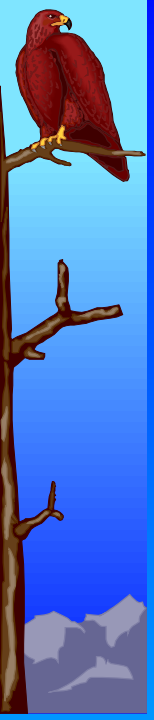
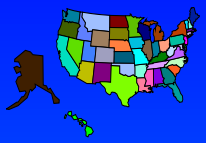
Alaska Water Quality Standards

History and Authority

Nancy Sonafrank

Overview of Federal Authority





U.S. Code (USC)
Clean Water Act (1977)
33 U.S.C. ss/1251 et seq.
305(b) Reports, 303(d) List

Federal Register (FR)
Proposed and Final Rulings
Modifying Regulations

EPA National Publications
Criteria Documents
EPA Methods for Analysis of Water
Guidance Documents

Code of Federal Regulations (CFR)
Title 40 - Protection of Environment
Subchapter D - Water Programs
(Parts 100-149)

40 CFR Part 122 - NPDES
Point Source Discharge Permits
Nonpoint Source

40 CFR Part 131 - WQS
Designation of Uses
Criteria
National Toxic Rule (NTR)

40 CFR Part 130
WQ Planning & Management
Water Quality Reports for 305(b)
TMDLs for 303(d) Water Bodies

40 CFR Part 121-State Certification
401 Certification of NPDES

Overview of State Authority

Alaska Statutes
Chapter 46.03 Environmental Conservation
AS 46.03.050 Authority, AS 46.03.050 Pollution Standards
AS 46.03.080 Quality and Purity Standards,
AS 46.03.100 Waste Disposal Permit

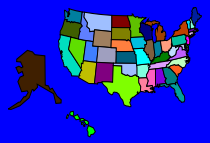
Alaska Administrative Code
Title 18 Environmental Conservation

Water Quality Standards
18 AAC 70
Protected Use Classes, Criteria,
Mixing Zones, Site Specific Criteria

Wastewater Disposal
18 AAC 72
Domestic WW Permits & Plans
Nondomestic WW Permits & Plans

Water Quality Criteria Manual
Toxic & Other Deleterious Substances

History of the Water Quality Standards



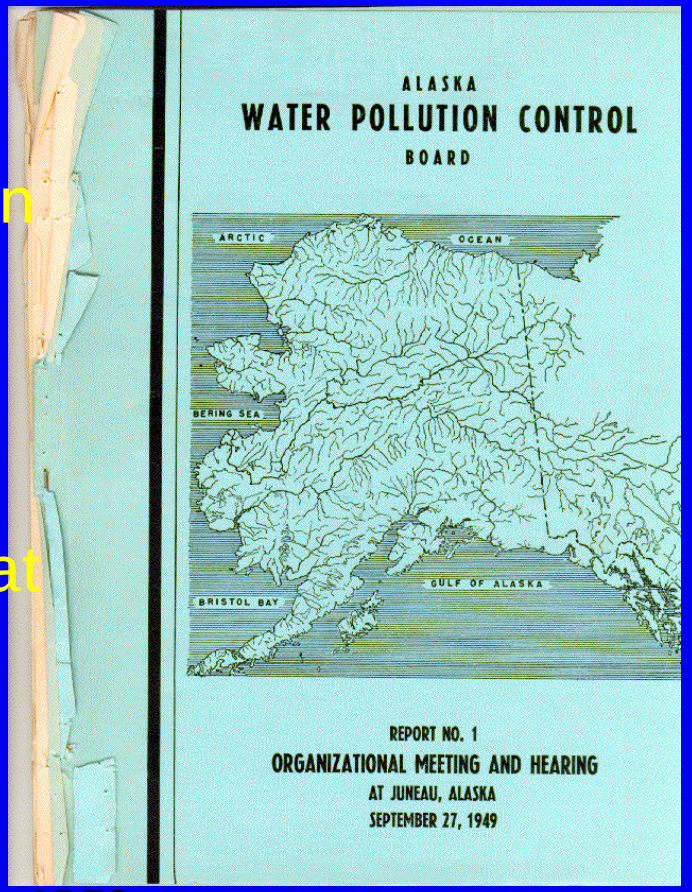
One of the first environmental regulations passed by Congress was the Water Pollution Control Act of 1948.

- The Act adopted principles of State-Federal cooperative program development.
- It limited federal enforcement authority,
- And limited federal financial assistance.

(ANPRM, 1998)

In 1949, the Alaska Water Pollution Control Board was established by the territorial legislature and the Alaska Water Pollution Control Act was created.

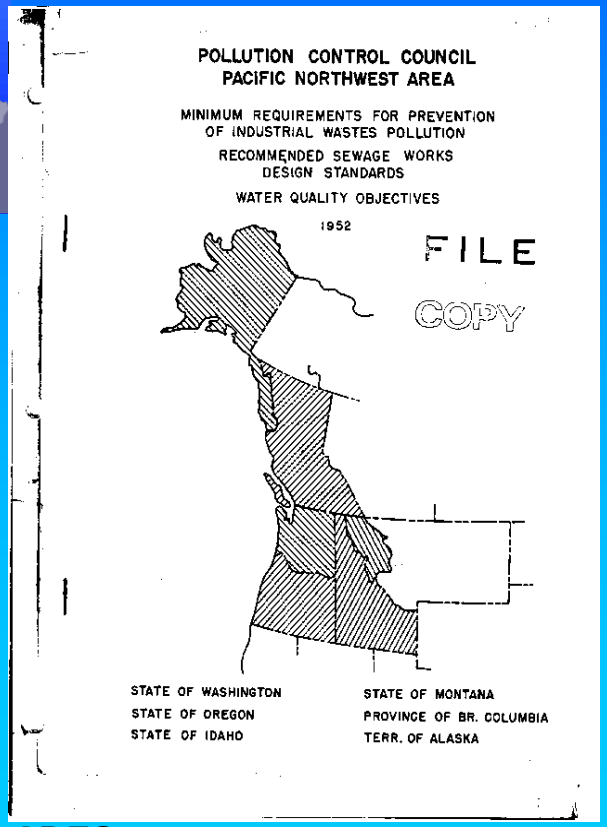
- The Board was responsible for administration of the Alaska “Act” to safeguard waters from pollution and establish standards of water purity that affect public health, fish and wildlife, recreation and industrial development.



ADEC

In 1952, the first Water Quality Objectives table was produced for Alaska.

- It was developed cooperatively by Alaska, British Columbia, Idaho, Montana, Oregon, and Washington.



POLLUTION CONTROL COUNCIL
PACIFIC NORTHWEST AREA

MINIMUM REQUIREMENTS FOR PREVENTION OF INDUSTRIAL WASTES POLLUTION

RECOMMENDED SEWAGE WORKS DESIGN STANDARDS

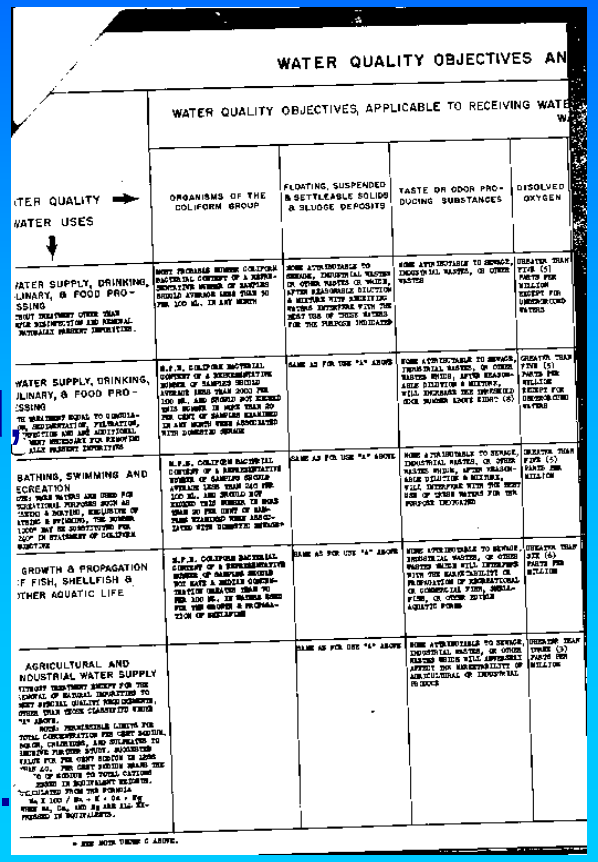
WATER QUALITY OBJECTIVES

1952

FILE COPY

STATE OF WASHINGTON
STATE OF OREGON
STATE OF IDAHO
STATE OF MONTANA
PROVINCE OF BR. COLUMBIA
TERR. OF ALASKA

It was in this table that criteria for "toxic, colored, or other deleterious substances," first appeared.



WATER QUALITY OBJECTIVES AN

WATER QUALITY OBJECTIVES, APPLICABLE TO RECEIVING WATE

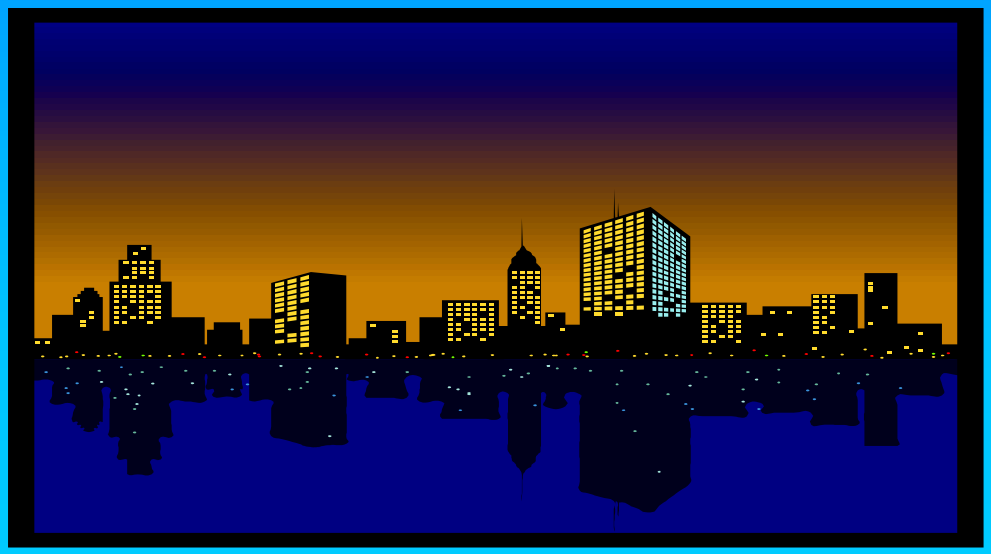
TER QUALITY → / WATER USES ↓	ORGANISMS OF THE COLIFORM GROUP	FLOATING, SUSPENDED & SETTLEABLE SOLIDS & SLUDGE DEPOSITS	TASTE OR ODOR PRODUCING SUBSTANCES	DISSOLVED OXYGEN
ATER SUPPLY, DRINKING, LINARY, & FOOD PROSSING	MOST PROBABLE NUMBER COLIFORM BACTERIAL CONTENT OF A REPRESENTATIVE NUMBER OF SAMPLES SHOULD AVERAGE LESS THAN 50 PER 100 ML. IN ANY MONTH	NONE AFFECTIONABLE TO SEWAGE, INDUSTRIAL WASTES, OR OTHER WASTES OR SCUM, AFTER REASONABLE DILUTION & MIXTURE WITH AMBIENT WATERS INTERFERE WITH THE BEST USE OF THESE WATERS FOR THE PURPOSE INDICATED	NONE AFFECTABLE TO SEWAGE, INDUSTRIAL WASTES, OR OTHER WASTES	GREATER THAN FIVE (5) PARTS PER MILLION EXCEPT FOR UNDISTURBED WATERS
WATER SUPPLY, DRINKING, LINARY, & FOOD PROSSING	M.P.N. COLIFORM BACTERIAL CONTENT OF A REPRESENTATIVE NUMBER OF SAMPLES SHOULD AVERAGE LESS THAN 2400 PER 100 ML. AND SHOULD NOT EXCEED 5000 NUMBER IN MORE THAN 20 PER CENT OF SAMPLES EXAMINED IN ANY MONTH WHEN ASSOCIATED WITH DOMESTIC SEWAGE	SAME AS FOR USE "A" ABOVE	NONE AFFECTABLE TO SEWAGE, INDUSTRIAL WASTES, OR OTHER WASTES WHICH, AFTER REASONABLE DILUTION & MIXTURE, WILL INTERFERE WITH THE BEST USE OF THESE WATERS FOR THE PURPOSE INDICATED	GREATER THAN FIVE (5) PARTS PER MILLION EXCEPT FOR UNDISTURBED WATERS
BATHING, SWIMMING AND CREATION	M.P.N. COLIFORM BACTERIAL CONTENT OF A REPRESENTATIVE NUMBER OF SAMPLES SHOULD AVERAGE LESS THAN 240 PER 100 ML. AND SHOULD NOT EXCEED 1000 NUMBER IN MORE THAN 20 PER CENT OF SAMPLES EXAMINED WHEN ASSOCIATED WITH DOMESTIC SEWAGE	SAME AS FOR USE "A" ABOVE	NONE AFFECTABLE TO SEWAGE, INDUSTRIAL WASTES, OR OTHER WASTES WHICH, AFTER REASONABLE DILUTION & MIXTURE, WILL INTERFERE WITH THE BEST USE OF THESE WATERS FOR THE PURPOSE INDICATED	GREATER THAN FIVE (5) PARTS PER MILLION
GROWTH & PROPAGATION F FISH, SHELLFISH & THER AQUATIC LIFE	M.P.N. COLIFORM BACTERIAL CONTENT OF A REPRESENTATIVE NUMBER OF SAMPLES SHOULD NOT EXCEED 2400 NUMBER IN MORE THAN 20 PER CENT OF SAMPLES EXAMINED WHEN ASSOCIATED WITH DOMESTIC SEWAGE	SAME AS FOR USE "A" ABOVE	NONE AFFECTIONABLE TO SEWAGE, INDUSTRIAL WASTES, OR OTHER WASTES WHICH WILL INTERFERE WITH THE MAINTENANCE OR PROPAGATION OF RESIDENTIAL OR COMMERCIAL FISH, SHELLFISH, OR OTHER DESIRED AQUATIC FORMS	GREATER THAN SIX (6) PARTS PER MILLION
AGRICULTURAL AND INDUSTRIAL WATER SUPPLY		SAME AS FOR USE "A" ABOVE	NONE AFFECTIONABLE TO SEWAGE, INDUSTRIAL WASTES, OR OTHER WASTES WHICH WILL ADVERSELY AFFECT THE SUITABILITY OF AGRICULTURAL OR INDUSTRIAL SUPPLIES	GREATER THAN FIVE (5) PARTS PER MILLION

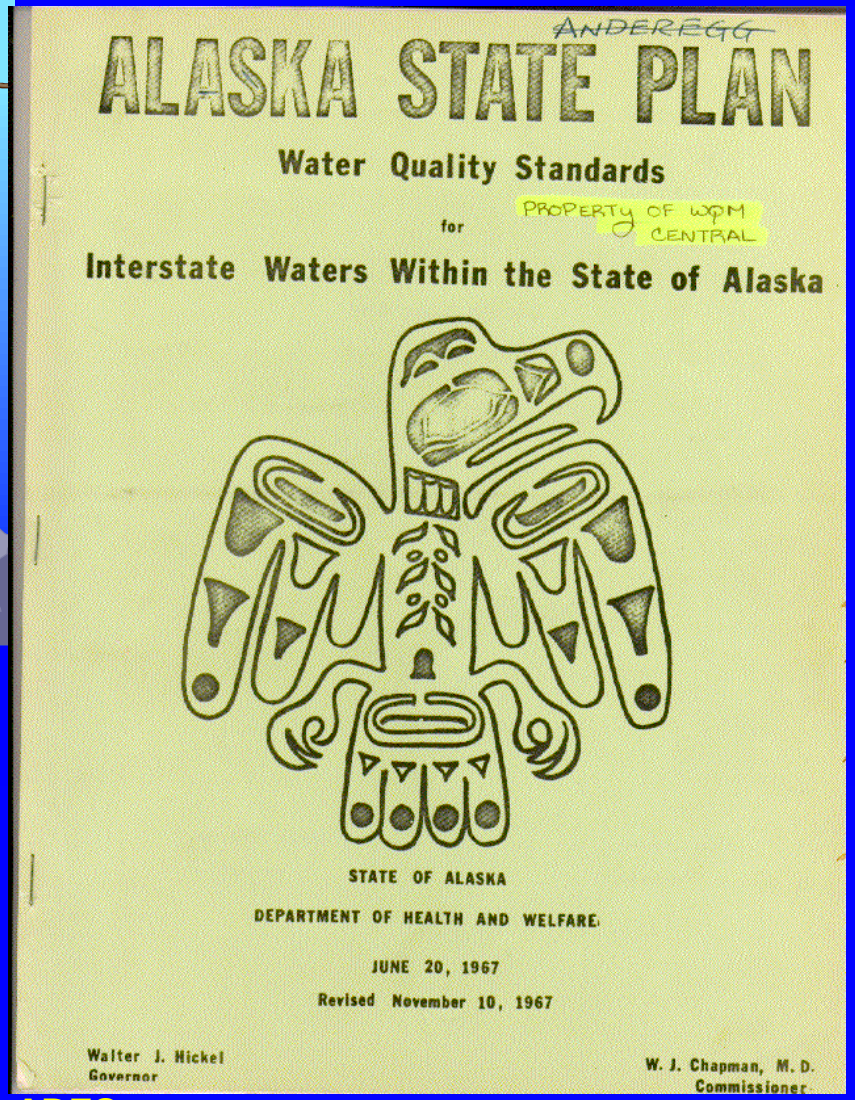
ADEC

Back to national actions....

- The principles of the 1948 Water Pollution Control Act (WPCA) continued in the 1956 WPCA and the Water Quality Act of 1965.

- The Water Quality Act of 1965 directed states to develop water quality standards thus establishing goals for interstate waters. (ANPRM, 1998)





In response to the federal 1965 Act, the Alaska Department of Health and Welfare wrote the Alaska State Plan for interstate waters and published it in June, 1967.

ADEC

On December 2, 1970 President Nixon created the Environmental Protection Agency by executive order.

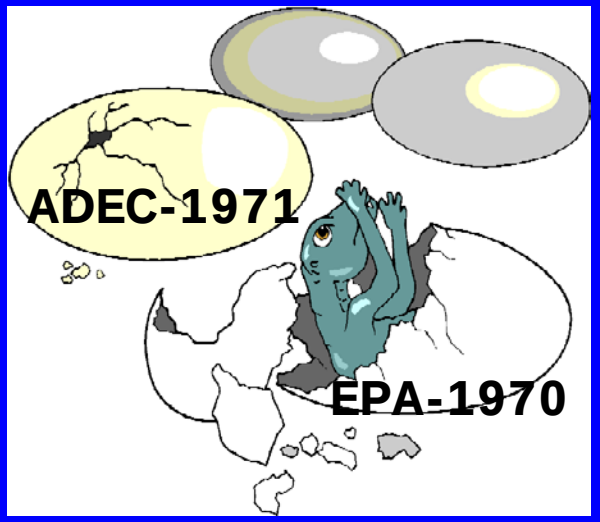
Photo by Charles O'Rear

NWDNS-412-DA-6628

Documerica Project

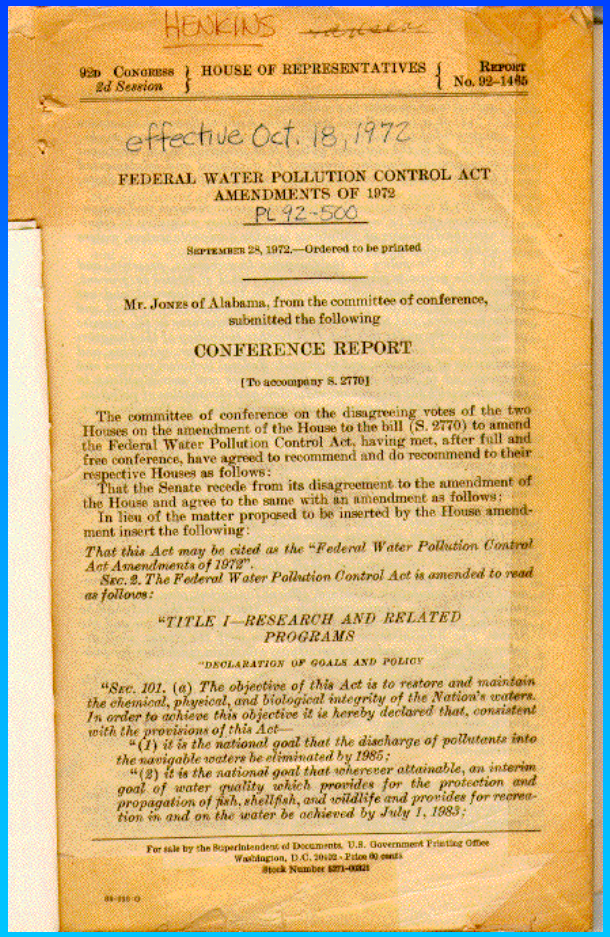
William Ruckelshaus, was the first Administrator of EPA.

In July of 1971 the Alaska Department of Environmental Conservation (ADEC) was created and the “Water Quality Objectives” were taken out of the Department of Health and Welfare regulations and transferred to the jurisdiction of the new agency.



- The ADEC made few changes to the 1952 objectives that now were called the Water Quality Standards under Title 18, Alaska Administrative Code, Chapter 70.

By the early 1970's all states had adopted interstate water quality standards as recommended in the 1965 Water Quality Act.



HENKINS

92D CONGRESS 2d Session } HOUSE OF REPRESENTATIVES { REPORT No. 92-1465

effective Oct. 18, 1972

FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972

PL 92-500

SEPTEMBER 28, 1972.—Ordered to be printed

Mr. JONES of Alabama, from the committee of conference, submitted the following

CONFERENCE REPORT

[To accompany S. 2770]

The committee of conference on the disagreeing votes of the two Houses on the amendment of the House to the bill (S. 2770) to amend the Federal Water Pollution Control Act, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its disagreement to the amendment of the House and agree to the same with an amendment as follows:

In lieu of the matter proposed to be inserted by the House amendment insert the following:

That this Act may be cited as the "Federal Water Pollution Control Act Amendments of 1972".

SEC. 2. The Federal Water Pollution Control Act is amended to read as follows:

"TITLE I—RESEARCH AND RELATED PROGRAMS

"DECLARATION OF GOALS AND POLICY

"SEC. 101. (a) The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective it is hereby declared that, consistent with the provisions of this Act—

"(1) it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985;

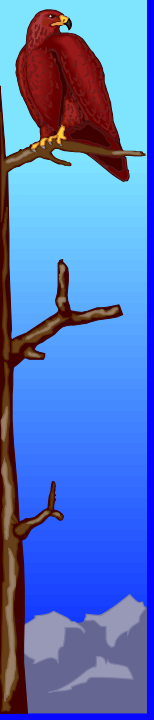
"(2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983;

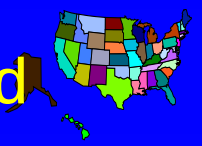
For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price 00 cents
Stock Number 5271-00321

ADEC

1972 Federal Water Pollution Control Act

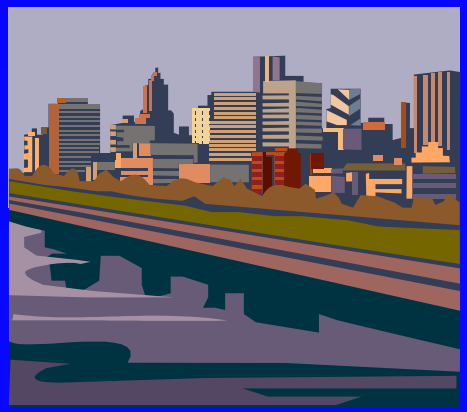
- In the view of Congress, an approach based only on water quality standards was deemed too weak to make a difference.
- So, Congress passed the Federal Water Pollution Control Act Amendments of 1972 also called the Clean Water Act. (ANPRM, 1998)



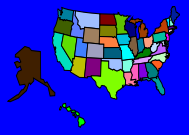


- The 1972 Clean Water Act amendments changed the face of water quality protection by establishing complementary technology-based and water quality-based approaches to water pollution control in point source discharge permits.

- Congress gave EPA primary authority to write permits for point source discharges.

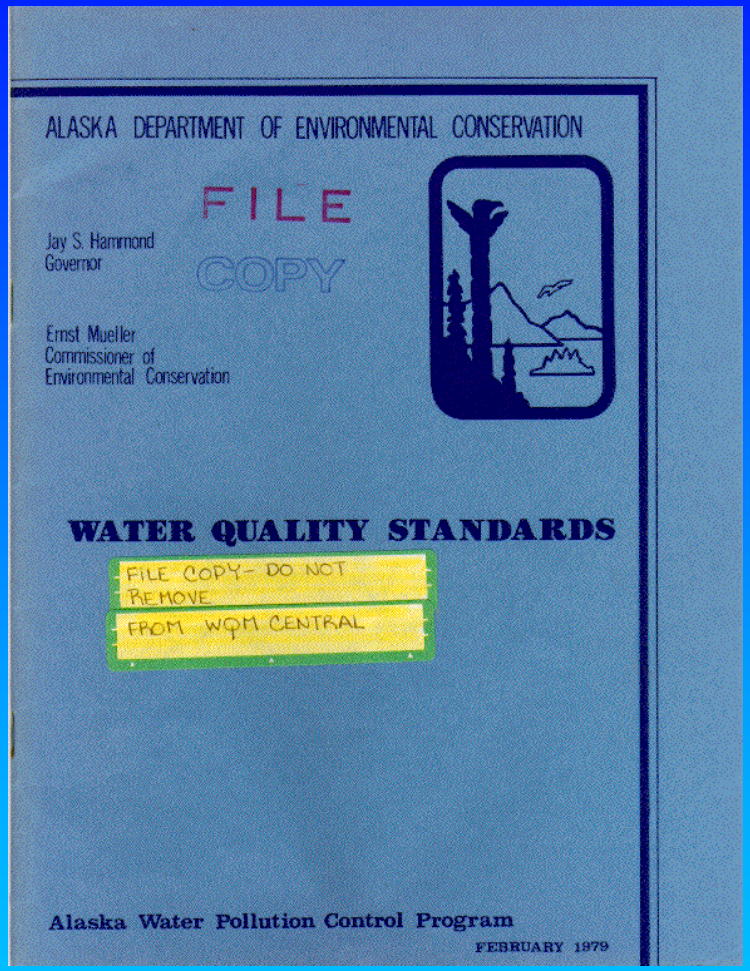


- EPA could authorize a state to assume primacy of the NPDES program.



- 44 states assumed the NPDES program or elements of the program by 1999. Alaska was not included.

- States could use the certification process to assert some control or flexibility in permits for state-specific conditions.

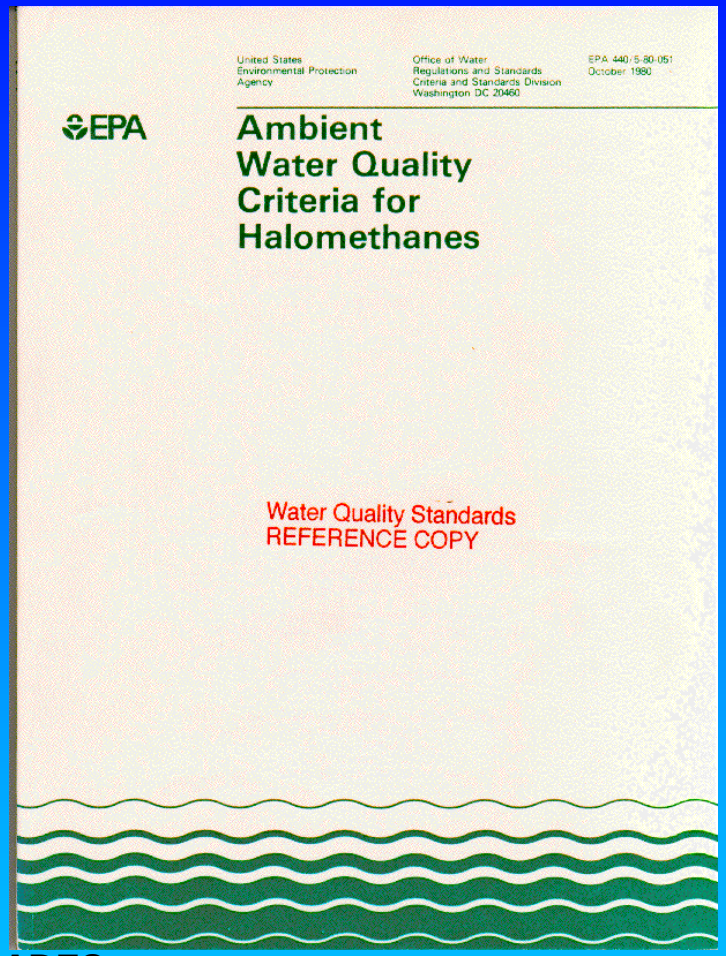


ADEC

1979 Water Quality Standards

In 1977, Congress passed Clean Water Act revisions that placed greater emphasis on the regulation of toxic substances.

In 1979 significant changes were made in style, format and content to the Alaska Water Quality Standards in response to the CWA revisions.



ADEC

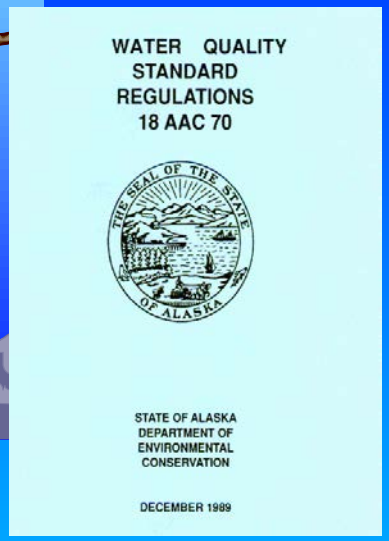
Example of a criteria Document.

In 1980 as mandated, EPA published chemical-specific criteria for the *priority toxic pollutants.*

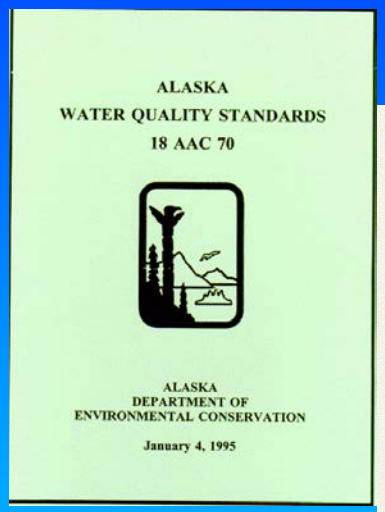
- On EPA's recommendation, between 1979 and 1999, Alaska adopted by reference all the chemical-specific criteria for the *priority toxic pollutants* into the WQS.

- In 2003, Alaska adopted the Water Quality Criteria Manual for Toxic Substances.

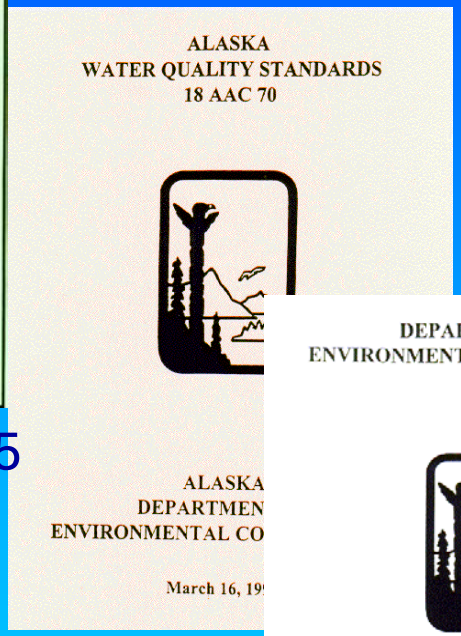
The Alaska Water Quality Standards have been in a continuous revision process from 1989 through June 2003.



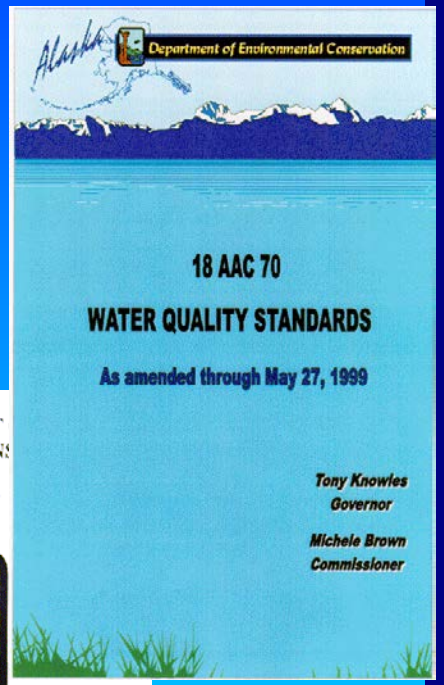
December, 1989



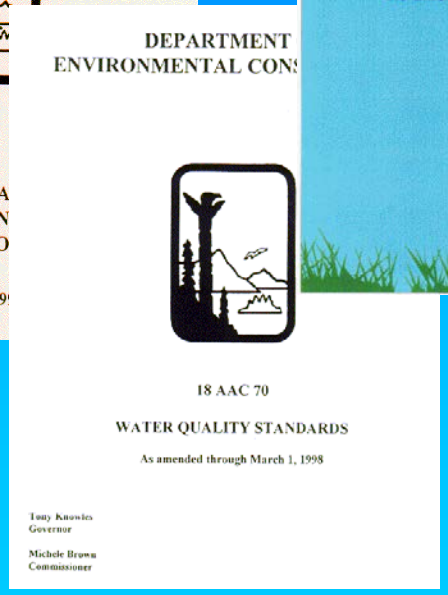
January 4, 1995



March, 1996



May, 1999



March, 1998

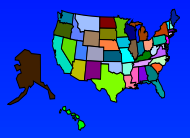
Current Regulations

DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

18 AAC 70

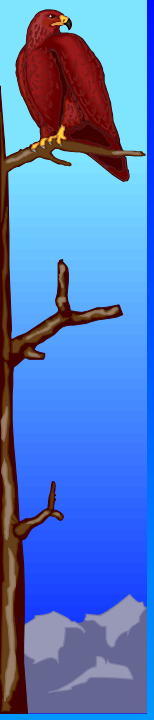
WATER QUALITY STANDARDS

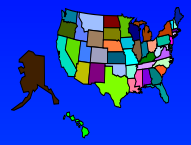
Amended as of February 5, 2017



In the late 90s, after 25 years of investment in technology -based controls and 70 billion dollars spent in sewage treatment plant construction, EPA turned back to water quality standards as a mechanism to make improvements in water quality beyond those that have been achieved through technology-based controls. (ANPRM, 1998).

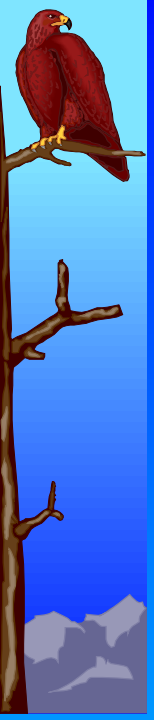
- Water quality standards serve as the foundation for the water quality-based approach to pollution control and are a fundamental component of watershed management. (ANPRM, 1998)





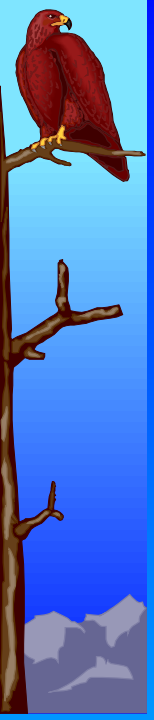
Due to a court decision in July, 1998, the Alaska Water Quality Standards aren't effective for purposes under the Clean Water Act until EPA approves them (includes NPDES permits).

- It has historically taken EPA many months past the mandatory 90 day deadline to approve new or revised water quality standards.
- Having partially ineffective state-adopted regulations creates havoc because the state and EPA are applying two sets of regulations (the old and new) for NPDES permits, adding complexity and confusion to an already onerous process.
- In April 2001, EPA ruled that the Alaskan court decision applies to all states.



Alaska is Big

- One to three million lakes larger than 20 acres
- Lake Illiamna, with a surface area of 1150 sq. mi., is larger then the state of Rhode Island, and alone larger than the water surface area of 20 states
- Over 3,000 rivers and streams, 7-10 million miles
- The Yukon River watershed is the size of Texas
- Around 40% of the land area (larger than California and Washington put together) is categorized as wetlands, due to permafrost
- The coastline is between 30,000 and 45,000 miles long, more than the rest of the nation put together

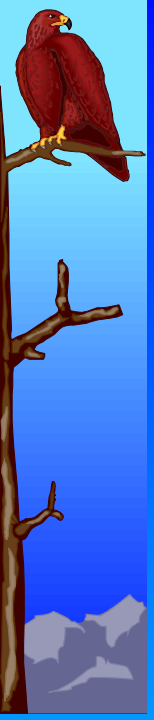


What are the Water Quality Standards?

Water Quality Standards Define the Water Quality Goals of a Water Body

Water Use + Criteria = Standard

- Designated water use classes
  - CWA requires fishable and swimmable uses
- In Alaska, all waters are protected for all uses
- Criteria are pollutant limits to protect uses
- The most stringent criteria for all uses becomes the standard



Designated Uses

(1) fresh water

(A) water supply

(i) drinking, culinary, and food processing;

(ii) agriculture, including irrigation and stock watering;

(iii) aquaculture;

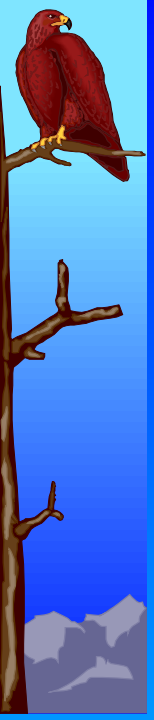
(iv) industrial;

(B) water recreation

(i) contact recreation;

(ii) secondary recreation;

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



Designated Uses

(2) marine water

(A) water supply

(i) aquaculture;

(ii) seafood processing;

(iii) industrial;

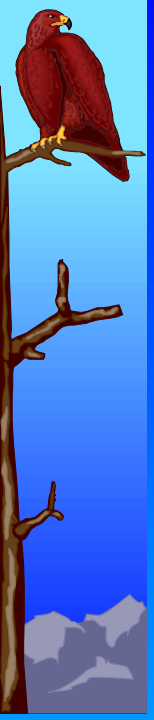
(B) water recreation

(i) contact recreation;

(ii) secondary recreation;

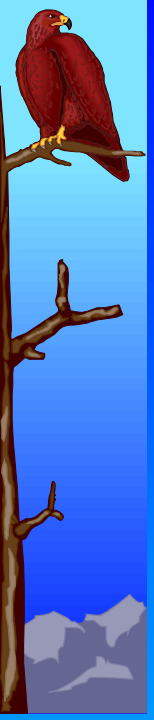
(C) growth and propagation of fish, shellfish, other aquatic life, and wildlife; and

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



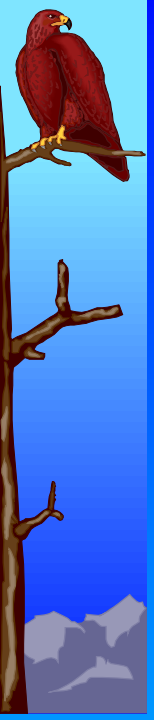
Toxic Criteria Tables

- Drinking Water Criteria
  - Maximum Contaminant Levels (MCLs)
- Stockwater and Irrigation Water Criteria
- Aquatic Life Criteria for Fresh Waters
- Aquatic Life Criteria for Marine Waters
- Human Health Criteria for Noncarcinogens



Conventional and Nontoxic Criteria

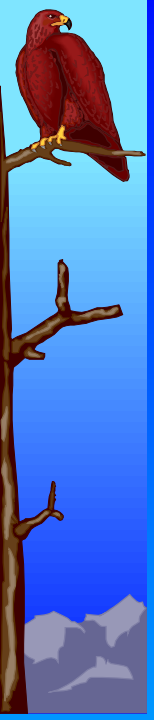
- Color
- Fecal Coliform Bacteria
- Dissolved Gas (dissolved oxygen)
- Petroleum Hydrocarbons
- pH
- Radioactivity
- Residues
- Temperature
- Turbidity



Outline of Alaska Water Quality Standards 18 AAC 70

Article 1. Statewide Standards

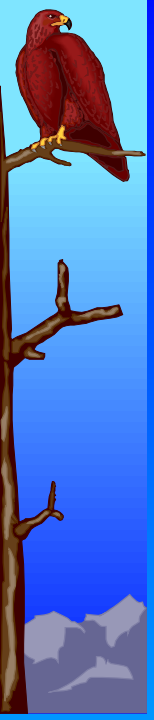
- 005 Nonapplicability of Groundwater Provisions
- 010 General
- 015 Antidegradation Policy
- 020 Water use classes and standards table
- 025 Carcinogenic risk
- 030 Whole effluent toxicity (WET) limit



Outline of Alaska Water Quality Standards 18 AAC 70

Article 2. Exceptions to Statewide Standards

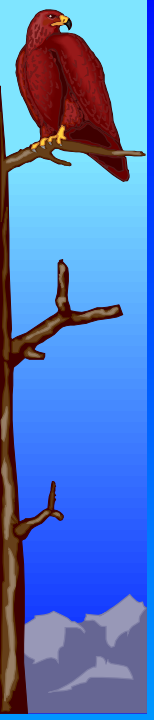
- 200 Short term variance
- 210 Zones of deposit (ZOD)
- 220 Thermal discharges
- 230 Reclassification
- 235 Site specific criteria
- 240-270 Mixing zones



Outline of Alaska Water Quality Standards 18 AAC 70

Article 3. General Provisions

- 900 Enforcement discretion
- 910 Compliance schedule
- 990 Definitions



Triennial Review

- Occurs every three years
- Helps to keep the pollution limits for Alaska's waters up to date by integrating the latest science, technology, policy, and federal requirements into how the State regulates water quality.
- Opportunity for the public to weigh in on water quality regulations of concern