the
10 existing quality of water received for the use.

11 (c) If federal water quality standards change, the commissioner shall promptly
12 adopt regulations that amend the state's water quality standards so that the state's water
13 quality standards remain consistent with, and not more restrictive than, applicable federal
14 water quality standards.