A Newsletter About Prevention, Preparedness, and Response

Spill SCENE

WASHINGTON STATE DEPARTMENT OF ECOLOGY

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From dikes breaking to marina fires

Spring 2002: A Season of Spills

From breaking levees to burning marinas, the Department of Ecology's Spill Response Team had an unusually busy four weeks this spring.

Things started hopping April 21, when a canal bank in Southwest Washington gave way and pushed a wall of water through the powerhouse at the Yale Reservoir dam. The force knocked out the walls and dumped two transformers into the Lewis River. Each transformer held 11,000 gallons of mineral oil. These and other oil sources meant more than 29,000 gallons spilled into the environ-

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*Above: When the **Swift Canal** dike near Cougar broke it destroyed the powerhouse and transformers. The damage spilled 29,000 gallons of mineral and other oils into Swift Creek. The oil mixed with debris to create a sludge downstream.*

*Left: The **Axton Road** spill occurred when this fuel truck went off the road in a residential area near Ferndale and rolled over down a hillside. Approximately 700 gallons of fuel oil spilled, some of it into a nearby creek and marshy area.*

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*Left: Containment booms downstream from the **Swift Canal and Yale Reservoir** keep a thick sludge of woody debris and oil in check. Environmental cleanup crews work to clear away the mess.*

*Below: The damage to the **Yale Reservoir** powerhouse is a testament to the power of water. One of the two transformers leans against the powerhouse wall at the right. The flood closed the road until a temporary route could be constructed around the damage.*

ment. *(Note: All oil amounts in this article are estimates; investigations are continuing.)*

Spill responders from the Southwest Regional Office and the Vancouver Field Office directed environmental protection during the cleanup of the area. Investigators from the Headquarters office sampled water and soil to assess the damage to natural resources.

The flood almost buried one of the transformers in the riverbank sand, surrounded by a cloudy pool of mineral oil. Some of the oil mixed with woody debris to form a "mousse" on the

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*Left: Containment boom and oil absorbent pads float in the creek near **Axton Road**, where a fuel tanker truck rolled over. The pads, which look and feel like disposable diaper material, are specially treated to absorb oil and repel water. As the pads absorb their maximum amount of oil, they are replaced with fresh pads. The pads also come in a variety that absorbs hazardous chemicals and repels water.*

Above: A blackened shell is all that remains of this covered area of the ***Seattle Marina*** *after the May 17 fire. The fire, which is still under investigation, destroyed dozens of boats under this cover and moored nearby. Note the partially submerged houseboat to the right.*

Left: An aerial view of the damage at the ***Seattle Marina****, showing containment booms and the oil sheen from the fuel that went down with the boats.*

Left, below: Ash and blackened debris mixed with oil floats within the containment boom at the ***Seattle Marina****.*

water. Booms and absorbent pads protected sensitive areas while cleanup crews worked to clear the oily debris and soil. Crews recovered an estimated 775 gallons of oil directly out of the transformers and an additional 1,090 gallons from the pool around the sunken transformer.

On May 16, a fuel truck

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carrying 8,200 gallons of gasoline overturned into a deep ravine in a residential area near Ferndale. The accident spilled approximately 700 gallons of gasoline into the soil, a gravel driveway, and Deer Creek at the bottom. About 100 homes were evacuated at first and the city of Ferndale shut down its water supply for a short time as a

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Left: Spill containment boom and mist combine for an artistic picture with a grim backstory following the fuel spill from the **Gaz Diamond**.

Below left, top: Oil built up into a thick coating on the beach at Port Angeles after the **Gaz Diamond** *spill. Several people complained to spill responders that they, their boats, or their dogs were oiled.*

Below left, bottom: A sheen shows within the boom around the refueling barge and the **Gaz Diamond**.

Below: Beach cleanup included "pom-poms," bunches of shredded plastic. Because plastic is made from petroleum, the shreds attract oil and repel water.

precautionary measure. Booms in the creek and nearby wet areas kept much of the fuel from migrating further. Cleanup included removing 350-400 cubic yards of contaminated soil.

Late the next day, May 17, a fire broke out in the Seattle Marina on Lake Union. Dozens of boats burned and sank in the disaster. Each boat took down with it whatever fuel, oil and paints it had onboard. Fuel mixed with charred wood floated within containment boom strung around the entire area but most did not move out of the immediate area.

On May 19, the liquid petroleum gas tanker, *Gaz Diamond*, spilled about 800 gallons of marine fuel oil while refueling in Port Angeles harbor. The spill oiled areas of the harbor and beach near Ediz Hook. Spill responders, investigators, and vessel inspectors from the Southwest Regional Office, Headquarters, and the Puget Sound Field Office took part in the response and investigation of the spill.

It was a busy time for Spills Program responders, investigators, and natural resource damage assessment staff. But it could have been much worse in terms of human health and environmental effects. In the past 15 years, the state, local governments, and businesses have invested in careful pre-planning, developing Geographic Response Plans, placing required response equipment, and training emergency response staff. These investments pay off every year, and especially in the spring of 2002.

GRPs key to timely, effective response

Geographic Response Plans (GRPs) are used during the emergent phase of an oil spill to waters of Washington. The emergent phase lasts from the time a spill occurs until the Unified Command is operating and/or the spill has been contained and cleaned up. Generally, this lasts no more than 24 hours.

GRPs identify and prioritize public natural resources to be protected. They list the amount of boom needed for each strategy and how the boom should be deployed. This allows for immediate, effective protection. By using these plans, the first responders to a spill can avoid the initial confusion that generally accompanies any spill.

Ecology natural resource damage specialist Dale Davis, right, leads the Environmental Unit during the response to the Axton Road tanker truck spill. The Environmental Unit is in charge of directing cleanup efforts so that they protect the natural resources and limit any further damage. Ecology and Washington Department of Fish and Wildlife work cooperatively in the Environmental Unit.

The GRPs for Washington were initially developed in the early 1990s. Until now, they have only been available as paper copies. All GRPs are being updated, and the updated versions are posted on Ecology's Web page for the Spills Program under "Preparedness." [http://www.ecy.wa.gov/programs/spills/spills.html] Input to GRPs is encouraged; send information to Dale Davis at: dald461@ecy.wa.gov

Once the update process has been completed, the GRPs will be converted to a GIS format, and distributed on CD-ROM and from the Web page in PDF format. Due to the frequent changes during this process, **the version available on the Web page should be considered the most current version**, and previous versions should be discarded.

E-mails notify users when new GRP information is posted to the Web page. To be added to the notification list, please send your e-mail address to Dale Davis.

CSC Ups Spill Response Storage Capacity

Storage capacity is often the critical limiting factor in oil spill response. Clean Sound Cooperative, a spill response organization headquartered in Washington, has taken a proactive approach to this problem by adding the *Ibis*, a large capacity barge, to its fleet of 39 vessels for responding to oil spills. The 200-foot tank barge has a storage capacity of 850,000 gallons. The *Ibis* was dedicated in Port Angeles in July, and will be homeported in Tacoma. The 264-foot tank barge, *Kittiwake*, with a storage capacity of 982,000 gallons will take the *Ibis'* place in Port Angeles.

Photo courtesy of Clean Sound Cooperative

New Tool Detects Oil, Concentrations

Investigators in the Spills Program have a new tool to help them find even small amounts of oil in water, even when there isn't a visible sheen or slick. The fluorometer, a sensitive electronic device that looks like Darth Vader's breadbox, measures the fluorescence given off by oil and can check amounts as dilute as parts per billion.

"All polycyclic aromatic hydrocarbons have fluorescence," explained David Mora, spill prevention planner with the Southwest Regional Office's Spill Response Unit. Polycyclic aromatic hydrocarbons are what give oil and gasoline their distinctive odor. Fluorescence is a type of luminescence in which an atom or molecule emits visible radiation in passing from a higher to a lower electronic state.

"Different oils have different fluorescenses," Mora continued. "You have to calibrate the fluorometer to the type of oil but then you can detect if there is any oil in the water, the concentration, and whether the level is going up or down. That is particularly important during a cleanup.

"It gives us an extra dimension of investigation. It's a quick screening tool that gives immediate results. We can assess data quickly, without having to send a sample to a lab and wait for the results."

This level of precision and speed comes at a cost. The device itself cost about $12,000. Additional lenses, lens holders, glassware and other accessories brought the total to more than $20,000. Just one of the special test tubes the fluorometer uses can run $500.

Since getting the device in January, investigators have already used it on the Swift Creek/Yale Reservoir, Axton Road, and *Gaz Diamond* spills.

The fluorometer can measure extremely tiny amounts of petroleum in water by sensing the fluorescence given off.

NOAA Earns Highest Ecology Honor

Dale Jensen, Spills Program manager, presents David Kennedy, of the National Oceanic and Atmospheric Adminstration with the Environmental Excellence award, the Department of Ecology's highest honor.

State and federal spill response agencies can now get answers on how spilled oil might behave in Puget Sound, thanks to the nation's most advanced forecasting tool developed by the National Oceanic and Atmospheric Administration (NOAA).

The Department of Ecology recently awarded NOAA the Environmental Excellence Award for this groundbreaking work.

Experts from NOAA's Office of Response and Restoration HAZMAT Team created the computer program. The NOAA team combined its Trajectory Analysis Planner (TAP) software – used for spill-response planning nation-wide – with thousands of pieces of local data collected by Ecology on tides, weather and local spill simulations. The Puget Sound TAP took about a year to complete.

"NOAA's team went to extra lengths to work with Ecology to adapt this software," Dale Jensen, Spills Program Manager, said when presenting the award. "They put unsurpassed innovation, technical expertise and dedication into harnessing existing software and 'souping it up' for Puget Sound. This software will bring this region to higher, better-targeted readiness for what we hope will never happen."

The Puget Sound TAP can forecast 500 outcomes for spills at any of 300 locations in most of Puget Sound and the San Juan Islands. Users can adjust the program for the type of oil and time of year. The program is primarily designed as an advance-planning aid, but also can assist responders when a spill occurs.

Who Ya Gonna Call?
Report Oil Spills
1-800-911-OILS

Spill SCENE

Spill Scene is published by the *Washington State Department of Ecology* to provide information on oil and hazardous substance spill prevention, preparedness and response. We welcome your comments and questions. Call (360) 407-7211 or write: Editor, **Spill Scene**, Department of Ecology, Spills Program, P.O. Box 47701, Olympia, WA 98504-7701. Visit our website at www.ecy.wa.gov/programs/spills/spills.html

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Ecology is an equal opportunity agency. If you have special accomodation needs, please contact the Spills Program at (360) 407-7455 (Voice) or (360) 407-6006 (TDD).

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Upcoming Events

Ecology welcomes submittals of notices of public events related to oil and hazardous substance spill prevention, preparedness and response. Ecology reserves the right to select events for publication. Please contact Mariann Cook Andrews at (360) 407-7211 (e-mail: maco461@ecy.wa.gov) for more information regarding submittal deadlines.

August 8 – 9 a.m.
Washington Pilotage Commission
2911 Second Ave., Level B Conf. Rm.
Seattle, WA
Contact: Peggy Larson, (206) 515-3904

August 14 – 9 a.m.
Resource Damage Assessment Comm.
Ecology HQ Bldg., R0A-34
Lacey, WA
Contact: Dale Davis, (360) 407-6972

August 14
Puget Sound Harbor Safety and
Security Committee
Port of Seattle, Pier 69
2711 Alaskan Way
Seattle, WA
Contact: David Schneidler, (206) 728-3523

September 11 – 9 a.m.
Resource Damage Assessment Comm.
Ecology HQ Bldg., R0A-36
Lacey, WA
Contact: Dale Davis, (360) 407-6972

September 12 – 9 a.m.
Washington Pilotage Commission
2911 Second Ave., Level B Conf. Rm.
Seattle, WA
Contact: Peggy Larson, (206) 515-3904

September 25-26
Joint NWAC/RRT Meeting
Tri-Cities - Location TBA
Contact: Elin Storey, (425) 649-7111

October 9 – 9 a.m.
Resource Damage Assessment Comm.
Ecology HQ Bldg., R0A-34
Lacey, WA
Contact: Dale Davis, (360) 407-6972

October 9
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October 10 – 9 a.m.
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2911 Second Ave., Level B Conf. Rm.
Seattle, WA
Contact: Peggy Larson, (206) 515-3904

TBA
Oil Spill Contingency Plan Rule
Amendment Advisory Committee
Contact: Susanne Winter, (425) 649-7141

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