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The guidelines will not be mandatory regulations, but rather will represent the overall policy view of the EPA and consulting agencies. The EPA has similar guidelines in place to determine human health effects from pollution exposure.

The EPA held a workshop on the guidelines on 14 May. Attendees — including the USCG and Fish and Wildlife Service — discussed a draft distributed at the meeting, *Framework for Ecological Risk Assessment*. The draft defines ecological risk assessment and explains how agencies would apply the guidelines. It also details the issue of hazard assessment, a method used to determine how to weigh different types of evidence. The meeting is one in a series held in 1990, and continuing in 1991. The EPA has recently released a summary of the 1990 meetings. For a copy of the *Summary Report of Issues in Ecological Risk Assessment* (EPA-625-3-91-018) or the *Framework for Ecological Risk Assessment* (OHEA-F-412), contact the EPA's document service at Tel: 1 202 382 7317.

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16 May 1991

MEPA Outlines Five-Phase Cleanup Plan for the Persian Gulf

Officials at the Meteorological and Environmental Protection Administration (MEPA) in Saudi Arabia have outlined a five-phase cleanup plan to address oil contamination from the Persian Gulf oil spill. In addition, they've identified 64 sites that need cleanup, including environmentally sensitive areas such as turtle nesting grounds, salt marshes, and mangrove reefs. Currently, MEPA is recovering oil from Tanaqib to Abu Ali, Saudi Arabia. Rick Laubscher, a spokesman for Bechtel (a cleanup contractor working with MEPA), reported that overall activities are going well. "You can still see some sheen and a little mousse, but you have to look hard to see large patches of oil on the water. Most of that oil has been removed," he told **OSIR**. Laubscher estimated that 500 km of shoreline have been impacted by the spill.

MEPA has broken cleanup activities into five phases: 1) protection of critical facilities; 2) removal of oil from the water; 3) protection of environmentally sensitive areas; 4) beach cleanup; and 5) remediation/oil disposal. Laubscher reported that responders had completed phases one and two, were working on phase three, and had just begun phase four. MEPA officials are working with representatives at King Fahd University to prioritize the 64 cleanup sites and are paying special attention to environmentally sensitive areas, though they have not yet assigned responders for all of the 64 sites. Four organizations are carrying out cleanup activities: 1) MEPA, under contracts with Bechtel to coordinate all cleanup efforts and provide logistical support, and Crowley Maritime to carry out shoreline recovery and cleanup; 2) Saudi Aramco, which is conducting some shoreline cleanup and focusing on protecting industrial facilities; 3) the Saudi Arabian Royal Commission, which is involved in some cleanup and industrial facility protection; and 4) the International Maritime Organization (IMO), which is addressing environmentally sensitive areas.

MEPA, Aramco, and the Royal Commission worked to protect industrial facilities in the early days of

the spill. To date, it's believed that no oil impacted these facilities and any danger, particularly to the desalination plants, has been averted. MEPA and the other responding agencies have almost completed their efforts to remove oil from the water. According to MEPA spokeswoman Jennifer Freedman, the total amount of oil recovered by MEPA, the Saudi Arabian Royal Commission for Jubail and Yanbu, and Aramco was nearly 69 million gallons as of 10 May. Responders are using traditional mechanical methods to contain and recover oil, including booms, skimmers, pumps, vacuum trucks, and sorbents.

Responders focused early recovery efforts on the Saudi Arabian areas of Manifah, where Aramco is still working to collect floating oil visible in the port, and Abu Ali, where MEPA has recovered the largest amount of oil. Freedman reported that "little oil remains recoverable there [in Abu Ali], so operations have moved to other sites."

Crews are removing oil and placing it in about a dozen lined pits, stretching from Abu Ali to Tanaqib. The pits are intended to be temporary, according to Laubscher, and are located in "natural catch areas along the shore." The disposal of this oil is "a real question," Laubscher reported. "In one pit, there's as much oil as the whole Valdez spill [nearly 11 million gallons]," he said, referring to it as an "unprecedented situation." All of the responders are currently evaluating the best way to dispose of the oil, he added. Freedman told **OSIR** that an assessment team "went into the field a couple of days ago [the week of 6 May] to survey the coastline from Tanaqib to Manifah [Saudi Arabia] and came up with a game plan for operations there."

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booms around the salt marshes, and will be involved in a project in Musallamiyah Bay, Saudi Arabia, to test various cleanup techniques for those sensitive areas. Crews will use high volumes of water to flush oil from the marshes and then skim the oil off the water.

Likewise, the IMO has cleaned mangrove reefs on Gurmah Island, Saudi Arabia. Crews flushed the free-floating oil from the mangroves and oil from the natural drainage system, and cleaned some mangroves by hand. All of IMO's activities are funded out of its newly established Persian Gulf trust fund. To date, the UK has contributed one million pounds sterling (US \$1.75 million) and Japan has given US \$1.5 million. The European Community has pledged US \$1 million and Luxembourg has given 40 million Luxembourg francs in equipment and services.

Laubscher said that MEPA and other responding agencies are currently determining the scope of beach cleanup in the area. "It's not a high priority at this point," he noted, except for environmentally sensitive areas. He pointed out that in some areas layers of tar existed before January, making it difficult to determine what cleanup activities to undertake. "No one's suggesting that every drop of oil will be removed," he said. "This is obviously an unprecedented situation. This is not like other spills where a culprit could be held accountable. This culprit has not offered to help."

Italian Coast Guard May Pump Oil from Haven

Italian Coast Guard officials are currently conducting surveillance operations in an attempt to determine whether they should begin pumping oil from the Haven, a Cypriot tanker that sank near Genoa, Italy. Officials are using the Rajno 2, a research vessel specializing in underwater surveillance, to inspect the ship, and will decide the week of 20 May whether to remove the remaining oil.

Estimates on the amount of oil left in the vessel range from 1.8 million gallons, according to insurance underwriters, to 8.8 million gallons, according to environmental groups. Until it has completed inspections, the Italian Coast Guard will not confirm any amount except the 42 million gallons of oil that the ship was carrying when it sank on 14 April. Not including the oil that burned in a series of explosions that caused the ship to sink (see **OSIR**, 18 April), sources on-scene estimate that between 12 and 14 million gallons of oil have leaked into the water.

Some **OSIR** sources said that it's unlikely that extensive beach cleanup will take place. Crowley Maritime was awarded a contract to recover oil on beaches, but it's currently unclear whether the company has begun work. There is also confusion over whether oil continues to leak in the area. MEPA's Freedman reported that "at least one tanker is ... leaking" and that "a few barrels an hour may be leaking from one of the terminals," though she did not specify which terminal. Freedman reported that oil leaking from the Al Ahmadi, Kuwait, terminal "was stopped by an intentional effort on the part of unknown parties." However, on 1 May, the Environmental News Service quoted accounts by eyewitnesses who reported seeing fresh oil leaking from the Al Ahmadi terminal. The report also mentioned possible damage to the Al Zoor desalination plant in Kuwait. ENS referred to leaking oil tanks in Al Zoor and Al Abdullah, Kuwait, and mentioned a damaged tanker, Al Faou, which may break apart in rough seas three km from the Al Ahmadi terminal (**OSIR** was unable to confirm any of these reports). Freedman said that information coming from Kuwait at this time is sketchy. It is known that the Norpol vessel Al Waasit is conducting skimming operations off the coast of Kuwait, though sources reported that the presence of mines is making the vessel's work difficult.

According to Mariano Pane, chairman of Ecolmare, a cleanup contractor at the site, leakage of fuel oil from the ship has been heavy at times (nearly 300 gallons per hour) and then would stop for "no apparent reason." At one point, the Coast Guard reported that no oil remained in the ship's hull and then said that the oil had hardened in the hull. Currently, the consensus is that the oil remains in the hull in a liquid form. Underwater diving teams have patched most of the holes in the vessel.

Oil continues to wash up on Italian and French shores from Genoa, Italy, to St. Tropez, France, mostly in the form of tar balls and tar mats. The Italian Coast Guard cleaned up some of the oil on Italian beaches but some still remains. Italian government agencies — the Ministry of Civil Protection, Ministry of the Environment, and Ministry of Merchant Marine — are expected to award cleanup contracts the week of 20 May to further address shoreline contamination.

Oil continues to hit the French coast sporadically. Most of the oil has been cleaned up on the beaches and capes. However, Roger Kantin, a spokesman for CEDRE (the Center for Documentation, Research, and Experimentation for Pollution Accidents in the Water of France), said that oil still remains in some rocky cliff areas inaccessible by land or sea. There are two types of oil hitting the French coast, says Kantin: residues from burning, which are heavy and solid, and emulsified oil, which is extremely viscous. The French government has asked tourists and residents to

pick up oil spotted on beaches, place it in plastic bags, and bring it to recycling facilities. It is impossible to remove the oil by mechanical methods because it's too spread out, said Kantin. He expects tar balls to continue to hit the French beaches for several months. Some of the oil from the spill was "stranded" in the first days of the spill, he reported, and no one is exactly sure if the oil dispersed. There could be some additional slicks in Italian waters, he said. Currents traveling east to west and easterly winds are likely to push these slicks towards the French coast.

Exxon, Alaska, DOJ: Is a New Settlement in the Works?

Rumors continued to swirl the week of 13 May that a new settlement is in the offing between Exxon Corporation, the US Department of Justice (DOJ), and the state of Alaska. Exxon withdrew from a 13 March settlement after a US judge and the Alaska House of Representatives both dealt blows to the agreement (see **OSIR**, 9 May). Newspapers in Alaska reported that Alaska Attorney General Charles Cole had asked Exxon, through the DOJ, to begin renegotiating the settlement. Cole could not be reached for comment.

In a related development, Alaska Governor Walter J. Hickel stated on local Alaska radio and television programs that it's unlikely he'd bring a new settlement before the state legislature. The Alaska House of Representatives rejected the previous settlement and outlined a series of conditions necessary before it would approve a new agreement. It asked that Exxon pay more money up front and that the legislature have more say over how the money is spent. Before the first settlement, Hickel had stated publicly that he would send any settlement to the legislature for its approval, even though he was not required by

Alaska law to do so. However, the Alaska legislature is currently debating a law that would require it to approve any settlement concerning the Exxon Valdez spill. That bill is currently being considered by the Senate Judiciary Committee.

Terence O'Malley, a spokesman for House Majority Leader Max Gruenberg, said he believes that Alaska public opinion favors the legislature reviewing the final agreement. "We don't think he [Hickel] can afford not to [send the agreement before the legislature]," he commented. However, other **OSIR** sources see Hickel's recent move as a final attempt to come to a settlement agreement. Sources argue that Exxon would never agree to the stipulations outlined by the legislature. "The only chance for a settlement is to bypass the legislature altogether," one source commented. Another source noted that public opinion in Alaska was in favor of the settlement prior to US District Judge Russel Holland's rejection of Exxon's criminal plea bargain. "The whole landscape shifted after Holland's decision," said a source. "A lot of parties began thinking that they could get more out of Exxon."

World News Briefs

USCG Asks for Comments on OPA 90 Regulation

The US Coast Guard (USCG) is asking interested parties to comment on its plan to require vessels to install oil tank level or pressure monitoring devices. The US Oil Pollution Act of 1990 (OPA 90) requires shipowners to install these devices to reduce the impact of oil spillage. "We're trying to find out the answers to some questions," said Thomas Felleisen of the USCG marine technical and hazardous materials division. The USCG placed an advance notice of proposed rulemaking

in the US *Federal Register* on 7 May (page 2116). It will accept comments on the rulemaking until 4 October and will publish a proposed rulemaking four to five months after that time. Interested parties will also have a chance to comment on that proposed rulemaking. The USCG will publish a final rule after reviewing comments on the proposed rule.

In the 7 May notice, the USCG said that it is interested in hearing comments on how best to implement OPA 90's pressure monitoring requirements. The notice lists a number of topics that

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Port Users in Maine Implement Suggestions for Better Spill Prevention and Response
(November 1, 1990)

Portland, Maine, has grown to be the third largest crude oil importer on the east coast (after Delaware and New York). Representatives from local and federal government agencies, oil and shipping companies, and environmental groups in Maine and along the coast of New Hampshire have met every two months since June. On Wednesday, October 24, members of the Port Safety Forum met for the third time this year to discuss issues relating to oil spill prevention and response and offer suggestions for improvement.

USCG Captain John McGowen, commanding officer of the Marine Safety Office in Portland, reported that the initial USCG-sponsored meeting that sparked the forum was held in March of this year and involved 100 people. The large group was divided into smaller working groups of about 15 people that met separately with USCG personnel. The groups included: pilots; oil facilities; response contractors, including members of the USCG Atlantic Area Strike Team educational and environmental interest groups; shippers; and politicians, including staff from the governor's office, which recently formed a commission to deal with oil spill preparedness. "We asked everybody to check his lawyer at the door," joked McGowen. "We wanted it informal ... no value judgments. We asked for suggestions. If they were good, we acted on them."

The group has already addressed at least 60 suggestions, McGowen said. "We've implemented a number of these suggestions already. For example, someone pointed out that one of the facilities lacked a buoy at a difficult 90-degree turn. Though there had been no accidents there, it was risky. This was simple enough ... we installed a buoy within two weeks of the suggestion."

According to Tim Hendrix of Portland Pipe Line Corp., a group of terminal operators have also been considering the development of a local spill response organization, similar to a spill cooperative. Though still in its infancy stage, a number of terminal operators have visited spill cooperatives around the United States and have sought legal counsel as to the proper formation of such a group.

In addition to the meetings, the USCG continues to conduct drills in-house and out in the field (the last drill in September involved 20 agencies, 80 people, 6,000 feet of boom, and 400 pounds of popcorn). "I am extremely impressed by the cooperation," said Hendrix, who reiterated the importance of developing relationships prior to an emergency.

The next forum meeting will be December 12 in Portland. For more information, contact Captain McGowen, USCG MSO, P.O. Box 108, Portland, ME 04112; Tel: 1-207-780-3251.

\$2.3 Million Fine for Pollution Violations (November 1, 1990)

The 1990s, already referred to as "the environmental decade," have marked the beginning of the United States' crusade against oil spillers and various other polluters. As evidence of the crackdown, the U.S. Environmental Protection Agency and the U.S. Department of Justice recently fined British Petroleum Oil Inc. \$2.3 million for water pollution violations at its facility in Marcus Hook, Pennsylvania. The fine is the second largest penalty under the Clean Water Act in 13 years—since U.S. Steel was fined \$2.9 million in 1977 for pollution from its plant in Gary, Indiana.

According to the Department of Justice, British Petroleum Oil will pay \$2.191 million to the United States and \$109,000 to the Commonwealth of Pennsylvania—the amount that British Petroleum Oil saved by not installing wastewater treatment equipment necessary to comply with environmental laws. Though British Petroleum Oil is not the only polluter, the company has been a major contributor of pollutants in the Delaware River for over six years. According to scientists, polyaromatic hydrocarbons present in the oil and grease being discharged from the company have the potential to become concentrated in fish and shellfish to undesirable and unsafe levels, preventing fish from surviving or reproducing.

Pittsburgh Groups Develop Resources Manual (November 1, 1990)

The Center for Hazardous Materials Research (CHMR) at the University of Pittsburgh, together with the Pittsburgh/Allegheny County Mutual Aid Council (PAMAC), recently developed an "Emergency Equipment & Resources Manual" and similar database for the U.S. Coast Guard (USCG) and city and county officials in Allegheny County, Pennsylvania. The manual includes descriptive information, such as available quantities, location, and contacts, on more than 1,200 items available from 60 different facilities to assist in responding to oil spills and other community emergencies such as fires and explosions, weather and natural emergencies, and utility failures. Thirty-one companies agreed to participate. "This is believed to be one of the most comprehensive such efforts ever undertaken in the United States to compile information from the private sector on emergency response capabilities," said CHMR President Dr. Edgar Berkey. For more information, contact CHMR, University of Pittsburgh Applied Research Center, 320 William Pitt Way, Pittsburgh, PA 15238; Tel: 1-412-826-5320; Fax: 1-412-826-5552.

Starbeck Markets Natural Cork Absorbent (November 1, 1990)

There have been many newcomers to the spill cleanup business since the Exxon Valdez dumped 11 million gallons of crude oil in Alaska. An interesting trend among this new crop of manufacturers and dealers is the push for "natural" products, particularly for bioremediation and absorbent material.

Starbeck Environmental Products in San Diego, California, for example, has begun marketing cork, a nontoxic, reusable, effective granular absorbent. Cork Absorbent Products (CAP) are available in four sizes: 4 ft long, 4 in diameter (20 for \$125); 10 ft long, 8 in diameter (2 for

\$275); 10 ft x 10 in (1 for \$158); 18 in long, 16 in wide (10 for \$179); or a 10 lb bag for \$49.95. For information, contact Len Starbeck, Starbeck Environmental Products, 13415 Appalachian Way, San Diego, California 92129-2601, Tel: 1-619-484-8019; Fax: 1-619-484-8019.

Texas A&M Offers 1991 Oil Spill Control Courses (November 1, 1990)

The Texas Engineering Extension Service (TEES) of Texas A&M University recently scheduled its 1991 courses. Various spill prevention, response, and safety courses are given, including a five-day course given 12 times on Oil Spill Control (cost: \$895); a five-day course given 11 times on Inland Oil Spill Control (cost: \$895); and a three-day course given twice on Oil Spill Dispersant Application Management Training (cost: \$600). For a copy of the course catalog, contact the Occupational and Environmental Safety Training Division, Texas Engineering Extension Service, The Texas A&M University System, College Station, Texas 77843-8000; Tel: 1-409-845-3418; Fax: 1-409-845-3419.

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US Government Report Describes 1990 Natural Resource Damage Assessment and Restoration Plan for the Exxon Valdez Spill

State and federal government officials recently issued a report for public comment that describes the *1990 State/Federal Natural Resource Damage Assessment and Restoration Plan for the Exxon Valdez Oil Spill*. The Natural Resource Trustee Council in charge of the program includes representatives from the Alaska Department of Fish and Game (ADF&G), who are acting on behalf of the State of Alaska, and from the federal Departments of Agriculture (DOA), Commerce (DOC), Interior (DOI), and the National Oceanic and Atmospheric Administration (NOAA), who are acting on behalf of the United States. The Environmental Protection Agency (EPA) is also involved in damage assessment and is coordinating the federal restoration efforts with the State of Alaska.

The report describes the second year of the process by which "damages will be assessed so that funds to restore impacted resources or the services the resources provided can be sought from those responsible for the Exxon Valdez oil spill." The 1990 damage assessment studies plan builds on the 1989 damage assessment studies (see **OSIR**, 24 August 1989), which were designed to determine the nature and extent of the injuries, loss, or destruction of resources and make it possible to determine damages. According to the plan, the assessment of damages for injury to natural resources requires consideration of: the nature of the resources at risk; the nature of the oil in the aquatic environment; the exposure of the resources to the oil; and oil-related damages to important resources.

"The purpose of determining damages — the estimated monetary value of the injured resources and the cost to restore those resources and the services they provided — is to pursue a claim against parties responsible for the spill," says the report. "Funds received as the result of the claim will be used to restore, replace, or acquire the equivalent of the injured natural

resources and services and to reimburse agencies for relevant costs incurred." The US Department of Justice and Alaska Department of Law represent the federal and state governments, respectively, in pursuits of claims.

In 1989, the trustees developed a damage assessment plan that incorporated 63 studies in ten categories. The trustee council monitored the assessment process to ensure that study objectives were met; consulted damage assessment investigators, other agency scientific staff, legal counsel, and independent outside expert reviewers; and considered the comments of more than 75 reviewers representing industry, environmental groups, public agencies, and individuals who submitted their reviews during the written comment period. The trustees evaluated the studies from five perspectives: "1) immediate injury; 2) long-term alteration of populations; 3) sublethal effects; 4) ecosystem-wide effects; and 5) habitat degradation." As a result of the review, the council continued and/or modified 47 studies, discontinued or merged 26 studies, and initiated four new studies.

The studies described in the 1990 plan, for the period 1 March 1990 - 28 February 1991, are estimated to cost approximately \$37 million. The report groups them into ten categories:

1) Coastal habitat. The coastal habitat study measures spill-related changes in the supratidal, intertidal, and shallow subtidal zones. It is designed to document injury to resources that rely on these habitats, and to assess damages for the loss of services provided by these habitats.

2) Air/water. The air/water studies determine the distribution and composition of petroleum hydrocarbons or their environmental conversion products in water, sediments, and living resources. This information provides a basis for documenting exposure and for determining injury to resources. The combined results of the coastal habitat and

air/water studies also form a basis for estimating rates of recovery of natural resources and the potential for accelerating recovery.

3) Fish/shellfish. The fish/shellfish studies focus on identifying potential injury to their various life stages in areas affected by the oil spill. Researchers selected species for study based on their respective niche or overall importance within the ecosystem, their ability to be sampled, and the existence of an historic database.

4) Marine mammals. Marine mammal studies include direct observations of injury (e.g., through carcass counts) as well as estimates of population effects based on pathologic and toxicologic indicators.

5) Terrestrial mammals. Terrestrial mammals near the coast may have been exposed to hydrocarbons by breathing fumes and eating oiled carcasses or vegetation. The studies will determine the presence of hydrocarbons in tissues of dead animals, and the effects, if any, of oil exposure on local populations of brown bears, Sitka black-tailed deer, and river otters. Researchers are also conducting studies of reproduction in laboratory mink to serve as a model for assessing injury to other potentially affected species.

6) Birds. The plan for determining injury to birds is organized into four units: surveys and censuses; raptors; sea birds; and waterfowl, shorebirds, and passerines. The information obtained will contribute to an understanding of mortality, population changes, and other factors essential for the damage assessment process. Studies proposed for birds focus on improving the accuracy of mortality estimates and collecting data on survival and reproductive success in relation to exposure to hydrocarbons and conversion products. Researchers will gather these and other data on birds potentially most affected by the spill or best serving as indicators for impacts on other important ecological components.

7) Technical services. The technical services category includes activities that provide process

support or information services to all studies in the areas of analytical chemistry, quality assurance/quality control for the damage assessment process, histopathology, and an integrated geographic information system, complete with mapping.

8) Restoration. The restoration plan describes the strategy and scope of the restoration process and feasibility studies planned for the second oil spill year. Restoration measures will be implemented as soon as they become ecologically feasible, appropriate methods are identified, and funds are available.

9) Historic properties and archeological resources. Studies on historic properties and archeological resources will proceed in two steps: inventory, description, and classification; and qualitative and quantitative descriptions and measurements of changes detrimental to the archeological resources related to the spill.

10) Economics. The value of lost or injured natural resources, and the goods and services they provide humans, are based on results from economic studies. In this regard, damages forming the basis of the trustees' claims against the potentially responsible parties are calculated by considering: the reduction of these goods and services, including intrinsic values, resulting from the spill; and the cost of restoring these goods and services to their pre-spill level, replacing them, or acquiring their equivalent.

In a March 1990 letter to Exxon, the trustees asked that all state and federal injury assessment data be placed in a public repository. Exxon responded with a letter dated 6 June in which the company proposed a more limited data sharing arrangement. Within the next month, the parties agreed to establish a technical committee to seek agreement on an exchange of detailed study plans.

For a copy of the two-volume, 490-page 1990 report or the one-volume, 258-page 1989 report, contact the **OSIR** Hotline.

Harsh Canadian Weather Prevents Salvage of British Tanker

Since 16 October, when it ran aground and spilled about 26,000 gallons of bunker C fuel onto the coast of Anticosti Island in eastern Canada, the British tanker *Rio Orinoco* has moved about 100 feet and is now perpendicular to the shore (see the **OSIR** Hotline, 18 October). According to Canadian Coast Guard spokesman Richard

Lessard, the weather in the area has not improved; the winds are still 30-40 knots and high waves continue to wash over the ship. Rescuers, however, successfully picked up the crew by helicopter on Saturday, 20 October.

The tanker, owned by Horizon Maritime Corp. Inc. of Fort Lauderdale, Florida, USA, is carrying

a 9,000-ton cargo of asphalt, which must be heated to form a liquid. Though the solid nature of the asphalt has kept the cargo intact, it has posed a problem for salvagers who must bring boilers to the scene for pumping, said Rod Hays of Hays, Stuart, Inc., marine surveyors in Montreal.

Though coast guard personnel boomed the ship, waves carried much of the bunker C from the ship's fuel tanks over the booms and onto patches of rocky shoreline along the island, which is largely uninhabited. According to Hays, the

island is mainly used for fishing and hunting. About 80 people are working only those segments of beach that are considered safe. Crews are removing the fuel with absorbents and by cutting and bagging oiled seaweed. Cleanup costs are expected to exceed Can\$6 million, Lessard told **OSIR**. "Environmental damages are not dramatic," he said. Lessard said rescuers have captured a number of oiled birds for cleaning. "We are just taking it day by day," said Hays.

New York Shuts Down Barge Operation for Pollution Violations

For the first time in New York's history, the state's Department of Environmental Conservation (DEC) Commissioner Thomas Jorling shut down three companies that handle oil in New York Harbor. The announcement came on Thursday, 18 October, just three weeks after the barge Sarah Frank sank off Staten Island in New York, USA, and spilled 50,000 gallons of waste oil into the Kill Van Kull waterway (see **OSIR**, 4 October). The operator of the Sarah Frank, Berman Enterprises, Inc., in Bayonne, New Jersey, was one of the three companies that are now required to halt all barge operations; the other two are related companies also in Bayonne — General Marine Transport Corp. and Standard Marine Services, Inc. The three companies are owned by the Frank family of New York, whose 45 companies have a 20-year history of civil and criminal environmental violations.

"Berman Enterprises and its related companies and officers have shown a complete disregard for marine safety and the environment for years," said Jorling. "They have flagrantly ignored the laws and regulations of New York, New Jersey, and the federal government. Their record of performance has convinced us that their continued operation presents an imminent

danger to public health and irreparable damage to the environment."

In the past, DEC has reportedly built numerous cases against the firms for oil spills, failing to notify DEC of a spill in a timely manner, and violations of New York's tidal wetlands and petroleum bulk storage laws. Two violations were settled in criminal court in early September. The USCG and the state of New Jersey have also cited the companies for operating barges without certificates of inspection, lying on applications about previous violations, and discharging sewage sludge into the New York/New Jersey harbor. The companies have also been guilty of at least 21 discharges of petroleum products into local waters. Recently, investigators of the Sarah Frank incident found that the barge had been operating with a USCG permit that expired in 1989.

Jorling's order revokes licenses issued to 14 of the companies' barges by December. The firms are required to store or dispose of any product currently held aboard the 14 barges within one week. Once the barges have been emptied, they must remain docked and cannot be operated in the New York Marine District.

World News Briefs

Pipeline Spills Fuel into Galveston Bay

On Sunday, 14 October, personnel at the Marathon Petroleum facility in Texas City, Texas, U.S.A., encountered trouble while attempting to repair a 20-inch pipeline at the facility. According to the US Coast Guard Marine Safety Office in Galveston, Texas, the pipeline's vacuum was lost, and approximately 11,550 gallons of #2 fuel oil spilled into Galveston Bay.

Marathon Petroleum hired Malin Environmental to conduct cleanup operations. Cleanup crews recovered an estimated 6,300 gallons of product using four vacuum trucks, four skimmers, 800 feet of containment boom, and 400 feet of sorbent boom. Because product remains below the rupture and there is potential for another spill, crews will leave containment boom in the area until they have fully repaired the damaged pipeline.

Lloyd's Holds Conference in Cyprus on Shipping and the Environment

On 14-15 November, *Lloyd's Ship Manager* and *Lloyd's Shipping Economist* will sponsor a conference in Cyprus entitled "Shipping and the Environment: User or Abuser?" Organized by Lloyd's of London Press, the conferees will "discuss the problem of marine pollution in detail, and will examine governmental, legislative, and industry responses that have been developed so far, as well as possible new initiatives." The second day of the conference will be devoted to oil spill legislation, "and its impact on shipbuilding, tanker construction, and future liability and insurance regimes." Cost: 495 pounds sterling. For more information, contact the Conference Department, Lloyd's of London Press Limited, One Singer Street, London EC2A 4LQ, UK; Tel: 44-71-250-1500; Fax: 44-71-253-9907; Tlx: 987321 Lloyds G.

MMS Sponsors Free Meeting for Gulf of Mexico Issues

The US Minerals Management Service's (MMS) Gulf of Mexico Outer Continental Shelf (OCS) Region recently announced its 11th annual information transfer meeting to be held in New Orleans, Louisiana, on 13-15 November 1990. Among other topics, attendees will devote the afternoon on Thursday, 15 November, to discussing "new developments in oil spill response and response planning." Various speakers will present papers on such topics as: oil transportation in the Gulf of Mexico; logistics of the Mega Borg Galveston Bay spill response; logistics of the American

Trader spill response; dispersant use logistics in the Gulf of Mexico; MMS's unannounced oil spill drill program; and an update of the Gulf of Mexico states' oil spill contingency plans. Cost: free. For more information, contact Dr. Richard Defenbaugh or Connie Landry, Environmental Studies Section (MS 5430), MMS, 1201 Elmwood Park Boulevard, New Orleans, Louisiana 70123-2394, USA; Tel: 1-504-736-2864; Fax: 1-504-736-2610.

PennWell Announces New Directories

PennWell Books publishes books, maps, directories, charts, videotapes, and software in the energy field, and recently introduced its new list of directories for 1990/1991. The list includes directories such as: *North Sea Oil & Gas Directory, 1990/91*; *1991 Worldwide Petrochemical Directory*; *Eastern Hemisphere Set for 1991*; *European and Asia-Pacific/Africa-Middle East Petroleum Directories*; and *1991 Worldwide Pipelines & Contractors Directory*. In addition, the company plans to publish a manual in a few months entitled *U.S. Petroleum Strategies in the Decade of the Environment*. This book assesses the "outlook for regulatory and political changes spurred by recent events and throughout the 1990s as responsible environmentalism spans the globe." It will include chapters on the Exxon Valdez spill and crisis management. For more information, a copy of the company's Energy Catalog, or to purchase a product, contact PennWell Books, PO Box 21288, Tulsa, Oklahoma 74121, USA; Tel: 1-800-752-9764 or 1-918-831-9421; Fax: 1-918-831-9555; Tlx: 211012.

Hotline

If you would like more information on any article in this issue, contact the **OSIR** Hotline; Tel: 1-617-641-5110 or 648-8700; Fax: 1-617-648-8707.

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Report Describes 1990 Damage Assessment and Restoration Plan for the Exxon Valdez Spill (October 25, 1990)

State and federal government officials recently issued the *1990 State/Federal Natural Resource Damage Assessment and Restoration Plan for the Exxon Valdez Oil Spill* for public comment. The Natural Resource trustee Council in charge of the program includes representatives from the Alaska Department of Fish and Game who are acting on behalf of the State of Alaska, and from the federal Departments of Agriculture, Commerce, Interior, and the National Oceanic and Atmospheric Administration, who are acting on behalf of the United States. The Environmental Protection Agency is also involved in damage assessment and is coordinating the federal restoration efforts with the State of Alaska.

The report describes the second year of the process by which "damages will be assessed so that funds to restore impacted resources or the services the resources provided can be sought from those responsible for the Exxon Valdez oil spill." The 1990 damage assessment studies, which were designed to determine the nature and extent of the injuries, loss, or destruction of resources and make it possible to determine damages. According to the plan, the assessment of damages for injury to natural resources requires consideration of: the nature of the resources at risk; the nature of the oil in the aquatic environment; the exposure of the resources to the oil; and oil-related damages to important resources.

"The purpose of determining damages—the estimated monetary value of the injured resources and the cost to restore those resources and the services they provided—is to pursue a claim against parties responsible for the spill," states the report. "Funds received as the result of the claim will be used to restore, replace, or acquire the equivalent of the injured natural resources and services and to reimburse agencies for relevant costs incurred." The U.S. Department of Justice and Alaska Department of Law represent the federal and state governments, respectively, in pursuits of claims.

In 1989, the trustees developed a damage assessment plan that incorporated 63 studies in ten categories. The trustee council monitored the assessment process to ensure that study objectives were met; consulted damage assessment investigators, other agency scientific staff, legal counsel, and independent outside expert reviewers; and considered the comments of more than 75 reviewers representing industry, environmental groups, public agencies, and individuals who submitted their reviews during the written comment period. The studies described in the 1990 plan, for the period March 1, 1990 - February 28, 1991, are estimated to cost approximately \$37 million. The report groups them into ten categories:

- 1) Coastal habitat. The coastal habitat study measures spill-related changes in the supratidal, intertidal, and shallow subtidal zones. It is designed to document injury to resources that rely on these habitats, and to assess damages for the loss of services provided by these habitats.
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Australian Oil Industry Upgrades Spill Response Capabilities (October 18, 1990)

Though Australia has suffered from only a small handful of major spills, none of them as disastrous as the Exxon Valdez, the industry has taken major steps toward improving its oil spill response capabilities. In 1989, the Australian Institute of Petroleum (AIP) assigned a working group composed of oil industry personnel to assess the industry's oil spill response capabilities around the country and make recommendations for possible improvement.

AIP has successfully carried out some of the group's suggestions. As of a few months ago, the institute purchased A\$1.6 million worth of equipment to be stored at each tanker port. The upgrade ensures that all oil ports can respond to a small spill, which AIP defines as less than 200 tons.

The most recent development in spill response recommended by the group concerns the creation of a national oil spill response center, where enough equipment would be stockpiled to handle a 10,000-ton spill anywhere in Australia, the Pacific Islands, and New Zealand. If approved, will cost roughly A\$9 million and will be based in Melbourne. It will be modelled after the Southampton Oil Spill Response Center in the United Kingdom.

According to Rod Corinaldi, manager of AIP's Engineering Standards, Health, Safety and Environment Department and Ted Wayment, manager of AIP's Oil Spills and Training Department, Australia's current inventory of equipment could handle a spill of up to 1,000 metric tons. For larger spills Australia would need international assistance, from the Southampton Oil Spill Response Centre and the TARC facility in Singapore, for example. While rapid response from these organizations would be expected, it could be 48 hours before a major response could be developed, provided these organizations were not already engaged.

The AIP working group concluded that the largest spill from an oil tanker traveling in Australian waters would be about 30,000 tons (the Exxon Valdez spilled an estimated 36,000 tons). However, the group suggested that purchasing equipment to respond to a 10,000-ton spill would be sufficient.

Some experts suggested that equipment be stockpiled in several locations, rather than in one large center. But the working group believes that, "with the already accepted low level of probability of a major spill, such a duplication of a necessarily large stockpile would dilute the training advantages of getting to know all the stockpile equipment, would require more warehousing facilities and maintenance personnel, and would add to the logistical problems of mobilizing all the equipment in minimum time to the location of a spill." AIP is expected to make a formal announcement regarding the center shortly.

Exxon, Alyeska Favor Tapping TAPS Fund (October 18, 1990)

In papers filed October 9, Exxon Corp., Exxon Shipping Co., and Alyeska Pipeline Service Co. agreed with U.S. District Judge Russel Holland's tentative ruling that plaintiffs should exhaust the \$100-million Trans-Alaska Pipeline Liability Fund before they seek damages from oil companies in court. Holland temporarily suspended lawsuits filed in federal court until

the claims were processed by the fund, and asked for opinions from both sides regarding his decision. Exxon and Alyeska said using the fund is the "expeditious and efficient" way to handle claims against them regarding the 1989 Exxon Valdez spill.

Exxon Sells 33,000 Tons of Oil Spill Equipment in Anchorage (October 18, 1990)

The bulk of the equipment Exxon purchased to help clean up the 10.8 million gallons of oil spilled in March 1989 in Prince William Sound, Alaska, was sold to local bidders on Tuesday, October 9. According to newspaper reports, Exxon last month sold 33,000 tons of surplus equipment to Ritchie Brothers Auctioneers International of Vancouver, British Columbia, Canada. Ritchie Brothers, in turn, lured more than 8,000 buyers to a 50-acre industrial lot in Anchorage, Alaska, to auction off such items as inflatable power boats, aluminum skiffs, fishingnets and tackle, sleeping bags and mattresses, fire extinguishers, human models made for instruction in cardiopulmonary resuscitation, cranes, bulldozers, trailers, and all-terrain vehicles. Also available were 10,000 pairs of new cotton overalls, 10,000 disposable coveralls, 20,000 pairs of rubber gloves, and 3,000 sets of rain jackets and pants stacked in a warehouse.

Neither Exxon nor Ritchie Brothers has publicly disclosed how much equipment was sold or how much money was made. According to a spokesman from Ritchie Brothers, the items that didn't sell last week will either be used next summer or will go on sale again some time next year. For more information, contact Ritchie Brothers in Anchorage, Alaska, at Tel: 1-907-248-3508.

Lloyds Publishes Report on Shipping (October 18, 1990)

As a supplement to the magazine *Lloyd's Shipping Economist*, Lloyd's of London Press will release a new report on November 1 entitled "Shipping and the Environment—A Green Study."

Researched and written by Michael Grey, the report examines "the ramifications of new legislation and its impact on all aspects of the shipping industry worldwide." It covers such issues as liability, legal obligations, vessel design, operational procedures, accident pollution, tank storage, emissions, environmental restrictions, dredging, and hazardous wastes. The cost is 14.95 pounds sterling. For a copy of the report, contact Roz Thompson, *Lloyd's Shipping Economist*, Lloyd's of London Press Ltd., Sheepen Place, Colchester, Essex CO3 3LP, England; Tel: 44-206-772-277; Fax: 44-206-772-888.

Exxon Liable for Valdez Oil Spill (October 4, 1990)

*I think
(hope) this one
was pared down and
sent already*

The Exxon Corporation is "strictly liable" for the Valdez disaster, and should pay actual damages from the spill, regardless of fault, stated Alaska Superior Court Judge Brian Shortell. With liability clearly established, the issues that remain concern the amount of compensation and to whom compensation should be awarded.

Along those lines, Federal Judge H. Russel Holland in Alaska ruled that spill victims who suffered economic loss but no physical loss to their property can file legal claims against Exxon. Such a ruling could allow a significant number of additional plaintiffs a chance in court, the judge added.

While numerous plaintiffs prepare for what will likely be years of court battles, Exxon is devising a counter attack. According to United States Coast Guard (USCG) officials, the company recently filed claims against the federal government, saying that USCG was "wholly or partially" responsible for the Exxon Valdez spill. Though the claims do not represent a lawsuit, they most likely constitute a warning of things to come. If such claims are granted, they could cost the federal government billions of dollars. Among other issues, Exxon stated that USCG did not provide adequate navigation services to the Exxon Valdez when it ran aground, and USCG wrongly disapproved of using dispersants in the first few days after the spill. USCG says the claims are unfounded. According to Exxon, the company has already paid \$235 million in claims.

13th IOPC Fund Assembly Discusses 1984 Protocols (October 4, 1990)

The International Oil Pollution Compensation (IOPC) Fund held its 13th Assembly session in London on September 25-27, following the IOPC's 24th session of the Executive Committee held 24-25 September. Among the topics discussed was the Inter-governmental Oil Pollution Liability and Compensation System based on the 1969 Civil Liability Convention and the 1971 Fund Convention.

The Assembly decided to organize an Intercessional Working Group with the following mandate: To consider the future development of the intergovernmental oil pollution liability and compensation system by: (a) examining the prospects for the entry into force of the 1984 Protocols to the Civil Liability Convention and the Fund Convention; and (b) considering whether it would be possible to facilitate the entry into force of the content of the 1984 Protocols possibly by amending their entry into force provisions.

The Executive Committee addressed issues concerning a number of ongoing claims made against the Fund, as well as five or six new claims since the 23rd executive committee session last year. In its discussions, the committee reiterated the Fund's position that a "claimant [is] entitled to compensation under the Civil Liability Convention and the Fund Convention only if he has suffered quantifiable economic loss." The Executive Committee will meet again in September 1991.

JBF Scientific Skimmer Vessel Will Head for Alaska in October (October 4, 1990)

JBF Scientific Company, Inc., of Southwest Harbor, Maine, is working on the final outfitting of its \$5-million Valdez Star before the 123-foot skimming vessel begins its 42-day voyage in mid-October to Valdez, Alaska. JBF Scientific engineer, Pete Sarnacki, said JBF will launch a similar vessel to Puget Sound, Washington, in March 1991. Touted as the "largest oil spill recovery vessel built in the United States," the Valdez Star will travel first to Seattle, Washington, where it will be checked and repaired before continuing on to Valdez, where it will become part of the Alyeska Pipeline Service Company's Ship Escort Response Vessel System (SERVS). The revised 1990 Alyeska contingency plan mandates that two escort vessels accompany each vessel traveling through Prince William Sound: one to provide navigation assistance and one to provide immediate response in the event of an oil discharge.

The JBF skimming vessel employs the dynamic inclined plane (DIP) principle, which Sarnacki says can mechanically recover 63,000 gallons of oil per hour with demonstrated efficiency rates of up to 98% under calm conditions and 78% in "sea state 3." The DIP system on the Valdez Star uses a submerged conveyor belt that picks up surface oil with less than 1% water. "This eliminates the problem of having to store and dispose of oil-contaminated water," said Sarnacki. "This system never takes up the water." Sarnacki reported that on March 9, 1989, less than three weeks before the Exxon Valdez spill, JBF negotiated with Alyeska on the purchase of a smaller 120 LT vessel, similar to the North Sounder, which has been used by the Clean Sound (Puget Sound Oil Spill Cooperative) since 1982.

Florida Group Plans Oil Spill Control Conference (October 4, 1990)

The Florida Spillage Control Association, Inc. will sponsor its 15th Annual Spill Control Conference in Lake Buena Vista, Florida, on November 6-9, 1990. Representatives from industry and federal and state agencies will discuss such issues as: bioremediation methods; results of recent oil spill research by the Minerals Management Service (MMS); the Oil Pollution Act of 1990; training; and the implementation of the new Marine Spill Response Corp. (MSRC). In addition, more than 20 exhibitors will display various spill cleanup equipment. The cost is \$250-\$275 at the door, \$75 for an exhibitor's booth. For more information, contact Florida Spillage Control Assoc., Inc., P.O. Box 3005, Jacksonville, Florida 32206, USA; Tel: 1-904-355-4164; Fax: 1-904-355-4365.

NCSL Plans Legislative Seminar on Oil Spills (October 4, 1990)

On November 30, 1990, the National Conference of State Legislatures (NCSL) will sponsor a seminar entitled "Oil Spills and Coastal Protection: a legislative seminar to explore state policies for prevention, cleanup, liability, and compensation."

The seminar will be held in Santa Monica, California, where the governor recently signed into law the first comprehensive oil spill legislation package since the federal Oil Pollution Act of 1990 was signed. Legislators from over 30 coastal states are expected to attend. The seminar

will "examine the environmental impacts of oil spills and the technological issues surrounding cleanup; review the Oil Pollution Act of 1990 and related environmental and energy initiatives; and assess state legislative options for prevention, cleanup, liability, and compensation policies." The cost is \$75 for legislators, government employees, and nonprofit organization representatives; and \$150 for all other attendees. For more information, contact Larry Morandi or Leann Stelzer, NCSL, seminars department, P.O. Box 5303, Denver, Colorado 80217; Tel: 1-303-623-7800; Fax: 1-303-893-0705; (Tel: 303-830-2200 after October 26). The hotel reservation deadline is November 7.

Information for Oil Spill Professionals (October 4, 1990)

The following information is available from the *Oil Spill Intelligence Report*.

- **The International Oil Spill Control Directory.** A single-source guide to the international marketplace of oil spill control equipment and services. Includes comparative information on: booms, pumps, skimmers, sorbents, spill control chemicals, groundwater treatment products, dispersant spray systems, cleanup companies, training programs, and related products and services. Features the latest dispersant acceptance list and a cross-referenced index of products and manufacturers. Annual price: \$40, \$50 outside North America. Item Code: 01E
- **Cold Water Oil Spills.** State-of-the-art information on contingency planning, control, and cleanup, and the fate and effects of cold water spills. This report brings together all the latest data on cold water spills, including the results of recent and past scientific research studies and details on new spill control equipment. Filled with practical, hands-on advice, it examines the unique problems presented by freezing temperatures, strong winds, and floating ice. Price: \$100, \$110 outside North America. Item Code: 01P
- **Oil Spills: 1978-1985.** International spill statistics plus year end reviews. Includes a list of every major spill world-wide—date, location, source, number of gallons spilled and recovered, type of oil, etc; effects of major spills on the environment, legislation, regulations, cleanup methods; reports on claimants, liable parties, extent of liability, precedents established, and related rulings; Laws and regulations, IMCO restrictions, CLC protocol, U.N. Environmental Program action plans, and superfund, cleanup technology. Price per volume: \$215, \$245 outside North America. Volume I (1978-1981) Item Code: 01C. Volume II (192-1985) Item Code: 01D
- **Worldwide OSIR Spill Database.** The *OSIR* global database of every significant oil spill of 10,000 gallons or more. This up-to-the-minute database includes spills from 1978 through the present. Selectable by date, source, amount spilled and recovered, location, and type of oil. For information or price quotations, contact Jeff Welch, Database Editor, by phone at 617-641-5107 or at the address below.

For more information or to request any of these publications, contact: Oil Spill Intelligence Report, 37 Broadway, Arlington, MA 02174-5539; Telephone: 617-648-8700; Telex: 650-100-9891; Fax: 617-648-8707.

Canadian Firm Introduces Biodegradable Oil Cleanser (October 4, 1990)

Geopetrol Marketing and Distributing Ltd. of Edmonton, Alberta, Canada, recently introduced a new industrial cleanser, according to Thomas Cleave of Spill Sciences, Inc., Broomfield, Colorado, who will be marketing and distributing the product in the United States. Four years of tests conducted by Geopetrol showed that the cleanser, called Value 100, removed oil in encrusted tanks and petroleum containers, as well as oil contaminated rocks, tar pits, soils, shorelines, and beaches. Geopetrol also demonstrated that in some cases up to 93% of the oil removed could be commercially reclaimed. Value 100 is considered environmentally safe in that it is biodegradable, non-toxic, and contains no caustic soda, phosphates, or enzymes. Value 100, which Cleave said is "priced in line with other cleansers," is a water-soluble blend of organic compounds that include organic dispersants and surfactants. For more information, contact Geopetrol Marketing, 6031 103A Street, Edmonton, Alberta, Canada; Tel: 1-403-434-9431; Fax: 1-403-438-6984. In the United States, contact Thomas Cleave, Spill Sciences, Inc., 3401-A Industrial Lane, Broomfield, Colorado 80020; Tel: 1-800-666-1611; Fax: 1-303-466-0557.

EPA Awards Emergency Response Service Contract to Weston (October 4, 1990)

The Environmental Protection Agency (EPA) recently awarded a \$116.5-million four-year contract to the environmental health and safety firm, Roy F. Weston, Inc., West Chester, Pennsylvania, to provide multidisciplinary technical assistance teams (TAT) for its Emergency Response, Removal, and Prevention Program. "Weston's emergency response teams will respond to spills, conduct site investigations and chemical safety audits, and identify innovative treatment/disposal options and perform environmental sampling and analysis," according to Michael E. Herron, corporate communications director at Weston. The EPA contract also calls for Weston to conduct first responder and emergency preparedness training, to coordinate the development and implementation of community relations plans, and to perform cost tracking and cleanup monitoring. "This is Weston's third consecutive TAT contract," Herron said. Weston has held a contract with the EPA since 1982. The EPA program is funded by the Superfund and Clean Water Act. For more information, contact: Michael Herron, Roy F. Weston, Inc., Weston Way, West Chester, Pennsylvania 19380; Tel: 1-215-430-3182; Fax: 1-215-430-3124.

Final Report on Valdez Oil Spill Available (October 4, 1990)

The National Transportation Safety Board's final report on the Exxon Valdez spill is now available through the OSIR Document Service, or it can be ordered directly from Walcoff & Associates.

Certificate of Merit (September 27, 1990)

U.S. Coast Guard (USCG) Rear Admiral D.E. Ciancaglini, federal on-scene coordinator for the Exxon Valdez spill response, recently presented a USCG/Department of Transportation Certificate of Merit to Woodward-Clyde Consultants (WCC), Seattle, Washington, for its assistance during the 1989-90 Exxon Valdez oil cleanup operation. WCC's involvement with the incident began with technical advisory services for the early shoreline cleanup operations, and later expanded to the development of an oiled shoreline evaluation and monitoring program for 50 sites in Prince William Sound and the Gulf of Alaska.

Oil Spill Information Pack Available (September 27, 1990)

A U.S. Congressional Research Service Information Oil Spill Information Pack, is now available. The Pack includes a bibliography of selected oil spill references, the legislative impact of the Exxon Valdez spill, and the pros and cons on double-bottom/double-hull tankers; and the recently released proceedings of the Restoration Planning Work Group 26-27 March public symposium and August 1990 Progress Report entitled "Restoration Planning Following the Exxon Valdez Oil Spill . . . " If you would like more information on any article in this issue, contact the OSIR Hotline; Tel: 1-617-641-5110 or 1-617-648-8700; Fax: 1-617-648-8707.

California Cleanup Law (September 27, 1990)

On September 22, California Governor George Deukmejian signed into law the most comprehensive offshore oil spill prevention and cleanup plan in the nation. The law, which goes into effect immediately, creates a \$100 million cleanup fund that will be financed by placing an additional tax of 25 cents on each barrel of oil sold.

IMarE Publishes 1990-91 Meeting Program (September 27, 1990)

The Institute of Marine Engineers (IMarE) released its program of technical meetings and conferences for the 1990-91 season. The meetings will be held at the IMarE international headquarters in London. The program includes the Second International Conference on maritime Communications and Control on November 21-23, which addresses current developments, research areas, and new products in marine control systems, ship management, communications, navigation, applications of expert systems; and Offshore Operations Post Piper Alpha on February 6-8, 1991, which provides a forum for discussion on technological, commercial, and managerial matters following the July 1988 piper Alpha disaster and subsequent inquiry. For more information, contact David Long, Technical Secretary, IMarE, The Memorial Building, 76 Mark Lane, London EC3R 7JN, UK; Tel: 44-71-481-8493; Fax: 44-71-488-1854.

INTERTANKO Announces October Meeting (September 27, 1990)

The International Association of Independent Tanker Owners (INTERTANKO) has announced that it will sponsor a technical meeting on October 19 in London to discuss tanker design and maintenance routines. INTERTANKO Director Trygve Meyer said that this meeting is being held in response to recent concern over the use of high-tensile steel in tanker construction and the phase-out of single-hulled vessels mandated by recent U.S. legislation. For more information on the technical meeting, contact Trygve Meyer, INTERTANKO, Gange-Rolvs Gate 5, N-0723, Oslo 2, Norway; Tel: 47-2-44-0340; Fax: 47-2-56-3222.

Exxon Completes Summer Cleanup in Valdez (September 20, 1990)

This month—exactly one year after it completed its first round of cleanup efforts—Exxon dismantled the last of its equipment, sent cleanup workers home, and declared the second summer cleanup operation on the Exxon Valdez oil spill complete. Like last year, state officials protested Exxon's departure, claiming that there was still more work to be done—both now and next summer. Alaska Governor Steven Cowper suggested in a recent public speech that the state may choose to incur the costs for further cleanup and may sue Exxon for reimbursement.

Many government and industry experts, however, vehemently disagree with the state. The ongoing dispute between the state and Exxon concerns the popular catch phrase "net environmental benefit." It is a fact that cleanup work can, in some instances, do more harm than good. The debate is then: At what point is that line crossed?

The summer began with a debate over the use of bioremediation. The state, claiming that Exxon had insufficient field data on effectiveness and toxicity, was the last group in the regional response team to approve its use. The six-week trial period required by the state to test bioremediation, however, yielded significant results, which encouraged responders to continue using the technique for the rest of the summer, and possibly next year.

Today few experts, even from the state, deny the technique's vast potential. But the state claims that, while bioremediation appeared to be the least intrusive and most effective cleanup method this summer, Exxon was closed to other alternatives. Both Exxon and the U.S. Coast Guard (USCG) deny such claims, referring to the comprehensive study by the National Oceanic and Atmospheric Administration (NOAA) on the net environmental benefit of "excavation and rock washing."

Another dispute erupted over the use of Corexit 9580, a beachcleaner tested last year. The chemical was never sued this summer. "It was shown to be very effective," said Exxon Operations Manager Bill Stillings, "but the state disagreed. I think it was fear of the unknown. I thought it showed great promise."

According to Stillings, the key to determining the net environmental benefit in a spill is a well-educated assessment team. "In our TAG team, which included the Coast Guard, Exxon, NOAA, and the state, there was over 90% agreement. The state [may say that they were ignored], but [truthfully], they were by far the ones with the least expertise. In some cases, they did bring in experts, but in general a lot of state representatives did not have experience. The other experts on the team made [oil spills] their life work."

"We had as good a system as you can come up with," Stillings said. "On every specific site that we worked this summer, we had a biological survey done, a geological survey done, an archaeological survey done ... it was very detailed."

Exxon estimates that this summer's cleanup, which involved 1,100 workers, down from 11,000 last year, cost approximately \$200 million or one-tenth of the amount Exxon paid last year. The company strategically placed ten 15-member squads along 600 beach sites this

summer (about 100 miles of affected shoreline): seven in Prince William Sound; two in the Kenai Peninsula in the Gulf of Alaska; and one in Kodiak. According to Stillings, each squad was equipped with a berthing vessel, a large landing craft for supplies, housing, decontamination facilities, and a small landing craft. The crews worked two weeks on, one week off. They were given an eight-hour refresher course prior to beginning. Oily debris was brought to Seward, Alaska, for separation, then to a landfill in Oregon.

NOAA and the USCG in Alaska, both diminished to skeleton crews for the winter months, will conduct a survey in January or February. Exxon officials will then regroup in Anchorage in April and begin a joint spring shoreline survey with the other agencies on May 1st to determine if more work needs to be done. "I think there will be very little oil left," said Stillings, "but if it is agreed that there is more to do, we'll do it."

Exxon Valdez Responder Gives Valuable Tips (September 20, 1990)

Bill Stillings, Exxon operations manager in Anchorage, Alaska, provided these tips for responders based on his experience during the Exxon Valdez response:

1. Make it a point to establish prior relationships. "[Exxon] doesn't have a very large presence in Alaska. When the spill happened, we didn't have people that were familiar with working with state officials and others. We had to develop those relationships [in the midst of the chaos]. [Everyone] should make it his business to develop trust and understanding [with his peers]—through workshops, drills, etc.—so that when there is a spill, it's a combined effort. It really isn't just the oil industry's problem; it's a shared problem.
2. Develop universal boom connectors. "One thing that I saw here in Alaska last year was that the industry and the new response organizations need to come up with universal connectors. No two companies that I know of make the same connectors, so that we are forced to buy more booms. It's impractical."
3. Recognize the importance of successful management and organization in a response. "Where operations was the main thrust in the past, now management is just as important. You've got to look at cost in a much broader measure than just the operational costs of picking up the oil. You've got claims, liability, increased regulations. So you need to respond with a management team that can deal with the community—make them feel like they are being understood and appreciated. If you do that, you're going to have far better success."

Protestors Arrested (September 20, 1990)

On September 12th, two Greenpeace protestors chained themselves to the rudder of the Exxon Mediterranean, formerly the Exxon Valdez. This delayed the departure of the tanker from National Steel & Shipbuilding Co., San Diego, where the tanker had undergone repairs before

heading for service in the Mediterranean. The protestors were quickly removed and arrested, along with seven others, according to Exxon.

Exxon Debris Recycled (September 13, 1990)

According to the U.S. Coast Guard (USCG) Marine Safety Office in Anchorage, Alaska, the 100-foot U.S. landing craft Bradley River ran aground on Friday, August 31st in Tanglefoot Bay off Kodiak Island, Alaska. The vessel was loaded with bags of oily debris from the Exxon Valdez cleanup, an unknown quantity of jet fuel, and about 7,000 gallons of diesel fuel. Although all of its diesel fuel spilled, crews were able to collect the drums of jet fuel and bags of debris from its deck. USCG has declared the vessel a total loss and will leave it in its current position, where it does not present a hazard to navigation.

New Guide to Environmental Programs (September 13, 1990)

The second edition of the *Guide to State Environmental Programs*, recently published by BNA Books, explains how environmental programs in all 50 states are organized and implemented, and how they interact with other programs, industries, and organizations. The 700-page guide by Deborah Hitchcock Jessup includes each state's general regulatory scheme, permit and fee provisions, revolving funds priorities, and contacts for getting and reporting information for such issues as: air and water pollution control; solid, infectious, and hazardous waste; wetlands and groundwater protection; coastal zone management; underground storage tanks; water allocation and use; and SARA Title III spill reporting obligations. The cost is \$48, plus sales tax and \$34 shipping. To order, contact BNA Books Distribution Center, 300 Raritan Center Parkway, P.O. Box 7816, Edison, New Jersey 08818-7816; Tel: 1-201-225-1900; Fax: 1-201-417-0482.

Cleanup Crews to Stop Work (September 13, 1990)

Crews will stop working on the Exxon Valdez spill in Prince William Sound on September 15th. A joint Spring Shoreline Survey in May 1991 will determine if further work is needed--story in next week's digest.

Official Embarkation of the Marine Spill Response Corporation (September 6, 1990)

On September 6th, John D. Costello announced the official embarkation of the Marine Spill Response Corporation (MSRC)—an independent, privately financed, nonprofit catastrophic oil spill response organization previously called the Petroleum Industry Response Organization (PIRO). The group had been waiting for the outcome of the oil spill legislation package recently signed into law by President Bush.

Costello expects MSRC to be fully operational within 30 months. According to Costello, MSRC will be able to respond to major spills in offshore and tidal waters (including bays, harbors, and rivers) along the Pacific, Atlantic and Gulf coasts, plus Hawaii, the U.S. Virgin Islands, and Puerto Rico.

A separate, nonaffiliated corporation, the Marine Preservation Association (MPA), will fund the MSRC. The MPA, whose membership is composed of owners, shippers, and receivers of crude oil and petroleum products, will not exercise any direction over MSRC operations. MSRC will have its own self-perpetuating board of directors, none of whom will have an affiliation with the petroleum industry or oil transportation.

MSRC, to be headquartered in Washington, D.C., will have a total cleanup capacity many times larger than Alyeska Corporation's capability in Prince William Sound, Alaska. MSRC will consist of five regional centers, each capable of responding to a nine-million-gallon oil spill. Pooled together, the centers could respond to an even larger spill. Each regional center will have four to six pre-staging areas where responders will warehouse equipment, and in some instances, vessels and response personnel.

According to Costello, the MSRC will provide the nation with: "a large-scale capability to respond to catastrophic offshore and tidal water spills of crude and other persistent oils (those that do not evaporate or degrade so quickly that cleanup operations are not feasible); a program to audit, on a continuing basis, the readiness of the response forces to meet their mission; and an active research and development program intended to improve basic information about spills and the technology of oil spill response and cleanup." MSRC will fund research programs, among other things, to study chemical and biological effects of spilled oil on the environment, techniques for on-water recovery and treatment, and the prevention and mitigation of shoreline impacts. Patents or royalties will be donated to the public domain.

Sierra Club Books Publishes Novel on Exxon Valdez (September 6, 1990)

Released this year by Sierra Club Books is a new nonfiction novel by Art Davidson entitled *In the Wake of the Exxon Valdez: the Devastating Impact of the Alaska Oil Spill*. Davidson, a former natural resource planning director for the State of Alaska and a writer of Alaskan issues, divided his story into three sections: "The Spill," "The Response," and "The Wake." Each section is based on numerous interviews with Exxon executives, state and federal decision-makers, environmental scientists, native villagers, and the many investigative

Each section is based on numerous interviews with Exxon executives, state and federal decision-makers, environmental scientists, native villagers, and the many investigative hearings, court proceedings, and town meetings he attended. It "reads like a whodunit," wrote Penny Moser in a review for the *New York Times* (27 May 1990). "I had always thought Exxon dunit," but Moser realized many more were at fault, including many environmentalists who, for example, prevented Exxon from burning some of the oil before it spread. "As Mr. Davidson analyzes the Byzantine inter- and intra-agency politics, two things become clear: the pro-development and anti-regulatory policies of the Reagan era played a large part in the Valdez fiasco, and all the groups and agencies that could have ameliorated it were paralyzed by the fear that any decision they made could make their opponent's lawyer rub his hands together in glee."

The book is "a story of addictions," wrote Davidson, "not just a tanker captain's addiction to alcohol but widespread addictions to power, money, and energy consumption ... Exxon played out a lesson futility that the whole world needed to learn." To receive a copy (cost: \$19.95), contact Sierra Club Store Orders, 730 Polk Street, San Francisco, California 94109; Tel: 1-415-923-5600; Fax: 1-415-776-0350.