

STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION DIVISION OF SPILL PREVENTION AND RESPONSE CONTAMINATED SITES PROGRAM

410 Willoughby Ave., Suite 303
P.O. Box 111800

Juneau, AK 99811-1800
PHONE: (907) 465-5208
FAX: (907) 465-5218
<http://www.state.ak.us/dec/>

File No.: 1530.38.001

February 13, 2009

Ron Berg, Vice President
Wasser and Winters Company
P.O. Box 396
Longview, WA 98632

Re: Cleanup Complete Determination
Icy Bay West
Database ID Number 1753

The Alaska Department of Environmental Conservation (DEC), Contaminated Sites Program, has reviewed the assessment and cleanup records associated with the Icy Bay West Camp # 1 logging facilities, including the September 23, 2008 Site Characterization and Remediation report submitted by GeoEngineers. The site was subject to an extensive soil cleanup in 2003 for petroleum contamination, but ongoing operations since then resulted in additional contamination. This letter documents the environmental status of the site under the 18 AAC 75.325-390 site cleanup rules, and provides a summary of the regulatory issues considered in the DEC determination pertaining to the post-2003 contamination.

Background

Icy Bay is located along the west entrance to Icy Bay on the Alaska mainland along the coastal margin of the Gulf of Alaska and the Wrangell-St. Elias Mountains near the foot of Mt. St. Elias. The Icy Bay West facilities have been used in connection with timber harvest operations since 1968. The facilities include camp buildings, vehicle and heavy equipment maintenance shops, road, airport, fuel storage and dispensing, log sort yard and storage, and related facilities.

Contamination incidents occurred at the Icy Bay West facilities throughout its history, resulting in several site evaluations in 2001-2002 and a nearly 17,000 cubic yard cleanup of petroleum-contaminated soil in 2003. All excavated soil was treated on-site in bioremediation cells. On October 5, 2004 DEC issued a no further action determination for the cleanup. Since 2004 Wasser & Winters has continued to use the facilities. As a result of day-to-day operations over a four-year period, small-scale spills and releases generated additional contamination.

2008 Areas of Investigation

Areas that were investigated in 2008 included the log sort yard, Camp # 1 residential area and waste incinerator, active maintenance shop, fuel farm, and remote maintenance shop. Cleanup, consisting of stained surface soil removal and/or sub-surface excavation, was required at all locations except the log sort yard.

The Camp #1 residential area was formerly the location of numerous residential manufactured homes, bunkhouses, and a cookhouse. The structures have all been demolished, except for four trailers that have been transferred to the Mental Health Trust. The former structures were evaluated by excavating 18-inch deep trenches under the aboveground storage tank (AST) locations and along the centerlines of the structures. Fourteen trailer sites were evaluated for diesel range organics (DRO) and residual range organics (RRO) and were found to meet the cleanup levels. An additional seven locations in the Camp #1 residential area required contaminated soil cleanup.

A new camp waste incinerator was installed to the northwest of the residential area after the 2003 cleanup. An initial exploratory excavation of this area on July 2, 2008 indicated low DRO and RRO levels, but a subsequent inspection found high field screening levels and other signs of contamination that required soil removal at two locations.

The active maintenance shop included a single maintenance bay with a variety of interior storage bays, plus a tractor trailer to the east of the shop that was used to store new and used oil and lubricants. The shop yard, used to park and store equipment and logging accessories, included a used battery storage area that was unprotected from the weather. After the used batteries were relocated inside the shop building, two soil samples from the storage area confirmed that the highest total lead level was 5.25 mg/kg, well below the cleanup level and within background concentrations.

The fuel farm consisted of five 10,000-gallon steel diesel ASTs and one 5,000-gallon gasoline tank. After the tanks and the lined containment structure were removed, three areas of stained surface were excavated.

The remote maintenance shop underwent cleanup of petroleum-contaminated soil in 2003 but no samples were taken to confirm whether cleanup levels were met. As a result, exploratory excavations were made in early 2008 and two small adjacent areas were found with contaminated soil that needed removal.

The log sort yard was inspected and exploratory excavations were made at several locations. Signs of potential contamination were observed in two areas, but sampling results confirmed that DRO and RRO cleanup levels were met. In addition, a site named "Joe's Crib" was relocated for evaluation because it had not been excavated during the 2003 cleanup. Four 4-foot deep exploratory trenches were made across the area, but no contaminated soil could be found and the site was concluded to be clean.

Approved Soil Cleanup Levels

In 2003, DEC approved site-specific migration to groundwater cleanup levels for DRO applicable to the different cleanup areas in the camp. The basis for these site-specific DRO cleanup levels was the measured naturally occurring organic carbon in the different areas. Naturally occurring organic carbon, known as total organic carbon (TOC), adsorbs petroleum hydrocarbon compounds. Soil with high TOC concentrations is able to effectively hold more contamination, thereby allowing a higher site-specific cleanup level. The residential area and main shop had slightly higher TOC concentrations, and therefore a higher cleanup level, than the fuel depot area (Table 1).

Site-specific migration to groundwater cleanup levels were not calculated for GRO and RRO in 2003 because these contaminants were not prevalent. Rather, cleanup levels were set at the “default” migration to groundwater levels found in 18 AAC 75.341, Table B2, which are based on a very conservative TOC value (0.1%).

Table 1 – 2003 Approved Cleanup Levels

Area	GRO (mg/kg)	DRO (mg/kg)	RRO (mg/kg)
Residential Area and Main Shops	260	843	8,300
Fuel Depots	260	718	8,300

Any other contaminants encountered at the site in 2003 were required to meet 18 AAC 75.341 Table B1 levels for soil, and 18 AAC 75.345 Table C levels for groundwater. These cleanup levels also apply to the 2008 cleanup.

Soil Cleanup Summary

Contaminated soil totaling approximately 200 cubic yards was excavated from the fuel farm, active maintenance shop, remote maintenance shop, camp incinerator, and Camp # 1 residential area between May and August 2008. The soil was shipped to Waste Management Inc’s Columbia Ridge Landfill in Arlington, Oregon for disposal. The certificates of disposal document the receipt of approximately 243 tons.

The volume of contaminated soil removed from the five cleanup areas is summarized in Table 2.

Table 2 – Excavated Soil Volumes

Location	Volume Removed (cubic yards)
Fuel Farm	16
Residential Area	158
Camp Incinerator & Incinerator Fuel Shed	12
Remote Maintenance Shop	7
Active Maintenance Shop	10
TOTAL	203

Sixty-two samples were analyzed for GRO, DRO, and/or RRO (with and without silica gel cleanup to measure what is known as biogenic interference). Two samples from the battery storage area were sampled for total lead.

Table 3 presents the highest confirmation sample results, either following excavation or at areas that did not require excavation.

Table 3 – Confirmation Sampling Results

Area	GRO (mg/kg)	DRO (mg/kg)	RRO (mg/kg)	Lead (mg/kg)
Fuel farm	18.9 FF-05*	<6.48 FF2A	<32.4 FF2A	--
Residential Area	--	459 HT-21*	72.1 HT-6*	--
Camp Incinerator & Incinerator Fuel Shed	--	<20.9 INCO2-B	<20.9 INCO2-B	
Remote Maintenance Shop	--	106 RM-6*	117 RM-6*	--
Active Maintenance Shop	--	197.0 Shop-3	314.0 Shop-1	
Battery Storage Area	--	--	--	5.25 BS Comp
*Estimated biased low – actual contaminant concentrations may be higher due to volatilization and degradation as a result of high cooler temperatures when the soil samples were received by the laboratory				

Groundwater

The drinking water well located near Camp Creek was sampled in 2003 but petroleum hydrocarbons were not detected. Moreover, major sources of petroleum contamination in the “smear band” near the Camp # 1 shop were removed during the 2003 cleanup. Daily observations were made to ensure that petroleum was not leaking into open excavations from underlying soil horizons. Areas identified as potential problems were re-excavated until no smear band or leakage was observed. DEC did not require the installation of long-term groundwater monitoring wells at that time based on the conclusion that petroleum hydrocarbons had not been detected initially, and would not likely be present after the site returned to a stable condition following cleanup activities.

Because the post-2003 Wasser and Winters operation resulted in no significant petroleum releases, DEC concludes that no additional groundwater sampling is required.

Exposure Pathway Analysis

Exposure pathways are the conduits by which contamination may reach human or ecological receptors. The following potential exposure pathways were evaluated using DEC's Exposure Tracking Model (ETM).

Table 4 summarizes the ETM results. All pathways were either de-minimis exposure or the pathway was determined to be incomplete. "De-minimis exposure" means that in DEC's judgment humans or wildlife will be minimally affected by the small volume of remaining contamination. "Pathway incomplete" means that in DEC's judgment contamination has no potential to contact humans or wildlife.

Table 4 – Exposure Tracking Model Results

Pathway	Result
Surface Soil Contact	Deminimis Exposure
Sub-Surface Soil Contact	Pathway Incomplete
Inhalation – Outdoor Air	Pathway Incomplete
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete
Groundwater Ingestion	Pathway Incomplete
Surface Water Ingestion	Pathway Incomplete
Wild Foods Ingestion	Pathway Incomplete
Exposure to Ecological Receptors	Deminimis Exposure

Data Evaluation/Quality Assurance Summary/Field Quality Control

Data usability was compromised to some degree because sample cooler temperatures exceeded the recommended range. One of the coolers in question, containing samples collected on July 2, was received by the lab on July 3. Because volatilization and contaminant degradation may have occurred, the data is considered "estimated" as a result of the potential low bias. The other cooler contained samples taken on July 22 and 23. This cooler's temperature was not quite as high as the first cooler, but still above the acceptable range. The cooler and samples were not turned into the lab until July 26 and it is unknown how long the sample temperatures may have exceeded the acceptable range (the cooler did include a Blue Ice pack). These samples were not tagged as biased low in the report.

To measure sample precision, DEC typically requires one field duplicate sample per every ten field samples for each target contaminant. According to the field quality control documentation dated December 16, 2008, field duplicates were not collected.

Weathered diesel, the primary contaminant at the Icy Bay site, is not significantly affected by volatilization or degradation when sample holding temperatures are exceeded. Additionally, field quality control samples to validate precision are not as critical as they might have been if the cleanup confirmation samples were near the cleanup level threshold. Analytical results, although questionable in some instances, confirmed that residual contaminant concentrations were well below the site-specific migration to groundwater cleanup levels, and even further

below the 18 AAC 75.341 Table B2 ingestion and inhalation levels. The data is therefore considered useable in this instance.

As a final note of confidence regarding the GeoEngineers effort, DEC spoke with Tom Hanna of Southeast Management Services, the University's contractor. Mr. Hanna indicated that he was prepared to take split samples, but none appeared necessary when he was on-site. Mr. Hanna made extensive use of his photo ionization detector to screen potential sampling locations and check the cleanup activity. His measurements and observations were frequently shared with GeoEngineers, and he was generally satisfied with how GeoEngineers selected and took confirmation samples at the several major excavation sites.

Determination

The 2008 cleanup of the Icy Bay West facilities has not strictly met all requirements specified in 18 AAC 75 Article 3 - Discharge, Reporting, Cleanup, and Disposal of Oil and Other Hazardous Substances. However, DEC has determined that a follow-up mobilization to collect additional cleanup confirmation samples and field quality control samples is unnecessary. Residual contamination that may be present above approved cleanup levels likely constitutes a small volume, is not expected to migrate either vertically or laterally, poses no acute or chronic risk to human health and the environment, and is not considered a long-term site management concern.

The Icy Bay West Camp # 1 site is closed under 18 AAC 75.380 subject to the following standard conditions. These conditions are not considered formal institutional controls under 18 AAC 75.375.

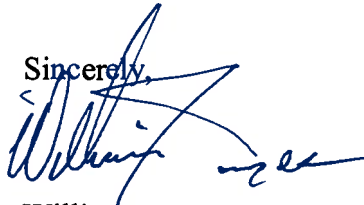
1. Site information will be recorded on the DEC database. The on-line site closure report, including this determination, serves as notification to future property owners or operators.
2. DEC approval, through the Juneau Contaminated Sites Office, is required prior to off-site transport of soil or groundwater in accordance with 18 AAC 75.325(i).
3. Soil containing residual contamination may not be placed in surface water or other environmentally sensitive areas.

This determination is subject to 18 AAC 75.380(d)(2), whereby additional investigation and cleanup may be required if new information is discovered that indicates the cleanup described in this decision is not protective of human health or the environment.

This determination does not supersede any additional actions the University of Alaska (timber purchaser) or Trust Land Office (TLO) (landowner) may require of Wasser and Winters to fulfill contractual obligations. Additional investigation and/or cleanup, if required by the University or the TLO, must be conducted under DEC oversight.

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195-340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 410 Willoughby Avenue, Suite 303, P.O. Box 111800, Juneau, Alaska 99811-1800 within 15 days of

the decision date. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, P.O. Box 111800, Juneau, Alaska 99811-1800, within 30 days of the decision date. The right to appeal is waived if a hearing is not requested within 30 days.

Sincerely,

William Janes
Project Manager

cc: Doug Campbell, University of Alaska Land Management
Don Koenigs, TLO
Marcie Menefee, TLO