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TESTIMONY OF

FREDERICKA (RIKI) OTT

BEFORE THE HOUSE INTERIOR COMMITTEE

MAY 7, 1989 FIELD HEARING ON

PRINCE WILLIAM SOUND OIL SPILL & ALYESKA OPERATIONS

ON BEHALF OF:

THE CORDOVA DISTRICT FISHERMEN UNITED

&

THE UNITED FISHERMEN OF ALASKA

My name is Riki Ott. I am a fisherwoman from Prince William Sound, Alaska. I own a salmon drift gillnet permit and have fished Prince William Sound for four years. I have also longlined for halibut commercially and for sablefish as part of a killer whale research project in the southwest district of Prince William Sound -- the part hardest hit by the EXXON VALDEZ oil spill on Good Friday.

I have a six-pack captain's license and have operated my vessel as a charter boat in the southwest district and all over Prince William Sound. But my concern for and love of the sound goes much deeper than commercial interests: I have kayaked in many of its fjords; sport fished in many of its bays and coves; camped on many of its beaches; picked berries, hiked and hunted in many of its hills.

As a resident of Cordova and concerned fisherwoman, I am currently serving on the board of directors of the Cordova District Fishermen United (CDFU), the United Fishermen of Alaska (UFA), the Copper River Fishermen's Cooperative, and the Prince William Sound Conservation Alliance.

My training is in marine biology and fisheries: I have a masters in oil pollution (University of South Carolina, 1980) and a doctorate in sediment pollution (University of Washington, 1986). Because of my background, the board of CDFU gave me the Alyeska case, which I have been working on for one and one half years.

Fishermen in the Prince William Sound area have a long history of active involvement in protecting their fishing grounds from adverse environmental impacts of the oil industry. As early as 1971, a CDFU delegation testified on fishermens' concerns with the proposed tanker route and Valdez tanker terminal before the Congressional House Subcommittee on Fisheries and Wildlife Conservation for the Merchant Marine and Fisheries Committee. In 1977, Keith Specking gave a paper at the Cordova Fisheries Institute in which he spoke of a hypothetical oil spill -- of 200,000 barrels after a grounding on Bligh Reef! (See attachments).

In February 1989, CDFU and UFA sent me to Washington D.C., then on to Texas to the International Oil Spill Conference, to share our concerns about the tanker terminal, Alyeska, and the marine transportation of oil with Congressmen, scientists, and oilmen. Staff of this committee, Dan Beard and Jeff Petrich, were very receptive to the fishing industry's message: given the high frequency of tankers into Port Valdez, the increasing age and size of that tanker fleet, and the inability to quickly contain and cleanup an oil spill in open water of Alaska, we felt that we were playing a game of Russian Roulette. We knew "The Big One" was only a matter of time.

On March 23, 1989, as keynote speaker, I delivered those same messages to the Valdez community . . .

On March 24, 1989, with the grounding of the EXXON VALDEZ and resulting release of 10.5 million gallons of crude oil into Prince William Sound, the seven oil companies who own Alyeska broke a contract with the U.S. government and the people of the state of Alaska. Simply put, Alyeska was unprepared to deal with an oil spill of this magnitude, as they promised they would be, and they failed to react quickly during the critical early hours of the spill to minimize environmental damage, as they are mandated to do.

The oil spill has served to highlight a history of broken promises by the 'seven sisters' at Alyeska. While the oil companies' breach of the oil spill contingency plan is largely responsible for the eco-disaster in Prince

William Sound, this flagrant display of irresponsibility and lack of commitment to the people of Alaska and the nation is only the tip of the iceberg.

To understand the full scope of the breach of contract, one must first review what went wrong with the oil spill contingency plan, then look to the Alyeska facility to uncover the rest of the iceberg.

Alyeska and the Oil Spill Contingency Plan

In the 1987 General Provisions for Alyeska Oil Spill Contingency Plan it clearly states that:

> "the objective of the . . . plan is to minimize damage to environment and assure the safety of the public and employees in the event of an oil spill from company facilities . . ." (pp. 1-1)

(Residents of Tatitlek were physically ill from hydrocarbon fumes during the first three days while the slick remained in the vicinity of Bligh Reef: these people should have been evacuated immediately. Fishermen deployed to work at containing the slick during the first three days also reported being dizzy and nauseated: they should have been forewarned about the safety hazards and provided with respirators. The beach cleanup crew is largely unaware of the safety hazards of working with crude oil: they are improperly clothed and have reported unsanitary conditions, headaches, rashes and nausea. See attachments.)

> "It is the policy of the (seven) owner companies, represented by their agent, Alyeska . . . to take every reasonable action to prevent oil spills and, if they occur, to minimize environmental damage . . ." (pp. 1-1); and

> "The containment and cleanup of oil spills . . . will be given priority to prevent and/or minimize the amount of oil reaching sensitive areas . . ." (pp.1-2).

(Due to delays and indecisions that paralyzed initial response efforts, critical hours of calm weather were lost in inactivity: containment and recovery equipment did not arrive on scene until 13 hours after the spill. These personal observations have also been reported by the *New York Times*: Malcolm et. al. 4/16/89; and the *Wall Street Journal*: Wells 4/3/89.)

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"Alyeska will maintain full responsibility and control in the event of an oil spill unless a government agency specifically notifies Alyeska they have assumed . . . control . . ." (1-1)

And the 1987 Oil Spill Contingency Plan for Prince William Sound notes: "the Terminal Superintendent has full responsibility for all field actions in connection with any oil spill in Prince William Sound attributed to marine vessels in trade with . . . Alyeska . . ." (pp. 2-3).
(Alyeska relinquished responsibility and control of the spill to Exxon.)

"Cleanup operations . . . will be conducted by Alyeska as Agent for the Owner Companies . . . in such a manner as to not require assumption of control of such cleanup operations by federal or state officials . . ." (pp. 1-3)
(Because of the inability of the oil industry to handle the spill and associated agency coordination, federal officials were forced to assume a more active leadership role in cleanup operations after the second week.)

"Regularly scheduled training programs will be conducted to ensure that all personnel assigned to the Oil Spill Task Force are thoroughly familiar with their duties and the operation of oil spill contingency equipment. . ." (pp. 1-2).
(DEC documents critiquing Alyeska crew and equipment performance during once per year practice drills show that crew did not know how to handle the gear; equipment broke and malfunctioned; etc. *Wall Street Journal*: McCoy & Wells 4/7/89.)

In the Alyeska Oil Spill Contingency Plan for Prince William Sound it further states under the scenario for a 200,000 barrel spill in which the "weather conditions . . . (are) conducive to oil containment and cleanup" that:
"Alyeska believes it is highly unlikely a spill of this magnitude would occur . . . because the majority of tankers calling on Port Valdez are of American registry and all of these are piloted by licensed masters or pilots . . ." (pp. 3-54).
(Citing violent winds, frequent storms, and a rocky, broken coastline, fishermen knew that a major spill during the life of the pipeline was highly likely: Alyeska, citing computer projections, predicted a major spill may occur once every 241 years [*Anchorage Times* 5/3/89 Hunt.] As for the licensed pilots, everyone knows that story.)

"Private commercial vessels from . . . Valdez . . . would be employed to

assist in booming and logistical support . . ." (pp. 3-54).
(Fishermen from both Valdez and Cordova were ready to go as early as 8:00 a.m. on March 24 but were detained by the oil industry for, literally, days.)

The 1987 contingency plan is fraught with many other examples where actual spill response or preparation diverged from the plan. It is also interesting to note that Alyeska's contingency plan estimates that 50% of the oil following a 200,000 barrel spill will be recovered at sea and another 15% recovered from shores, with a mere 5% remaining in the environment (3-56). Following the 125,000 barrel spill from the tanker GLACIER BAY, an estimated 12-18% of the total oil was recovered with 30-40% remaining in the environment (see attachments). (The remainder of the oil evaporated, dispersed naturally, or stranded on beaches as tar balls.)

A Look to the Immediate Future: Waste Management Plans

Given the problems with the contingency plan, the fishing industry tends to review rather critically other plans proposed by Alyeska or its owner companies. On May 1, 1989, Exxon gave the Coast Guard its "Waste Management Disposal Scoping Plan" for handling the thousands of tons of oily waste generated by the spill. According to Exxon, "the plan is dependent upon making extensive use of existing treatment and disposal facilities at the Alyeska Valdez Terminal."

The tone of the document is set on the first page: "use of the Alyeska facilities will also require cooperation from the regulatory agencies to rapidly issue letters of non-objection, waivers, or permit modifications as required." Who do these people think they are? The regulatory agencies are supposed to set the rules and require cooperation from the industry -- not vice versa!

The waste management plan is not only not based in reality, it is illegal for several reasons.

1) The presentation refers to the ballast water treatment plant as it was conceived in 1975; not as it currently exists. Several of the key components in the plan, including the heat-treating system used to break oil-water emulsions, do not exist at the terminal.

2) The present facility is only capable of treating oil in ballast water: it cannot handle debris and other contaminants. As stated in the plan: "another option is to barge the wastewater to some other secondary wastewater treatment facility meant to handle organic compounds."

3) The present facility cannot handle emulsions. Degreasing agents or demulsifiers added to the emulsions would be carried into the ballast water treatment system with the wastewater. EPA could not seriously consider using the Alyeska facilities as a viable option for waste disposal because the ballast water treatment plant would be operating in continual "upset conditions" due to surges in flow rate and heterogeneity of wastestreams.

4) The plan proposes to use the sludge pits, long inactive, in a manner ruled by EPA to be illegal: sludge -- once removed, always removed.

5) There is absolutely no way to maintain the level of control proposed in the waste management plan. "Water samples will be taken and tested for oil and grease . . . from each vacuum truck . . ." Come on!

6) "Wastewater treatment experts from Exxon and Alyeska will insure that the handling of the spill associated waters . . . will meet the appropriate permit requirements;" and will be disposed of "in a safe, environmentally sound manner." We have heard this all before as has the DEC and the EPA. Surely no one expects miracles of the oil industry after 12 years of a pitifully poor performance. This sounds suspiciously like another one of these "Trust Me" deals. Just say no!

The fishing industry rejects the waste management plan that Exxon has submitted, both in concept and practice. The Alyeska terminal is quite clearly incapable of handling any more oily waste in its present condition and the operators are quite clearly incapable of operating in an environmentally conscientious manner as demonstrated most recently by their staunch refusal of the new NPDES permit and the state's 401 Certification.

To the extent that it is possible to process oily wastes at Alyeska or other facilities in Alaska in compliance with state and federal air and water quality standards, we request that all disposal practices be strictly monitored for permit compliance with trained experts, contracted through DEC and/or EPA, and paid for by Exxon: monitoring by "wastewater treatment experts from Exxon and Alyeska" is simply not acceptable. If a second waste

management plan is written and accepted, we request that all remaining oily wastes associated with the EXXON VALDEZ oil spill that cannot be properly treated in Alaska be transported Outside to refineries which are capable of handling the material.

Historic Overview

To fully understand why fishermen challenge Exxon's waste management disposal plan, one must view terminal plans and development from a historical perspective.

CDFU's Original Lawsuit

In the late sixties when the question came up of where to locate the southern terminus for the Trans Alaska Pipeline System (TAPS), the ice-free Port Valdez was an obvious choice. However, fishermen within Prince William Sound were concerned that, if the terminal was located in Port Valdez, the water quality within the port would eventually be degraded through standard terminal operations, effluent discharges, and mishaps during tanker loadings. In addition, there was concern about the marine transport of oil through Prince William Sound with its attendant problems: weather, rocks, the vessel traffic control system, and tanker safety in general. The port and sound serve as both fishing grounds and critical nursery grounds for juvenile salmon, shellfish, and many other marine species.

In the early seventies, the fishermen, represented by CDFU, filed a suit to prevent the TAPS terminus from being located in Port Valdez on the grounds that:

1) the special land use permit provided by the U.S. Forest Service to Alyeska for the construction of a 802 acre tank farm within the Chugach National Forest violated statutes which limit such permits to areas not in excess of 80 acres; and

2) the Department of Interior had not prepared an adequate environmental impact statement (EIS) and, therefore, issuance of the pipeline permit would violate the National Environmental Policy Act of 1969.

The fishermen's suit was ultimately consolidated with the suits of the environmentalists and Native groups, who were claiming that the right-of-

width requirements allowable under the 1920 Minerals Leasing Act. The consolidated suit was brought before the United States Court of Appeals for the District of Columbia.

In early 1973, the judge decided in favor of the fishermen and environmentalists: development of the pipeline was blocked. The decision was upheld by the Supreme Court. Pipeline proponents immediately turned to Congress to obtain permission to build the line.

Meanwhile, Congress had requested a new EIS from the Department of Interior as they had found the first unsatisfactory. The second EIS responded to the fishermen's concerns: whereas the ballast water from the incoming tankers was originally to be released directly into the port, provisions had been included for a ballast water treatment system. The system was to be designed to remove hydrocarbons from ballast water prior to discharge into the receiving waters.

With the second EIS, bills granting Alyeska an expanded right-of-way were introduced in Congress. In the Senate, Alaska's Senators Stevens and Gravel added an amendment foreclosing all court challenges to pipeline construction based on environmental concerns: the tie vote (49:49) was broken by Vice President Spiro Agnew -- in favor of the bill. The House of Representatives passed a companion bill.

In late 1973 Congress authorized the Department of Interior to grant the right-of-way to the pipeline owner companies allowing construction of the TAPS and the tanker terminal, Alyeska, thus effectively sidestepping the fishemen's lawsuit. The pipeline authorization bill was supported by the Administration.

However, Congress also acknowledged the fishermen's concerns about water quality by stipulating in the TAPS legislation that the ballast water treatment system would be reviewed and upgraded every five years to ensure that the Best Available Technology (BAT) was always being utilized. The Department of Interior was specifically mandated by Congress to carry out oversight (Section 23.C.)

The terminal was to be built on federal lands. However the State, exercising its land selection rights under statehood, selected the federal lands upon which the terminal was to be built. After the land trade, the Department of Interior made a unilateral decision that, since the terminal was no longer to

be on federal land, the Department was no longer responsible for overseeing the ballast water treatment operations.

Terminal Design, Construction & Initial Operation

The original Alyeska design drawing, approved by Congress, included plans to increase the physical size of the terminal and the two pollution control systems, (the ballast water and vapor recovery systems), as the amount of oil coming down the pipeline increased. The terminal was to be built in three phases corresponding to oil throughput.

	Oil flow (million barrels/day [mbd])	Crude oil storage tanks	Ballast water storage tanks	Incinerators
Phase I	approx. 0.6	14	3	3
Phase II	1.2-1.5	22	3	3
Phase III	over 2.0	32	5	5

Alyeska was built to the standards required by the original design, with a few changes. There were 18 crude oil storage tanks, four more than planned for Phase I throughput, and the ground was also blasted for the remaining 14 crude oil tanks in anticipation of Phase III throughput. However to cut expenses, the sludge incinerator was not built and mild steel, instead of the approved stainless steel, was substituted for the miles of pipes required for the vapor recovery system.

By 1977 the terminal was operational. An EPA NPDES permit for the ballast water treatment system had been issued to the seven individual oil company owners and operations were being monitored by three full time employees from the Department of Environmental Conservation (DEC).

In 1979 Dr. Ihor Lysyj, under contract to EPA, determined that the effluent from the ballast water treatment system contained significant amounts of the aromatic hydrocarbons benzene, ethylbenzene, toluene, xylene (BETX), and naphthalene. The ballast water treatment system was not removing these types of compounds from the effluent. Lysyj reported that the State's water quality standards at the boundaries of the mixing zone, into which the effluent was discharged, were being periodically exceeded. (In 1987, the EPA estimated that the ballast water treatment system "is assumed to achieve only 70 percent removal of toxic compounds" and that "during winter, compliance is predicted 84 to 93 percent of the time" [EPA Fact Sheet and Technical Evaluation for NPDES permit no.: AK-002324-8, pp. 17 &

To enable Alyeska to meet the 1980 NPDES permit and the State's water quality standards, the mixing zone boundaries were expanded and the standard for BETX was set to correspond to the highest levels being discharged by Alyeska during the winter months. This was done to accommodate Alyeska's effluent discharges so the terminal could operate legally. However, the permit was reissued with the intent that it was to be rewritten in 2.5 years to incorporate methodology to reduce the levels of BETX and naphthalene in the effluent. Specifically, the 1980 NPDES permit required that the permittees initiate a waste treatment and disposal study to review, evaluate and consider the feasibility of improving the performance of their ballast water treatment facility through modification of existing equipment with emphasis on reduction of total aromatic hydrocarbons (Part III. A.1.)

CDFU's Second Lawsuit

In May 1985, fourteen years after the fishermen's initial lawsuit, CDFU joined Virginia oil broker Charles Hamel in filing notice of intent to sue Alyeska and the seven oil companies that own the pipeline over alleged mismanagement of the ballast water plant, resulting in discharges of hydrocarbons (specifically, sludge) into the port in violation of state and federal environmental permits.

The suit was never filed as the EPA and DEC took immediate action to investigate the allegations. Soon after Lysyj (under contract to EPA) and DEC began to investigate the claims, the EPA issued a cease and desist order to Alyeska to stop recycling and discharging sludge through the ballast water treatment plant.

Documents from Alyeska's files revealed that the plant was producing so much sludge, (one estimate was 500 times greater than Alyeska claimed in public or about 70 tons per day), that operators asked for expert help to deal with the problem (see attachments). During wastewater treatment, oil is separated from water. The water is treated and discharged and the heavier compounds in oil -- the polycyclic aromatic hydrocarbons -- sink to the bottom of wastewater treatment basins and collect as 'sludge.' The polycyclic aromatic hydrocarbons are toxins and create a significant health hazard to both humans and marine organisms.

Several months later, after completion of their investigation, EPA and DEC issued a joint compliance order (see attachments) requesting that, among

1) install a system that samples and monitors discharged effluent for suspended solids (sludge);

2) reinstall sludge removal equipment where it had been dismantled or, alternatively, build a system that was equal to or better in sludge removal than the initial system;

3) build facilities for sludge treatment and disposal; and

4) keep floating sludge out of the second stage of the treatment process and the impound basins.

Alyeska responded to the sludge problem and the compliance orders in part by designing and building the biological treatment system, however, no facilities were built for sludge treatment and disposal.

Status Quo

Terminal Operations

To fully understand the scope of the pollution problems at Alyeska, one must understand how the terminal was designed to operate (Figure 1).

Oil comes down the pipeline under pressure and, before it is loaded onto tankers, the oil is sent crude oil storage tanks where the oil is allowed to "off-gas." (When the pressure on the oil is released, the oil "fizzes" like opening a can of Coke.) The poisonous crude oil gases or vapors collect in the tops of the cone-shaped crude oil storage tanks. These vapors (similar to what you smell when you fill your car up with gasoline) are drawn by a centralized compressor system to incinerators where the hydrocarbons in the vapors are destroyed by burning them at high temperatures (1400 degrees F). This process is called the vapor recovery system.

After off-gasing, the oil is ready to be loaded onto tankers but before the tankers can load oil, they must deballast (Figure 1). Tankers pump their contaminated seawater ballast into ballast water holding tanks (or 90 tanks) which store ballast water until it can be properly treated. This system allows tankers to deballast quickly so they can onload oil.

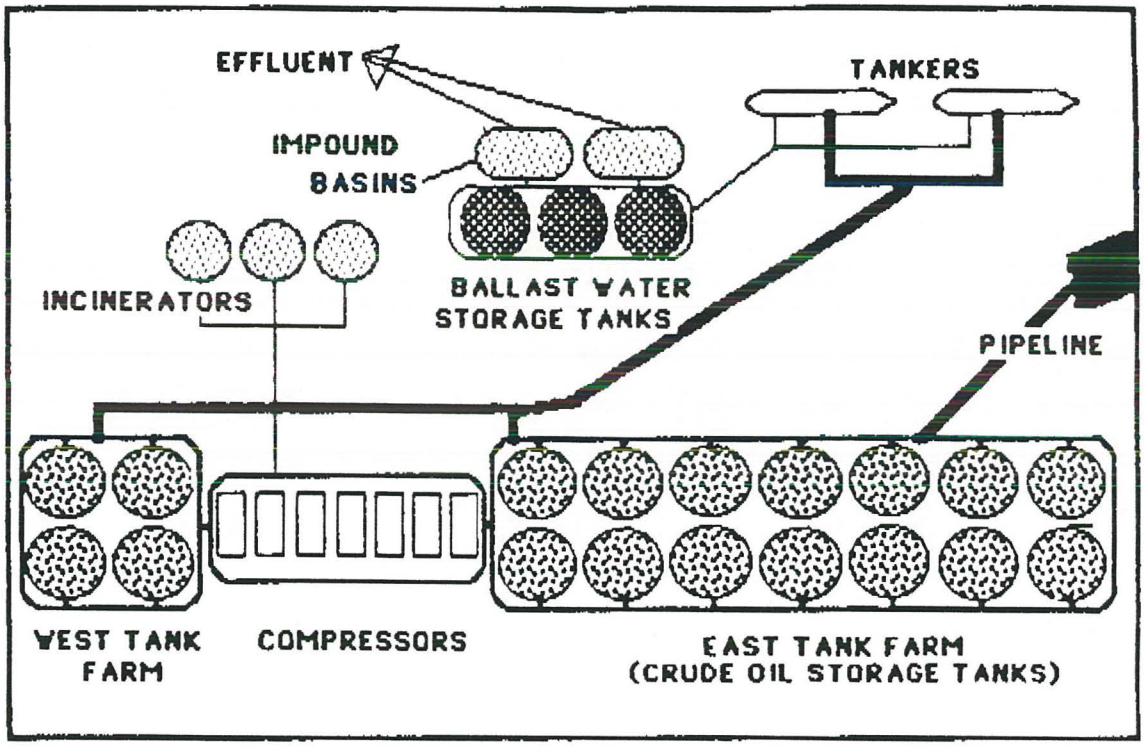

FIGURE 1. ALYESKA BALLAST WATER TREATMENT FACILITY

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Ballast water then flows into impound basins (Figure 1) where, in theory, bacteria physically eat or degrade the hydrocarbons, removing these compounds from the water. The treated ballast water is discharged as effluent directly into the receiving waters of Port Valdez. Again in theory, the effluent now meets the state's water quality standards.

The Alyeska ballast water treatment facility was designed as a model plant but problems arose when actual plant construction and operation veered away from the original design approved by Congress. Today, the plant is the exact same size as when it was built in 1977 despite nearly a four fold increase in pipeline throughput.

Vapor Recovery System

The vapor recovery system is both overloaded and badly in need of major repairs. The mild steel pipeline is corroding badly throughout its length; consequently, the compressor system is unable to function properly. Because of improper maintenance, the incinerators have trouble maintaining the high temperatures necessary to properly combust the crude oil vapors: between 1980 and 1987, inclusive, all three incinerators were fully operational 6% of the time (Anchorage Times: Ortega 4/7/88).

To compound the problems with the vapor recovery system, since early 1987 large volumes of natural gas liquids (NGLs) have been routinely injected into the pipeline when it was discovered that addition of NGLs substantially increase oil flow by reducing friction. NGLs contain a high proportion of "light ends" (highly volatile hydrocarbons) and therefore cause a much greater degree of off-gasing than crude oil alone. Additional incinerators are necessary to handle the additional vapors from the NGLs; yet Alyeska officials have made no plans to increase the size of the vapor recovery system to compensate for the additional vapors from NGLs.

To avoid stressing the rapidly weakening vapor recovery system, crude oil is loaded directly onto the tankers from the pipeline. The oil off-gases in the tanker holds releasing tons of noxious hydrocarbon vapors untreated into the air daily.

Ballast Water Treatment System

The ballast water treatment system simply does not work well. The biological treatment system, which is the heart of the ballast water treatment system, and has been severely critiqued by many scientists, including Drs.

Ihor Lysyj and Don Button, a microbiologist at the Institute of Marine Science, Fairbanks, Alaska (see attachments).

Bacteria need both time and warm temperatures to properly degrade hydrocarbons: with the present system, they have neither. Because of the shortage of ballast water holding tanks, the ballast water must be rushed through the impound basins to prevent slow-downs in tanker traffic and oil flow. The bacteria are not very active in cold water. Because of the cold temperatures and rapid flow, the bacteria do not have time to eat the hydrocarbons. The resulting effluent contains high levels of hydrocarbons.

The DEC has granted Alyeska a mixing zone which is a volume of water in which toxic compounds in effluent mix with surrounding seawater and are diluted so that the state's water quality standards will be met at the mixing zone boundaries. However, the DEC criteria specifically state that there shall be NO MIXING ZONE ALLOWED for compounds which accumulate in the sediment or are carcinogenic. The effluent from Alyeska contains compounds which are both known carcinogens (BETX) and powerful mutagens (compounds which change DNA in ways which can be passed on to offspring) (see attachments). The heavier weight hydrocarbons found in sludge are also known to accumulate readily in sediment.

Terminal Reviews

The terminal has never been reviewed or upgraded by the Secretary of Interior, as mandated by Congress in the TAPS legislation, in its twelve years of operation. Not only is the terminal not operating with the best available technology (more later), the technology that it originally utilized has not even been properly maintained. When parts of the environmental pollution control system broke down, like the sulfur scrubbers and the dissolved aeration flotation cell skimmers, the pieces were dismantled with no written approval by DEC, as required in the 401 Certification (see attachments).

Alyeska is still operating under the 1980 NPDES permit and is currently resisting, through elevation hearings and threats of adjudicatory hearings, the new NPDES permit and 401 certification. Alyeska also requested site specific reductions in the state's water quality standards for hydrocarbons in eastern Port Valdez on March 20, 1989. Because of budget cuts, operations and permit compliance for both air and water quality standards at the entire terminal facility -- the largest of its kind in the United States [illegible] being monitored by one half-time DEC position.

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Environmental Implications

The entire argument by "experts" over whether the terminal is or is not polluting is absurd. No one needs an expert to tell them that the ballast water treatment and vapor recovery systems are overloaded or what happens when the terminal is allowed to operate with overloaded pollution control systems: the results are obvious.

Or they would seem obvious to most people. Since inception of the terminal, Alyeska has largely monitored its own operations and environmental programs, supplying the regulatory agencies with reports, and raw data upon request. The results from 12 years of study are inconclusive: that is, one cannot determine what effect, if any, effluent discharges or air emissions at the terminal have had on the environment and biota.

In 1988, at the request of CDFU, the scientific work of Woodward-Clyde Consultants, the lead consulting firm for Alyeska, was audited by the DEC and the state Attorney General. The results of both audits indicate problems with Woodward-Clyde's scientific approach and techniques. The audits suggest toxic substances in toxic quantities may be entering the receiving waters of Port Valdez: the auditors recommend specific actions to evaluate the extent of the problem (see attachments).

The few independent scientists who have conducted tests in Port Valdez have documented portwide low level accumulation of hydrocarbons in sediment as a result of both standard operating procedures at Alyeska and presence of a mixing zone (EPA Fact Sheet and Technical Evaluation for NPDES Permit AK-002324-8, 7/31/87; DEC review of Alyeska Final Report 7/88; NOAA National Status and Trends Study 1987).

But hydrocarbons are extremely mobile compounds; that is they are readily taken up by organisms and passed throughout the foodweb. The types of compounds that Alyeska is discharging can cause long-term environmental damage by reducing the reproductive potential of fish and other aquatic organisms.

Scientists have documented the following pathway for flatfish: 1) hydrocarbons settle out of the water column and collect in the sediment; 2) "bugs" (small invertebrates) pick up the hydrocarbons from the sediment while feeding; 3) flatfish pick up the hydrocarbons from the bugs while

poisons are sent for detoxification); 5) the resulting break-down products or metabolites are themselves toxic; and 6) these metabolites cause cancer in the flatfish. A similar pathway of uptake and accumulation of hydrocarbons has been demonstrated for chinook salmon (Appendix A).

Best Available Technology in Other Areas

When operations at the Alyeska terminal are compared to similar operations at other facilities which handle oil and chemicals, including facilities partly owned by the Alyeska owner companies, it becomes readily apparent that the oil industry as a whole is operating under a global set of double standards. Furthermore, compared to other facilities, the Alyeska terminal is in many ways substandard (Appendix B).

The fishing industry believes that the oil industry is capable of doing a much better job of managing their terminal, cleaning up after their oil spill, and disposing of their oily wastes -- from both the spill and standard operations -- than they have so far demonstrated. Using public waterways as receiving waters and to transport oil is a PRIVILEDGE; not a right. The oil industry has broken their contract with the people of the nation and they have violated our trust. It is time to change their methods of operation (Appendices C and D).

Conclusions

The environmental track record at Alyeska and disorganized response during the oil spill crisis reflect poorly on the oil industry as a whole. The seven sisters own and operate TAPS and the North Slope fields. If Alyeska is an example of how these oil companies operate in "an environmentally sound manner," what are the companies doing in more remote wilderness areas with even less supervision than they have at Alyeska? Can we really trust what the oil companies tell us?

In 1971, Alaskans and the Department of Interior were promised "the best equipment, materials and expertise which will be made available as part of the oil spill contingency plan, will make operations at Port Valdez and in Prince William Sound the safest in the world." (L.R. Beynon, B.P. Technical Development Division, representing Alyeska Pipeline Services, testimony to U.S. Department of Interior, 1971.)

But there has been no real commitment on the part of the oil industry to provide the Best Available Technology (BAT). Instead in our time of need, Alaska fishermen identified the BAT and found it available in Houston, London, Shetland, Norway and Russia. While we do appreciate the help and efforts from people all over the world, why wasn't the BAT available on site as promised?

The attitude of the oil industry does not appear to have changed one iota since the EXXON VALDEZ spill. Look at the attitude of Amoco towards drilling the Beaufort Sea. On April 3, 1989, 10 days after the EXXON VALDEZ disaster, Amoco filed an appeal with Secretary Mosbacher protesting the state of Alaska's authority to review its oil spill contingency plan. While Alaskan fishermen fought to save their livelihoods, Amoco was in Washington D.C. saying they "should be allowed to proceed unfettered by the state because of the national security interest in finding new domestic oil reserves." (*Anchorage Daily News* 4/18/89).

The federal government and agencies, much like the Alaska government and agencies, have been too often willing to accept the "trust me" line of the oil industry. The fishing industry felt all along that this would only lead to complacency and disaster.

The fishing industry as a whole is not against the oil industry. **We only request now, as we have all along, responsible development of resources.** This includes a firm commitment from industries that have the potential to impact the water quality and environment to minimize this impact. It includes a firm commitment from the resource agencies that permit compliance will be strictly enforced by thorough monitoring of operations. And it includes a firm commitment from Congress that compliance with its stipulations and promises will be monitored and enforced.

Surely these requests are not unreasonable.

Recommendations

- 1. The federal resource agencies should review all federal oil spill contingency plans and that the plans should specifically include the following:

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1) evidence from peer review that the recommended equipment (booms, skimmers, etc.) is REALLY the Best Available Technology (BAT);

2) provisions that the BAT is stockpiled at the sites designated in the new contingency plans (i.e., Alyeska, CIRO, hatcheries, etc.);

3) provisions that the BAT is also stockpiled on site at boat harbors (i.e., Cordova, Seward, Kodiak, Homer, Ketchikan, Sitka, etc.) in sufficient quantities to enable the rapid deployment of men and equipment to protect critical habitat areas which should be pre-designated in the appropriate contingency plan;

4) provisions for oil industry-sponsored annual sessions to train hatchery personnel and fishermen in boom deployment and other containment/recovery techniques;

5) provisions that the ability to implement the plan rapidly be maintained at all times; and

6) review provisions to clarify that the contingency plan applies to ANY oil spill in Prince William Sound attributed to ALL marine vessels in trade with the Alyeska terminal.

- II. The federal agencies should review the dispersant and burn policies from the perspective that these methods do not remove the oil but disperse it into other compartments, specifically:

1) determine the short- and long-term toxicities of these methods on sea life, wild life, human life, and the environment;

2) determine the effectiveness of these methods at dispersing Prudhoe Bay crude oil, unweathered and weathered, in subarctic marine environments;

3) include the option of burning U.S. flagship tankers to mitigate environmental damages from large oil spills.

- III. The House Interior Committee which has jurisdiction over the TAPS legislation should require cutting back pipeline throughput until Alyeska is able to physically comply with all regulatory air and water quality stand-

1) the Alyeska owner companies be in immediate compliance with all terms and conditions of the state and federal water and air quality standards;

2) federal agencies take all necessary enforcement steps to ensure permit compliance regardless of any appeals taken under pending NPDES or other permits;

3) federal agencies take all steps to expedite review and appeal processes regarding permits for the Alyeska terminal;

4) order a review of the entire Alyeska terminal, including the ballast water treatment system, by the Department of Interior or, an independent consulting firm, as per the Congressional stipulations in the TAPS legislation; and

5) authorize an air quality expert to review the Alyeska terminal to prevent significant deterioration of existing air quality (PSD review).

These engineering and PSD reviews are necessary both to upgrade the environmental pollution control systems (which has never been accomplished in 12 years of operation) and to determine what the facility needs in terms of number of crude oil storage tanks to ensure that there is adequate storage capacity for oil at the terminal should there be an emergency or weather related delay in tanker traffic requiring that pipeline throughput be slowed or stopped. Currently, because of the inadequate number of crude oil storage tanks, the oil companies are forced to bring tankers into the port in hazardous conditions despite the danger to the environment and the public.

In addition, the House Interior Committee should:

6) request that, since the Alyeska terminal is not operating under the original stipulations and was not designed to treat heterogeneous wastestreams, all oily waste from the EXXON VALDEZ oil spill which cannot be properly treated to meet existing air and water quality standards be sent to refineries in the Lower 48 for disposal; and

7) review, clarify, and update the TAPS liability fund from the perspective that it should be <u>incorporated into, not eliminated from</u> the Superfund

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- IV. The federal government should take immediate measures to set up, and have Alyeska fund, Technical Advisory Groups (TAGs) (Appendices B and D) at oil industry facilities that handle or process Prudhoe Bay crude oil, including Alyeska, the North Slope, Cook Inlet, etc., and that these TAGs are specifically:

  1) modeled after Sullum Voe, U.K., Santa Barbara County, CA, or similar programs;

  2) composed of representatives from local communities, the fisheries, and the hatcheries, if appropriate, because it was demonstrated in the Exxon Valdez oil spill that the local people are the most responsive in an emergency, took the most constructive actions, were the most knowledgeable about the local area, and were the most concerned about their welfare, environment, and resources;

  3) mandated to oversee, monitor, and review operations, including oil spill contingency plans, as primary goals;

  4) empowered to contract independent consulting firms to achieve primary goals; and

  5) empowered to enforce permit compliance through stiff penalties.

- V. The federal resource agencies' budgets should be increased so that these agencies can:

  1) be equipped with the staff, money, and time to pursue all cases involving spilled oil, realizing that fines collected from tanker owners could potentially exceed the cost to the federal government of hiring additional personnel (and we encourage this at the state level as well); and

  2) review oil spill regulations, including the TAPS fund in consultation with the UFA and the appropriate regional fishing organizations, and raise the penalties so that these agencies can impose realistic, stiff fines for spilling oil; and

  3) investigate the oil spill clean up technologies and methodologies used [illegible] from the perspective of targeting containment and mechani-

cal removal with the best available technology as the primary oil spill response for this country.

Appendix A

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Appendix B

Worldwide Examples of Best Available Technology

Sullum Voe Terminal, Shetland, United Kingdom

A consortium of oil companies, including five of the seven sisters at Alyeska (BP, Exxon, Amerada Hess, Mobil, and Phillips), own and operate the North Sea oil terminal, Sullum Voe, in Shetland. The facility is similar to Alyeska in physical location (fjord with narrow entrance, weather conditions) and throughput (1.5 million barrels per day [mbd]), but vastly different in operation (see attachments).

The Alyeska facility looks good on paper, but is far inferior to Sullum Voe in practice. Differences between the two terminals include, but are not limited to, the following (Sullum Voe = SV; Alyeska = A):

Vessel Traffic Control System

1) SV: tankers report in to terminal when 200 miles from destination with speed and course
   A: tankers report in ETA only
2) SV: radar coverage from open sea entrance to destination and vice versa
3) SV: pilot coverage from open sea entrance to destination and vice versa
4) SV: automatic provision for pilot transfer by helicoptor during bad weather conditions; no transfers during extremely bad weather
   A: Jan. 89 transferred pilots by boat during 50+ kt winds, 12' seas, and icing conditions
5) SV: aerial surveillance of tankers for oil spillage and course deviations
6) SV: "no go" areas
   A: tanker lane in Prince William Sound is not mandatory
7) SV: 10 mile rule (10 mile distance from coastline beyond open sea entrance mandatory)

Terminal Operations -- Tanker Loading

8) SV: loading may be shut down for minor violations of port regulations
   A: DEC issued more than 150 "notices of violation" to tanker operators in the past five years for oil spills, but only once (8/84) collected

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a penalty of $3495 from a 2,500 gal. spill (*Anchorage Daily News* 3/5/89)

9) SV: flow shut down capability (in emergencies or bad weather)
10) SV: visibility limits for berthing -- firm (never waived)
11) SV: wind limits for berthing (35 knots [kts])-- firm (never waived)
12) SV: wind limits for loading (50 kts) -- firm (the port is frequently closed due to weather conditions and the amount of down time is published in Lloyd's list weekly)
A: during Jan. '89 storm tankers berthed with winds as high as 65 kts
13) SV: tractor tugs used in combination with twin screw tugs; four tugs used per tanker (two tugs as back up)
A: no tractor tugs
14) SV: inert gas regulation (maximum 8% oxygen levels in empty tankers)
15) SV: tankers allowed to load "dead crude" only (oil off-gased first)
A: tankers allowed to load directly from pipeline and vent directly into atmosphere
16) SV: all spills, no matter how small, reported in public monthly
17) SV: rogues gallery -- computer with comprehensive history of all tankers available at terminal so port authority can identify problem tankers
A: only carries list of U.S. tankers which have previous history with U.S. Coast Guard
18) SV: safety checklist for departing and arriving tankers with marine officiers fully qualified to inspect vessels of this size closely board every ship

Oil Spill Contingency Plan

19) SV: frequent regularly scheduled drills of oil spill response team
20) SV: annual exercise of oil spill response team and all equipment; press invited
A: has conducted only sporadic drills & has cancelled ongoing drills because poor performance (*New York Times* 4/3/89)
21) SV: permanent mooring points for booming environmentally sensitive areas

Monitoring Programs

22) SV: independent, multi-disciplinary, technical advisory group to coordinate rigid environmental monitoring program (see Appendix D for suggested parallel program at Alyeska)
23) SV: technical group to advise on oil spill containment & recovery

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Oil Spill Response, Norway

Norway has banned the use of chemical dispersants to treat oil spills in its country; instead, Norway relies on mechanical clean up and recovery. Five oil spill response teams, composed of trained professionals, are stationed at locations along the coast. The teams are composed of 125 men each; each team has a complete back up team (10 total) with two month shifts. The teams are subsidized by the oil industry and maintained by an independent contracting firm.

Dow Chemical/UpJohn plant, New Haven, CT

The Dow Chemical/UpJohn plant in New Haven, CT, uses a biological treatment system with off gas capture. The plant processes oil as well as other chemicals. The off gas capture system is used primarily to remove volatile hydrocarbons -- BETX -- from the air. The biological treatment system is COVERED, unlike at Alyeska, by an inflatable building. The air is recirculated; contaminated air is drawn off through a carbon adsorption system. The ultimate aim, according to company representatives at the plant, is to install stripping towers (with off gas capture) to reduce the BETX in the effluent to acceptable levels.

The impound basin for the biological treatment system at the Dow Chemical/UpJohn facility covers a two acre site. Wastewater flows through the impound basin at a rate of 400 gpm (compared to Alyeska's maximum rate of 20,000 gpm). Sludge collects at the bottom of the basin and is removed DAILY. The sludge is then encased in concrete for permanent burial.

Operations at the Dow Chemical/UpJohn plant bring several important concerns to light. First, when a biological treatment system is utilized as BAT in other areas, the plant simultaneously utilizes an off gas capture system so that BETX are not merely transferred from the water into the air but are, in fact, removed and destroyed. Second, stripping towers with off gas capture are also considered BAT and could be relatively inexpensively and easily installed at Alyeska. Third, where is the sludge at Alyeska? In the Lower 48, sludge is handled with extreme caution to ensure that these compounds are destroyed (sludge incinerators) or permanently removed (burial). The U.S. Navy operates oily wastewater treatment facilities at all major shore installations: their dissolved air flotation cells generate up to 100,000 gallons per day of sludge (Karr & Lysyj -- see attachments). Yet Alyeska claims to be doing the impossible: operating an oily wastewater treatment system that does not generate sludge.

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Stripping towers with off gas capture have been the subject of several recent memorandums between the Cordova District Fishermen United (CDFU) and Charles Hamel and the parent owner companies (see attachments). The CDFU and Hamel suggested stripping towers as a viable technology that would enable Alyeska to meet the state's air and water quality standards. Alyeska rejected this technology because of the complications involved with pumping the water in the impound basins up to the level of the stripping tower. However, Alyeska completely overlooked the fact that the physical differences in height between the dissolved air flotation cells and the impound basins would enable the stripping towers to be operated by gravity, not pumps.

It is time to have an independent engineering firm audit the entire terminal and offer an opinion, in addition to Alyeska's, as to what technology is needed by the terminal to meet the proposed NPDES permit requirements. Similar problems have been addressed by citizens and communities concerned with air and water quality issues in the Lower 48.

Santa Barbara County

The Energy Division of the Santa Barbara County Resources Management Department operate two monitoring programs with 100% cost offset provided by the oil companies which drill in the Santa Barbara Channel. The Environmental Quality Assurance Program is designed to monitor the oil companies during construction phases to ensure that the companies do the things they said they would do. The Permit Compliance Program is designed to monitor the oil companies during the construction and operation phases to ensure the facilities are meeting the appropriate standards. In both programs, the County contracts and pays expert consultants to oversee the oil companies. The County is then reimbursed by the oil companies each month. Three months worth of contract fees are held in bond in case the oil industry's payments are delayed. If the oil industry does not pay the County for three months and the bond money is utilized, the County is empowered to shut down the oil companies.

In addition, the Santa Barbara County permits are written with "reopener clauses." These clauses list specific conditions which, if not met by the oil industry, will automatically trigger reopening of the permit instead of having to wait for the permit to expire. The importance of including reopener clauses in both the EPA NPDES permit and the state's 401 certification for Alyeska should not be underestimated.

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Appendix C

Contacts for BAT in Lower 48

Socio-Economic Mitigation Programs
Mike Powers
Socio-Economic Monitoring and Mitigation Program
Santa Barbara County
(805) 568-2546

Biological Trt Sys.; Fishermen Mitigation Programs
Bill Douros
Resources Management Department/Energy Division
Santa Barbara County
(805) 568-2040

Tanker Emissions
Sam York
Air Quality Management District/Petroleum Section
Los Angles County
(818) 572-6223

Duane Bordvick
Tosco Refinery Manager
Los Angles County
(refer to York for number)

Drafting Permits, Rules for Air & Water Emissions
Niel Moyer
Director Rules Division
Los Angles County
(818) 572-6283

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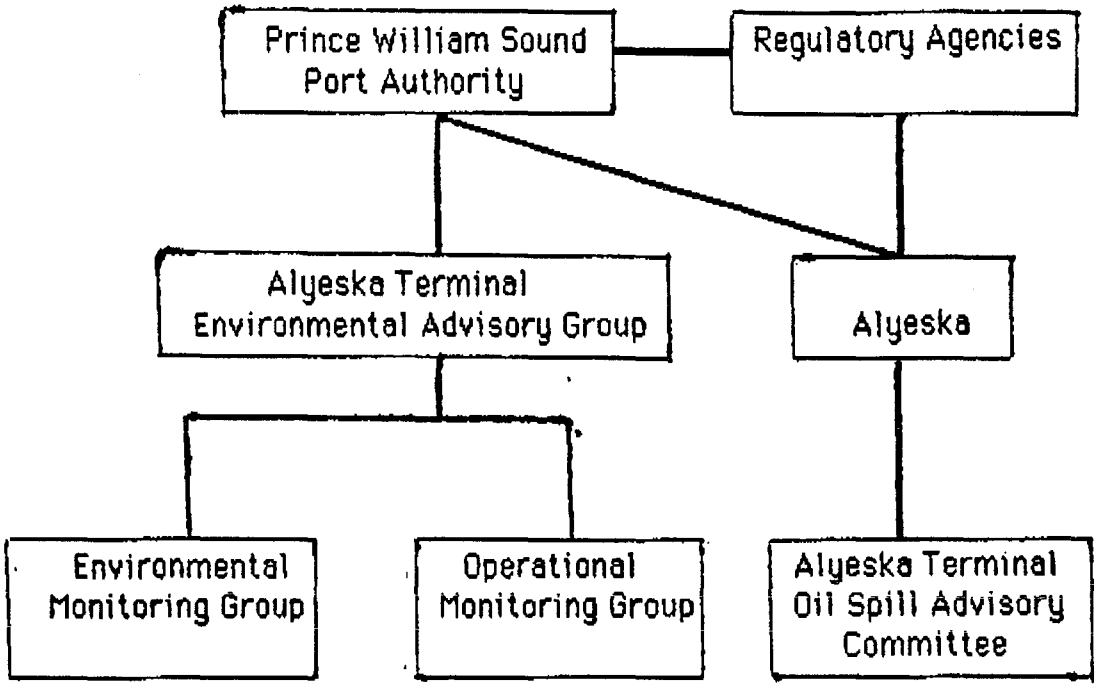
Appendix D



Potential PWS Port Authority Members
EPA
DEC (State Trustee for Natural Resources)
NOAA (Federal Trustee for Natural Resources)
Alyeska
Oil Company Owners Committee Representative
University of Alaska
Cordova District Fishermen United
PWS Conservation Alliance
Trustees for Alaska
City Council (Valdez, Cordova)
Alaska Department of Fish & Game
National Institute of Health and Safety

Observers
Pollution Control Superintendent Alyeska
DEC & EPA water and air pollution experts

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Hatcheries (PWS Aquaculture Corporation, Valdez Fisheries Development Association
Regional Response Team Representative
NMFS Marine Mammal expert
Fish & Wildlife expert
NOAA Bird expert
U.S. Department of Forestry or Department of Natural Resources representative