FY 2010

Contaminated Sites Program Annual Report

July 2010

Alaska Department of Environmental Conservation
Division of Spill Prevention and Response
Annual Summary of Contaminated Sites
July 2010

Forward

This report is generally intended for use by the Contaminated Sites Program (CSP) staff of the Alaska Department of Environmental Conservation (DEC) as a tool for measuring accomplishments, reporting on projects and activities, planning future workloads and managing the program. As such, a working knowledge of the program is assumed and both detailed and general background information has been omitted.

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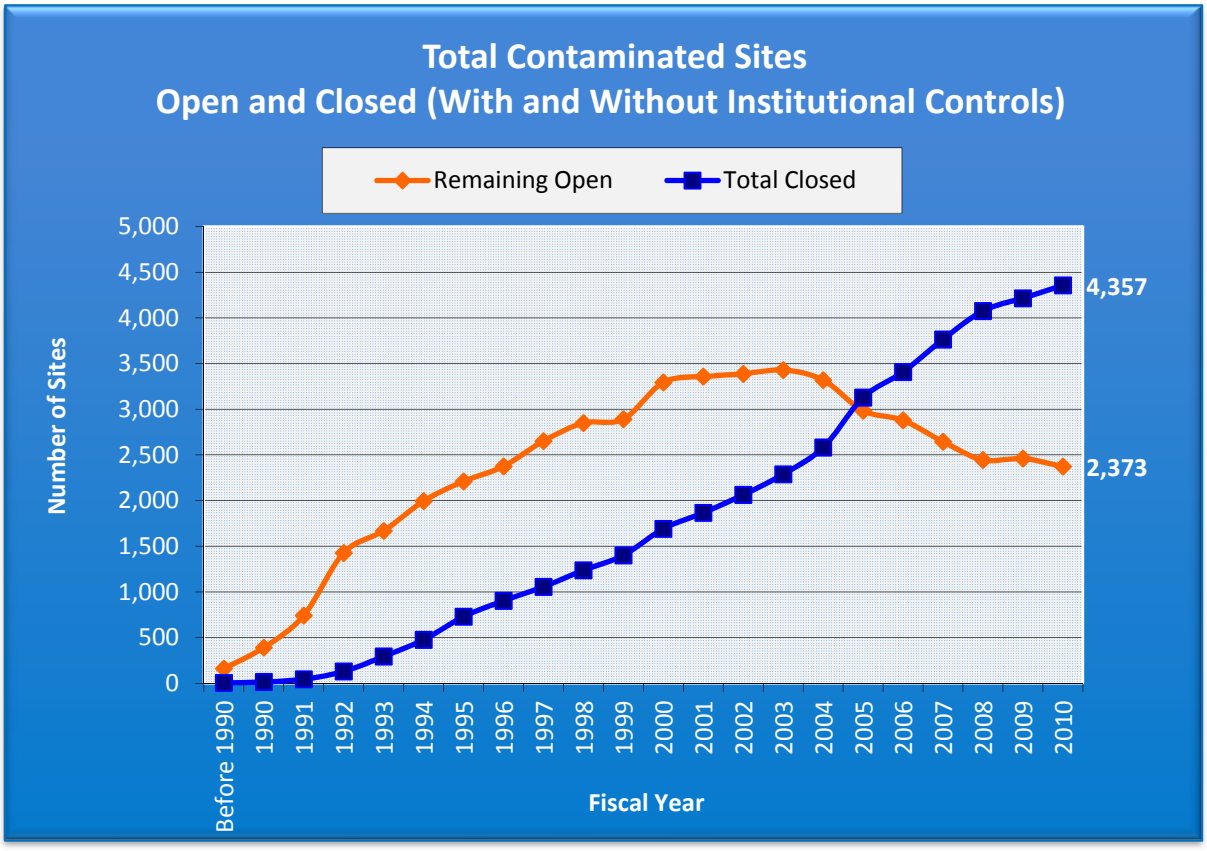
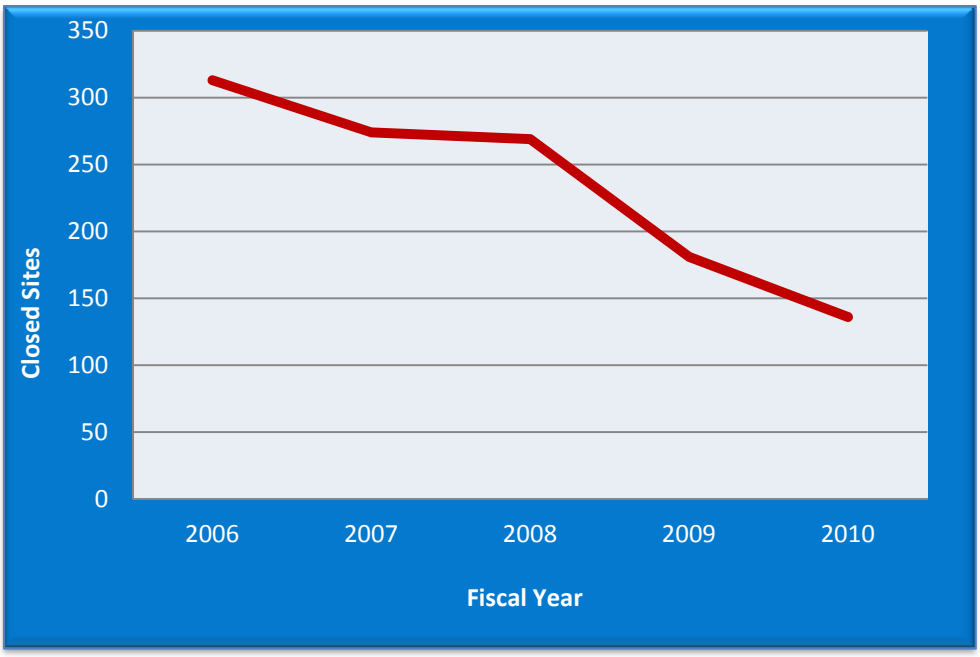
Table of Contents

Executive Summary

The Contaminated Sites Program continues to make significant strides toward cleaning up Alaska's legacy contamination. To date, nearly 65 percent of contaminated sites documented in the Contaminated Sites Program (CSP) database have either been closed or closed with institutional controls. Ten years ago there were nearly 3,300 open sites inventoried; since then an additional 2,404 were added to the database and 3,169 sites were closed. As of June 30, 2010, there were 2,373 open sites.



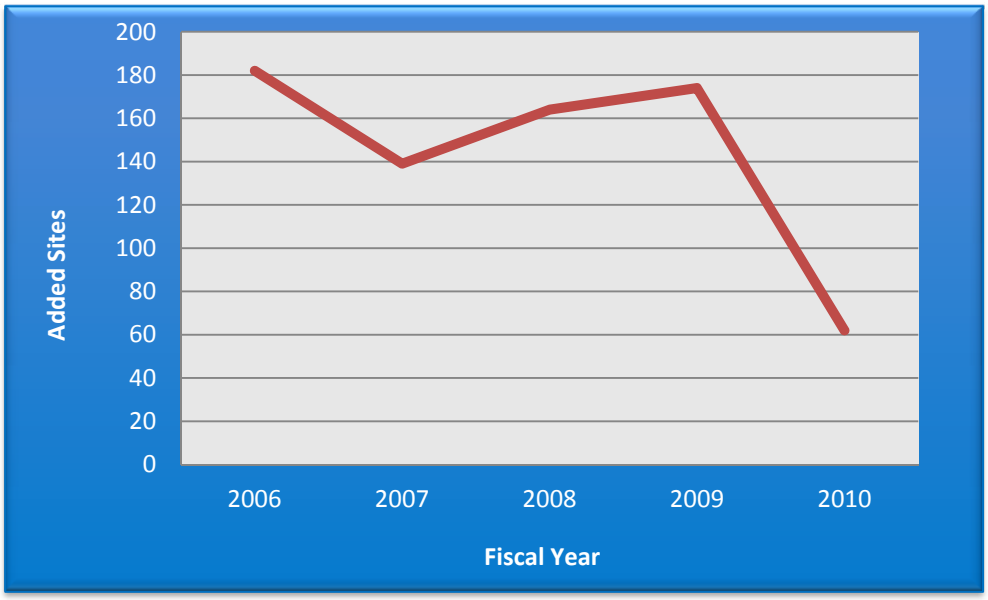
Although the absolute number of open sites has decreased considerably in 10 years, the rate of site closure also continues to decrease. The five-year average for the period ending June 30, 2010, is 233 site closures annually; in FY 2010 the total number of sites closed was 135.



Five-Year Site Closure Trend
Includes sites closed with and without institutional controls

The decreasing site closure rate in Alaska parallels what has been observed at the national level during the last several years for leaking underground storage tank (LUST) sites. As with LUST sites nationally, it is clear that the CSP is faced with ongoing challenges as it attempts to work with recalcitrant responsible parties or to bring the more difficult contamination problems to closure.

With the exception of the anomalous FY 2009 spike, there has also been a decreasing trend in the number of newly documented sites added to the CSP database annually, with 79 added in FY 2010. The FY 2009 spike may be partly due to the extensive data corrections made during the September 2008 roll-out of the program's new database.



Five-Year Added Site Trend

Substantive regulatory activity occurred at 837 sites in FY 2010, including but not limited to initial evaluation, full-scale site characterization, remedial action, risk assessment, ongoing monitoring and site closure.

The CSP maintained a rigorous field presence in FY 2010. Roughly half the program's 188 visits during the year were in rural Alaska.

The CSP achieved almost 97 percent of its total site closure performance measure in FY 2010 and 74 percent of its risk reduction performance measure.

	Goal	**Number Achieved**
Total Site Closures	150	144
Exposure Pathways Closed	700	525

Site Closures

Sites are closed either with or without institutional controls. In FY 2010, about 62 percent of site closures were made without institutional controls.

About 60 percent of the total site closures were at state and private sites and 40 percent were federal facilities.

Exposure Pathway Closures

Exposure pathways are how contaminants reach human or ecological receptors. One example is drinking contaminated groundwater.

A "closed" exposure pathway is a measure of risk reduction. Closing a pathway means response actions modified the relative risk of exposure – from current, high potential, low potential or future exposure – to either *de-minimis* contamination or residual contamination managed through the use of institutional controls.

A pathway may also be closed if it is determined to be "incomplete." That means there is no possibility of the receptor being exposed any longer as a result of response actions. Using the contaminated groundwater example, the groundwater ingestion pathway would be shown to be incomplete if concentrations are below regulatory cleanup levels.

TOP 10 ACCOMPLISHMENTS
FY 2010

1. Flint Hills Refinery – Flint Hills Resources is working with the CSP and the City of North Pole on an environmental investigation of sulfolane.

2. Kincaid Park – The Kincaid Park former biathlon range is located within the Municipality of Anchorage. Remaining contaminated soil and spent ammunition is believed to be present in up to 14,000 cubic yards of fill.

3. Aniak White Alice Communication Site – DEC contractors completed characterization work at the Aniak White Alice Communication Site that better defined the volume of PCB-contaminated soil remaining on site, determined the extent of TCE contamination and assessed TCE vapor migration. An overall site cleanup plan will be developed in FY 2011.

4. Gaffney Road Areawide Groundwater Investigation – This area in downtown Fairbanks has four known sources of chlorinated solvent releases that have contaminated the soil and groundwater. Vapors are migrating into at least seven surrounding buildings. Source removal has significantly reduced the risk at two of the four source areas.

5. 314 Wendell Ave. – Former dry cleaner operations at this property released chlorinated solvents to the soil and sewer lines. Remedial action will include soil vapor extraction and the use of Hydrogen Release Compound to treat groundwater.

6. Taku Gardens – CSP worked with federal agencies regarding Fort Wainwright's Taku Gardens to ensure that housing constructed over an old disposal area containing hazardous materials is properly addressed.

7. Former Adak Naval Air Station – The CSP worked with the Navy to close roughly nine miles of abandoned fuel pipelines, continue free-product recovery, finalize after-action reports for munitions cleanup, finalize the remedial investigation and plan the feasibility study for Operable Unit B-2, and plan removal actions at two petroleum-contaminated sites.

8. Eroding Landfills – Removals were implemented at two eroding dump sites at Kogru and Point Lonely, both east of Barrow.

9. Joint Base Alignment – CSP staff members are working with their federal counterparts on the Joint Base Alignment at Elmendorf Air Force Base and Fort Richardson. Both military bases are on the Environmental Protection Agency's National Priorities List. The CSP is working with its federal counterparts to ensure a smooth environmental management transition prior to joint base operations in October 2010.

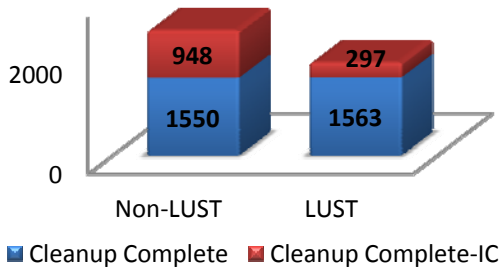
10. Draft Field Sampling Guidance – The Draft Field Sampling Guidance presents methods and equipment options for sample collection at contaminated sites and leaking underground storage tank sites.

STATEWIDE DATA OVERVIEW
FY 2010

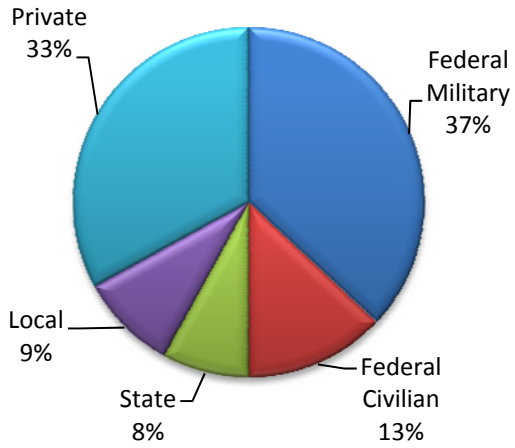
The following charts and graphs show the total number of open and closed sites at the end of FY 2010, the total closed sites to date, a breakdown of open sites by responsible party, a breakdown of open sites by site type, the most prevalent contaminants and site closure details.

Open and Closed Sites

Status	LUST	Non-Lust	Total
Open	446	1,927	2,373
Closed	1,563	1,550	3,113
Closed with institutional controls	297	948	1,245



Open Sites by Responsible Party



Top 10 Open Site Types

Site Type	Number of Sites
Military installation	623
Airport/airfield	187
Bulk fuel storage	162
Maintenance yard/shop	155
Gas station	144
Commercial/retail/office	106
Residence	101
Landfill/dump	90
Oil exploration/production	67
Transmission pipeline	59

Top 10 Contaminants at Open Sites

Contaminant Type	Number of Sites
Petroleum – diesel	1,792
Petroleum – gasoline	596
Petroleum – benzene	468
Petroleum – BTEX (benzene, toluene, ethylbenzene and xylenes combined)	292
Petroleum – heavy oil	255
Metals – lead	157
Chlorinated compounds – PCBs (polychlorinated biphenlys)	124
Chlorinated compounds – TCE (trichloroethene)	87
Chlorinated compounds – PCE (tetrachloroethene)	78
Unexploded ordinance	59

Site Closure Details

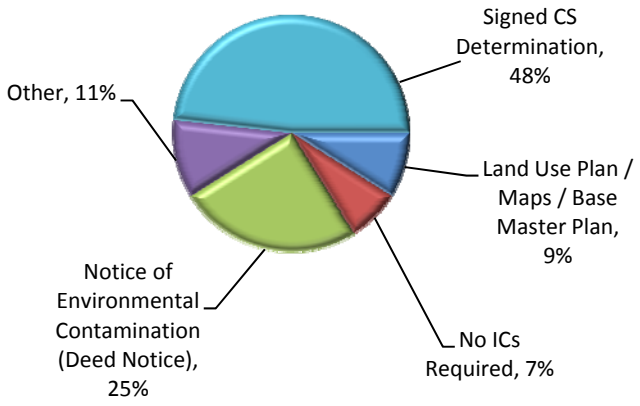
In FY 2010 there were 144 sites that were closed. That means that the status of those sites changed from active to either cleanup complete or cleanup complete with institutional controls because remedial activity at the site is complete.

Site closed status:

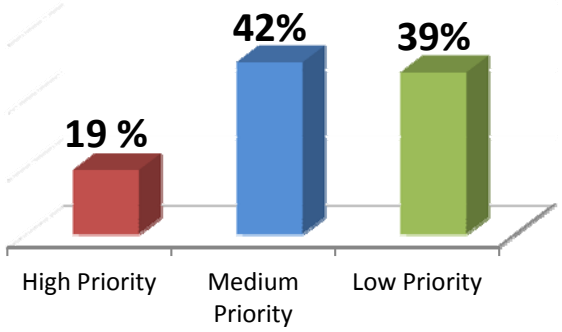
- Thirty-three percent were closed with a status of cleanup complete with institutional controls.
- Sixty-seven percent were closed with a status of cleanup complete.

Some sites require more than one institutional control mechanism to provide a layering of protection. Institutional control mechanisms, and site specific controls and conditions, are included as part of the institutional controls. *(See graphs at right and below.)* Under the revised site closure policy put into place in 2008, all closed sites have the regulatory default requirement of "offsite transport notification" for contaminated soil or groundwater. Under the pre-2008 site closure policy, that was considered an institutional control condition. These sites (43 percent, *see graph below*) are being evaluated for possible full closure.

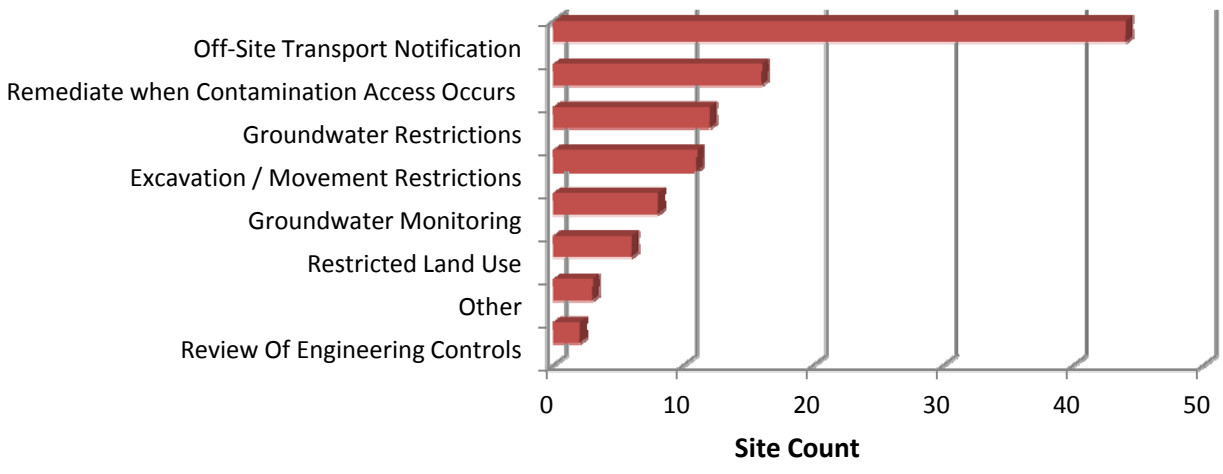
Institutional Control Mechanisms



Site Priority by Relative Risk



Institutional Controls and Conditions



IN-STATE MEETINGS AND EVENTS FY 2010

Annual Contaminated Sites Program Meeting: A two-day meeting was held in Fairbanks in early October. The meeting focused on a variety of technical sessions and a four-hour Resource Conservation and Recovery Act training provided by the Environmental Protection Agency.

Alaska Forum on the Environment: CSP staff presented jointly with EPA staff on DEC Brownfield Assessments and EPA Targeted Brownfield Assessments. CSP staff also moderated a half-day dedicated brownfield session in a program that had presentations by three of Alaska's Tribal Response Programs, the EPA and DEC. Other CSP staff introduced the Draft Field Sampling Guidance and the Hydrocarbon Risk Calculator to the regulated community.

State/Private Cleanup Program Annual Staff Meeting: CSP staff met in Anchorage during the week of the Alaska Forum on the Environment. Presentations included document-retention practices, responsible and liable parties for cleanup, the division's request for proposal process, contracts and cost recovery, Geographic Information Systems, the Exposure Tracking Model and case studies on the Kincaid Park and River Terrace projects.

State and Tribal Response Program Workshop: CSP's Reuse and Redevelopment staff hosted the second annual workshop for Alaska Tribal Response Programs in Anchorage during the week of the Alaska Forum on the Environment. All but two of the Alaska Tribal Response Programs and several new grant applicants attended the one-day workshop.

CSP-SPONSORED TRAINING FY 2010

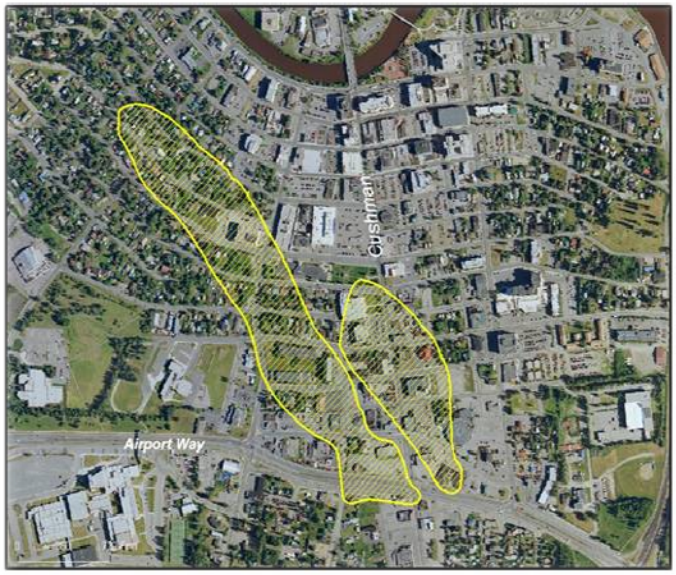
Chlorinated Solvents: The CSP and Department of Defense co-sponsored an Anchorage training seminar on chlorinated solvents. Presentations included examples of characterization, remedial alternative review, and remediation work at several Alaska sites.

Vapor Intrusion: The CSP sponsored vapor intrusion training in Anchorage for SPAR staff and the regulated community. CSP contracted with SLR Inc. for a presentation on how to evaluate contaminated sites where vapors may migrate into buildings and to demonstrate equipment used for indoor air and soil gas sampling. The training included a discussion by CSP staff about DEC's Draft Vapor Intrusion Guidance.

Cost Recovery: Staff workshops were held in Fairbanks and Anchorage to present an overview of the CSP Cost Recovery Guidance Manual. The workshops included an in-depth look at the cost recovery processes and the interaction that is required between three entities: the Department of Law, and DEC's Response Fund Administration and Division of Spill Prevention and Response.

STATE AND PRIVATE CLEANUP PROGRAM ACCOMPLISHMENTS FY 2010

Gaffney Road Areawide Groundwater Investigation: This area in downtown Fairbanks is now divided into two sites: Gaffney West, with three source areas, and Gaffney East, with one source area. All areas represent chlorinated solvent releases from historic dry cleaning operations that have contaminated the soil and created two groundwater plumes (the largest one, at the Gaffney West site, is close to a mile long). Vapors from that plume are migrating into at least seven nearby buildings. Source treatment has significantly lowered the vapor intrusion risk at two of the four source areas with the installation of a soil-vapor extraction and depressurization system at the Good News Bible and Bookstore (Gaffney West). The other source area at Gaffney West has been further characterized and vapor intrusion has not been documented at the building near that area. Additional investigation continues near the source area at Gaffney East to determine if vapor intrusion represents a risk to additional buildings. Long-term groundwater monitoring continues within both plumes (Gaffney West and East).



The Gaffney West and Gaffney East plumes

314 Wendell Ave. (formerly MC Commercial): Former dry cleaning operations at this property released chlorinated solvents to the soil and sewer lines, creating an areawide groundwater plume extending toward the Chena River and acute vapors in the building at 314 Wendell Ave. The source was further characterized to evaluate remedial options. After analyzing the alternatives, CSP staff determined that the best route would be to use soil vapor extraction to treat the soil and Hydrogen Release Compound to treat the groundwater. A work plan to further investigate migration to the river to evaluate the risk to human and ecological receptors

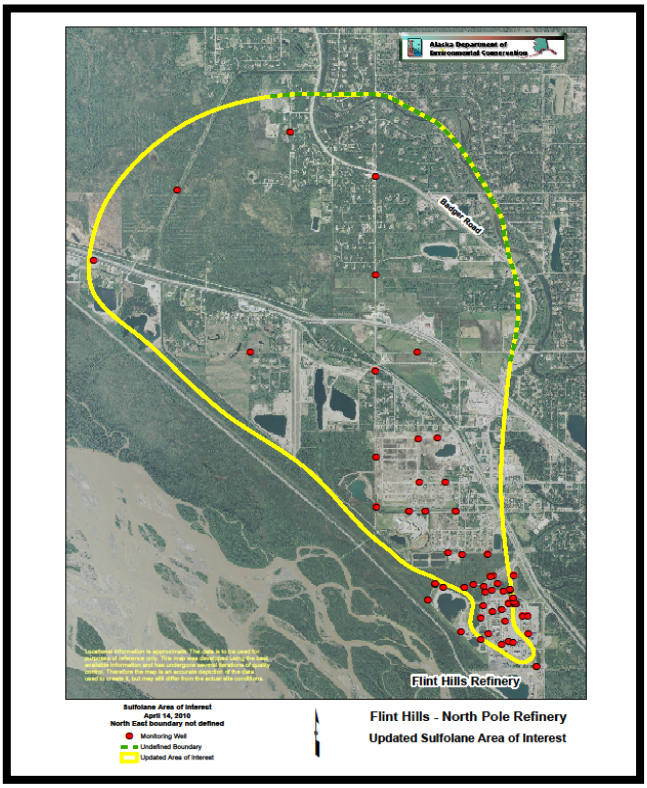
Wendell Avenue investigation

has been completed and will be implemented in FY 2011.

Department of Transportation's Peger Road Facility: Historical operations at the Department of Transportation and Public Facilities (DOT&PF) maintenance and operation building, and materials lab, resulted in trichloroethylene (TCE) and petroleum contamination in the area's groundwater. The groundwater has been completely delineated and is in a long-term monitoring mode. All residential drinking water wells are below the maximum contaminant level. Vapor intrusion has been investigated and the DOT&PF has turned on the depressurization system that was installed during construction at the materials lab. Monitored natural attenuation is the selected remedy for the groundwater. A remedy for the soil has not yet been chosen.

Mile 6 Richardson Highway Areawide Treatment/Monitoring: An areawide TCE groundwater plume was discovered in the Mile 6 Richardson Highway area in 1996. It is more than a mile in length, up to 1,200 feet wide and up to 100 feet in depth. It extends in a northwesterly direction from south of the New Richardson Highway to the Mile 6 village subdivision area. All but four residential wells are now below the established cleanup level of 3.5 parts per billion for TCE. An annual long-term groundwater program, which was started in 1996, includes sampling from permanent monitoring wells and a selected number of residential wells. The data from the monitoring program indicate a decreasing trend in contaminant concentrations over time.

Flint Hills Refinery: Flint Hills Resources is working with CSP staff, the Department of Health and Social Services' Division of Public Health and the City of North Pole on an environmental investigation of sulfolane, which was initially found in the groundwater on the refinery property. Sulfolane (tetrahydrothiophene 1, 1-dioxide), a solvent developed by Shell Oil Company in the early 1960s, is used for the recovery of aromatic components from petroleum. Ongoing monitoring efforts for sulfolane, initiated in 2001, were limited to the refinery property. Sulfolane concentrations in the monitoring wells on the refinery property were below DEC's then-current groundwater cleanup standard of 350 parts per billion. In October 2009, sulfolane was discovered in new monitoring wells near private homes immediately north of the refinery, and subsequently in private drinking water wells. Flint Hills is working with the City of North Pole, DEC and Public Health to continue to sample drinking water supplies and to ensure that residents have access to uncontaminated water. The federal Agency for Toxic Substances and Disease Registry reviewed available health effects research and in February 2010 recommended a 25 parts per billion drinking water limit for sulfolane. Flint Hills has upgraded its remediation system to pump groundwater at a higher rate without petroleum products fouling the air strippers. The remediation system upgrade will help reduce the source of sulfolane in the ground, slow the movement of sulfolane and reduce down-gradient groundwater concentrations over time. Flint Hills



Area of sulfolane-impacted groundwater and monitoring well placement

also continues to work on determining the extent of the contaminated groundwater plume. A technical project team provides oversight. The team is made up of state, federal and Flint Hills representatives, along with experts in the fields of toxicology, environmental chemistry, botany, hydrology and engineering.

Kincaid Park: The Kincaid Park former biathlon range site is located within the Municipality of Anchorage's 1,516-acre Kincaid Park. Soil at the range became contaminated from ammunition used during the 20-year life of the range. During the preconstruction earthwork, it was estimated that the intact range had 125 cubic yards of hazardous waste and contaminated soil. Roughly 40 percent was excavated, stockpiled and later shipped out of state for disposal as hazardous waste. The remaining contaminated soil and spent ammunition is believed to be present in up to 14,000 cubic yards of fill within the two- to three-acre project area, and in disturbed and undisturbed soil at the south end of the former range. The entire project area, consisting of a new soccer field and surrounding fill slopes and berms, is completely fenced. The former range and fill within the project area is subject to both federal and state regulations. It is a solid waste site regulated under the federal Resource Conservation and Recovery Act (RCRA) hazardous waste regulations, and it is also a contaminated site regulated under DEC's site cleanup rules.

River Terrace RV Park in Soldotna: Groundwater contaminant levels continue to show that the dry cleaning solvent, tetrachloroethylene (PCE), is degrading, due to enhanced natural attenuation with the periodic injection of Hydrogen Release Compound. The River Terrace RV Park site continues to be monitored to determine the effectiveness of the groundwater treatment system. While contaminant levels have decreased in the upper contaminant plume area and in most areas of the lower contaminant plume, data show that one pocket of elevated PCE remains in the lower contaminant plume area near monitoring well No. 47. The elevated pocket of PCE-contaminated soil has been treated and the CSP is continuing to monitor PCE degradation.

BP Exploration North Slope Project: A RCRA Administrative Order on Consent was issued to BP Exploration Alaska by EPA Region 10 in 2007 for corrective action at BP's Prudhoe Bay facility. Wastes generated at the Prudhoe Bay site have historically come from a variety of sources, including oil and gas drilling, development, production operations, construction projects, lab operations, North Slope cleanup operations and accidental releases of product. The EPA determined that certain waste constituents found at the facility are hazardous waste and is requiring investigation and/or assessment at some of the source areas to ensure protection of human health and the environment. The DEC is working with the EPA and BP to streamline the review and approval of work plans and reports. Final approval authority will remain with EPA. This ongoing project is anticipated to last several years.

DOT&PF Knik River Rest Stop in Palmer: The Bureau of Land Management originally owned the Knik River Rest Stop contaminated site, which has been historically used as an informal shooting range and dump site. The Department of Natural Resources worked with the BLM to clean up the site. As a result of the cleanup effort, the site received a cleanup complete with institutional controls determination in 2004. After the closure determination was issued, DNR received title of the property for the benefit of the Department of Fish and Game. The previous cleanup effort removed a significant amount of lead contamination from the former shooting areas, but recent sampling results indicate several areas still exceed cleanup levels. DF&G intends to develop the area as a park and stock Reflections Lake, a former gravel pit, for recreational fishing.

Chevron USA Refinery, Nikiski: Numerous monitoring wells in the bluff area have been removed in order to cut and grade the bluff to provide a safe work area to remove the groundwater recovery system and install a rock revetment and slurry wall. About 220,000 cubic yards of clean overburden were excavated in 2009 and 2010. Chevron is currently removing additional soil in the vicinity of the groundwater recovery system to prepare for the rock revetment and slurry wall installation. A new dewatering system was installed at the top of the bluff to intercept groundwater in the northern plume – one of two plumes – that would have migrated to the groundwater recovery system. Groundwater injection wells were installed to re-inject the groundwater upgradient of the capture system, rather than continuing to discharge captured water into Cook Inlet under an existing wastewater discharge permit. Additional ongoing remedial site activities include groundwater monitoring, the operation and maintenance of the existing groundwater recovery system, and *in-situ* chemical oxidation of the southern groundwater plume.

Installation of the slurry wall

GIS Implementation: With the hire of a new Geographic Information Systems (GIS) specialist in the fall of 2009, the CSP is able to provide better support to project managers for GIS visualization and analysis. Improvement of data accuracy and accessibility to data for internal and external users has become a key focus. GIS has recently been used for the Flint Hills Refinery sulfolane project, Kotzebue area cleanups and the Galena Air Force project.

FEDERAL FACILITIES RESTORATION PROGRAM ACCOMPLISHMENTS FY 2010

Salt Chuck Mine: CSP staff has worked closely with federal agencies to gather data required for placing the Salt Chuck Mine on the Environmental Protection Agency's National Priorities List (NPL). Risk drivers to human health were subsistence foods harvested from the intertidal zone impacted by heavy metals from mine tailings deposited in the bay.

Red Devil Mine: The CSP has coordinated with federal agencies on placing the abandoned Red Devil Mine on the NPL. While the site designation is being negotiated between federal agencies, the CSP has taken the lead in coordinating and commenting on the Bureau of Land Management's proposed investigation activities.

Defense State Memorandum of Agreement: Alaska is one of eight states participating in the Defense State Memorandum of Agreement (DSMOA) Steering Committee that is working with the Department of Defense on ways to improve DSMOA policy. Joint execution plans have been streamlined and reporting requirements have been reduced. Future work will focus on resolving issues related to eligible activities, dispute resolution and improving coordination.

Munitions Response Forum: Alaska and three other states are organizing and leading the state-led Munitions Response Forum that includes federal agencies and land managers. The group is drafting a state perspective report on the challenges of managing munitions sites. This report will be coordinated with the Environmental Council of the States for the development of a resolution supporting the states' recommendations.

Aniak White Alice Communication Site: DEC contractors have completed characterization work at the Aniak White Alice Communication System site to better define the volume of remaining PCB-contaminated soil, determine the extent of TCE contamination and assess TCE-vapor migration into a school building.

Aerial photo of Aniak White Alice site

Taku Gardens, Fort Wainwright: CSP staff has worked closely with federal agencies to ensure that housing built on top of an old disposal area that contains hazardous materials is properly addressed. Staff met regularly with the Army and EPA to review and approve removal actions and provide input on the remedial investigation and risk assessment plans.

Galena: New areas of contamination were found during site investigations at the Galena Airport. Additional funding from the Air Force is allowing more contractors to complete more removal actions at Galena.

Adak Abandoned Fuel Pipelines: CSP staff worked with the Navy at Adak to close roughly nine miles of abandoned fuel pipelines, continue free-product recovery at several sites, finalize after-action reports for munitions cleanup, finalize the remedial investigation and plan the feasibility study for Operable Unit B-2. Removal actions at two petroleum-contaminated sites have been planned and ongoing long-term groundwater monitoring and marine-tissue sampling projects continue.

Adak's abandoned pipelines

Joint Base Alignment: The CSP is working with its federal counterparts on the Joint Base Alignment at Elmendorf Air Force Base and Fort Richardson. Both Elmendorf and Fort Richardson are on the EPA's NPL. The CSP worked with its federal counterparts to ensure a smooth environmental management transition prior to Joint Base operations in October 2010.

FAA: CSP staff are working with the Federal Aviation Administration on 35 contaminated sites to finalize decision documents. Many of the sites were closed in FY 2010, resulting in updated exposure pathways at 57 areas of concern. Other sites are being addressed by the ongoing FAA remediation program.

Hydrocarbon Risk Calculator: A CSP program manager's working committee, led by the Federal Facilities group, has reviewed and approved a "Hydrocarbon Risk Calculator" initially proposed by the Statement of Cooperation working group several years ago. The calculator has an improved analysis method for calculating the risk of migration to groundwater. It also provides an easy-to-use cumulative risk calculator for petroleum-contaminated sites.

DEVELOPMENT AND IMPLEMENTATION PROGRAM ACCOMPLISHMENTS FY 2010

Reuse and Redevelopment:

- Hosted the second annual State and Tribal Response Program (STRP) Workshop.
- Presented at a Solid Waste Management training class composed of Indian General Assistance Program (IGAP) representatives from Tanana Chiefs Conference villages.
- Participated as part of the editorial board for the EPA Region 10 *Brownfield Update for the Pacific Northwest* newsletter.
- Continued to strengthen coordination between Reuse and Redevelopment (R&R)/Brownfields and EPA's IGAP. Helped IGAP staff prepare for presentations in nearly 200 communities across Alaska.
- Initiated and hosted several statewide STRP teleconferences with assistance from EPA. These teleconferences have helped to foster communication with and among the Alaska Tribal Response Programs.
- Worked to evaluate options for the assessment, cleanup and relocation of a shooting range at the end of Fairbanks International Airport's east ramp runway.
- Contracted eight STRP-funded and 11 state/Capital Improvement Project-funded DEC Brownfield Assessment and cleanup projects with DEC term contactors.

Draft Field Sampling Guidance: DEC released a new guidance document to provide fundamental sampling guidelines, methods and equipment options for sample collection at contaminated sites and leaking underground storage tank (LUST) sites.

Green Remediation: DEC increased its involvement and coordination with EPA in terms of developing and promoting green remediation cleanup strategies to restore contaminated sites back to productive use, reduce associated cleanup costs and promote environmental sustainability.

Quality Assurance:

- Conducted Quality Assurance (QA) office visits at the Fairbanks, Anchorage, Juneau and Soldotna offices to discuss recent site work and emerging issues. Presentations were made on new tools that have been developed for staff use.
- QA field inspections were conducted at 12 sites.
- Prepared annual QA report for submittal to the EPA.
- Updated the Quality Management Plan to describe CSP's quality system as it applies to both LUST and non-LUST sites.

- Initiated an internal audit on randomly selected Laboratory Data Review Checklists to ensure compliance with CSP policy.

Staff Technical Support:

- Provided toxicological and risk assessment support to CSP project managers.
- Participated on the national Interstate Technology Regulatory Council's Incremental Sampling Methodology.
- Supported Triad planning for multiple federal facility and state and private projects.
- Supported on-site specific Prevention and Emergency Response Program responses, such as the GC-2 spill, Cape Lisburne crude oil spill, Fort Knox sodium cyanide process spill and the spill response for the community of Eagle.

Institutional Controls Management: Staff began evaluating roughly 400 "conditionally closed" sites to determine if they meet the 2009 criteria for full site closure. An estimated 60 percent or more of these historical sites could have institutional controls removed and closed without further site management.

LOOKING AHEAD:
TOP 10 FY 2011 PRIORITIES

1. **Prioritize and clean up state-owned contaminated properties:** There are 1,204 state-owned sites in the CSP database. Of those, 438 have been closed and 242 have a cleanup complete with institutional controls status.

2. **Return contaminated properties to beneficial use:** The CSP continues to utilize state Capital Improvement Project and the Environmental Protection Agency's State and Tribal Response Program funds to assess and clean up contaminated properties for reuse.

3. **Revise existing petroleum cleanup levels:** Develop new regulations to combine AAC 75 (Contaminated Site Cleanup Rules) and AAC 78 (Underground Tank Regulations). The cleanup levels for petroleum and methods for determining them will be re-evaluated. Recommendations for revised cleanup levels in the regulation tables will be made utilizing the methodology and information from the follow three studies:

    a. A Hydrocarbon Risk Calculator review will establish the methodology for the re-evaluation.
    b. A scientific review headed by the University of Alaska Fairbanks' Dr. Dave Barnes of cleanup levels and methodologies used in other states and Canada.
    c. A review of petroleum constituent toxicology headed by UAF's Dr. Robert Perkins focusing first on partially degraded (polar) constituents of weathered fuel products in Alaska.

4. **Develop Field Sampling Guidance:** The draft Field Sampling Guidance, designed to address both Leaking Underground Storage Tanks (LUST) and non-LUST sites and eventually replace the current Underground Storage Tank Procedures Manual, was released to consultants for use during the 2010 field season. Users' comments and suggestions will be incorporated into the guidance document. Additional elements will be added in FY 2011.

5. **Increase field presence:** The CSP's goal in the beginning of FY 2010 was to increase the number of site visits by 30 percent. For FY 2009 (from July 1, 2008, through June 30, 2009), there were 189 site inspections. From July 1, 2009, to June 30, 2010, staff conducted 188 inspections. The 30-percent goal was likely too high; we believe 200 to 210 inspections for FY 2011 is realistic.

6. **Meet or exceed performance measures:** The site closure performance measure was reduced from 300 to 150 in FY 2009. Although the program fell short of that goal by 15 sites in FY 2010, we do not recommend revising the target at this time. In FY 2011, the CSP will work to increase the number of federal facility closures in particular (roughly 30 percent of FY 2010 closures).

    The closed exposure pathways performance measure was introduced in FY 2009. In FY 2008 and FY 2009, the program was in the midst of a large-scale site ranking process using the new Exposure Tracking Model.

Although that may have biased what could be realistically achieved on an ongoing basis, we do not recommend revising the target – 700 closed pathways – for FY 2011.

7. **Revise the indirect rate:** Over the past two years, the SPAR indirect rate has increased from 19.3 percent in FY 2009 to 32.6 percent in FY 2010. The new indirect rate for FY 2011 is scheduled to be 51.78 percent. Work will continue in FY 2011 to develop a new indirect rate for FY 2012.

8. **Analyze Capital Improvement Project expenditures:** The CSP has been reviewing FY 2010 CIP spending and will project CIP spending for FY 2011. It will modify the "2020 plan" as appropriate.

9. **Adjust Line 100 spending:** Recognizing that the CSP has historically lapsed a significant amount in its federal authorization, the CSP will conduct a thorough analysis of how its staff charges time, with an emphasis on adjusting staff time to spend more of the federal funds it receives.

10. **Coastal Impact Assistance Program grant:** The CSP partnered with the DEC's Division of Water to submit a proposal to the Department of Natural Resources as part of Alaska's Coastal Impact Assistance Program funding. Funding decisions for successful proposals were announced in mid-FY 2010 with a project award date of April 2010. The proposal detailed a $1.8 million plan to inventory and characterize numerous contaminated sites, landfills and dumping areas in the Western and Arctic coastal areas that release or have the potential to release hazardous substances into marine environments. The work plan proposed a four-year project.

Appendix A: FY 2010 Capital Improvement Project Summaries

FY 2010 Capital Improvement Project Total Amount Expended = $2,729,215.33

State-Lead Sites – Total amount expended = $596,727.39:

314 WENDELL AVE. (FORMERLY MC COMMERCIAL) – FAIRBANKS

Contract Amount: $240,307.52
Expended: $156,386.34
Category: Assessment

Results from Phase I and Phase II environmental site assessments in 2000-2002 indicated chlorinated solvent releases in the Wendell Avenue area. In 2008, the CSP conducted vapor intrusion assessments at three buildings at and around 314 Wendell Ave. and found solvents intruding into all the buildings. The highest concentrations were found at the former dry cleaner at 314 Wendell. The owner was unable to conduct the investigation so the CSP completed a site characterization in 2009 of the site and surrounding area along Wendell Avenue and down to the Chena River. Air concentrations above the federal Agency for Toxic Substances and Disease Registry's acute values were found at 314 Wendell. High soil gas, groundwater and soil concentrations were also found at the site and in the surrounding area. The solvent contamination also was found in pore water samples collected at the interface with the Chena River. Vapor intrusion has been documented in three buildings and is strongly suspected in two to three others.

FY 2010 work consisted of further source characterization, vapor intrusion data collection, further investigation of the potential risk to the Chena River, and completing an alternatives analysis for source removal and groundwater monitoring. The remediation system is planned for installation in FY 2011.

ALASKA REAL ESTATE PARKING LOT – ANCHORAGE

Contract Amount: $86,947.80
Expended: $36,438.95
Category: Assessment

The property is presently operating as a parking lot on Fourth Avenue, between Gambell and Hyder streets. The property has been occupied by a variety of businesses, including a likely dry cleaners from approximately 1968 to 1970, as well as a tire center, the last occupant of the last building on the site (the eastern portion) before the building was demolished. A Phase I Environmental Site Assessment (ESA) was conducted in 1993, indicating that underground storage tanks (USTs) might exist in the northeast and northcentral portions of the property, as well as chlorinated solvents.

In 1997, a Phase II ESA was conducted, identifying areas of contaminated soil and groundwater near the previous locations of the dry cleaner and tire businesses. Soil and groundwater sampling revealed levels of tetrachloroethylene (PCE), ethylbenzene, toluene, 1, 2, 4-trimethylbenzene, 1, 3, 5-trimethylbenzene, arsenic, barium, cadmium and chromium exceeded DEC cleanup criteria. An additional Phase II ESA was

conducted in 2004 and six exploratory test pits were advanced on the property with associated soil sampling, and removal of five hydraulic lifts, two associated hydraulic USTs, and two heating oil USTs, originally identified in 1997.

A relatively small volume of soil exhibiting hydrocarbon concentrations exceeding DEC cleanup criteria was encountered during the removal of the hydraulic lifts and associated USTs. The test pit excavations revealed numerous soil samples exhibiting PCE concentrations above DEC cleanup criteria. In 2007, five soil borings were advanced on the property and north of the property; three of the soil borings were completed as monitoring wells. PCE was again detected in soil and groundwater above cleanup levels on and off the property. Groundwater was found to be approximately 40 feet below grade and groundwater elevations suggest that groundwater flows northeast. In 2009, three soil gas probes were installed and indoor air, soil gas and outdoor air samples were collected to be analyzed for volatile organic compounds. PCE gas has been detected at elevated levels in soil gas and within occupied buildings.

FY 2010 work consisted of evaluating the nature and extent of PCE contamination and continuing the assessment of the human health risks associated with intrusion of PCE vapors into residential houses downgradient from the former dry cleaner.

CITY OF KOTZEBUE – KOTZEBUE

Contract Amount: $35,430.68
Expended: $27,425.12
Category: Assessment

Pore water samples collected in 2008-2009 confirmed petroleum contamination entering Kotzebue Sound from the City of Kotzebue. Several sites in Kotzebue are currently active and listed as contaminated sites in the CSP database; the risks for human health and/or the environment for those sites have not been assessed. Risks are expected to be present in the general area. Upcoming work consists of additional pore water sampling along Shore Avenue to gather baseline data prior to the installation of a Department of Transportation and Public Facilities sheet-pile seawall. Soil gas data was collected in 2009 from the area of the elementary school and from where the former hospital fuel tanks were located. Data indicate petroleum contamination still exists near the original source area, but soil gas levels suggest vapor intrusion is not a concern at the elementary school.

A survey of buildings along Shore Avenue located near historic fuel releases for vapor intrusion assessment was planned in FY 2010. Work has not been started because a determination of responsible parties needs to be established.

COOK'S CORNER TESORO – STERLING

Contract Amount: $3,350.00
Expended: $0
Category: Monitoring

Fuel contamination (primarily gasoline) was identified at Cook's Tesoro facility in 1989 during assessment work for expansion of the Sterling Highway through Sterling. The site is about 950 feet north of the Kenai River and 1,600 feet east of the Moose River. Investigation began in 1989, followed by cleanup measures

in 1990. Accessible contaminated soil was excavated to 20 feet below the ground surface, with approximately 3,300 cubic yards of soil removed. Excavated soils were treated and disposed of several miles to the east of the Cook's Corner Tesoro facility. Although a majority of contaminated soil was removed, some highly contaminated soil remained under and adjacent to the building. Soil contamination also remained directly beneath the excavation area down to the groundwater at 25 feet. A groundwater treatment system was installed and operated from 2004 to 2007.

Groundwater monitoring data indicates a declining trend in contaminant concentrations over the past 20 years. The residual dissolved-phase groundwater contaminant plume extends across the Sterling highway. The cleanup efforts conducted in the early 1990s, along with natural attenuation, have resulted in a decreasing level of groundwater contamination. The groundwater monitoring wells have defined the extent of the plume, and monitoring consistently indicates no detection of fuel contamination in drinking water wells or the Kenai River. A Record of Decision (ROD) was issued on Aug. 16, 2007. The site was conditionally closed via the ROD, and a Notice of Environmental Cleanup and Residual Soil and Groundwater Contamination was recorded for the release site.

The CSP agreed to continue to monitor groundwater quality at the site to confirm a decreasing concentration trend. Field work was completed in FY 2010; however, the final report was not received by the end of the fiscal year.

ESKIMO CREEK – EDDIE'S FIREPLACE INN – KING SALMON

Contract Amount: $44,086.25
Expended: $17,354.05
Category: Monitoring

In 1994, a petroleum hydrocarbon seep into Eskimo Creek in the vicinity of Eddie's Fireplace Inn was reported to DEC. The source(s) of contamination was unknown but sample analysis indicated a diesel range fuel product. Possible suspect areas included a former heating oil tank buried behind Eddie's Fireplace Inn and possible debris and/or runoff from the nearby airport. The owner had died and his estate was unwilling or unable to do any cleanup measures. The former heating oil tank had been decommissioned by the former owner without any sample data. It was suspected as a source and the CSP investigation identified soil and groundwater contamination in the former tank location. Interim corrective action included the installation of recovery wells to intercept product before it entered Eskimo Creek. However, soil contamination at (and adjacent to) the seep area continued to cause sheen and product release to the creek.

In 2001, an interception trench and recovery system was installed. About 100 cubic yards of petroleum contaminated soil excavated from the trench or adjacent to Eskimo Creek was transported off-site and stored at the community landfill. The contaminated soil was thermally treated in 2003 and used as landfill cover material. Between 2001 and 2009, about 91 gallons of product have been recovered from the interception trench and recovery wells. No sheening or detection of petroleum hydrocarbons has been observed in the creek since the interception trench was installed.

FY 2010 work included continued monitoring, and recovery of product from the interception trench and recovery wells.

FIRE LAKE FLYING CLUB – EAGLE RIVER

Contract Amount: $19,497.50
Expended: $10,247.52
Category: Monitoring

In 1995, two aviation fuel tanks, piping and two dispensers were removed. A replacement tank and piping were installed in 1998. Contamination was found along the piping and at the dispensers; the shallow groundwater was contaminated as well. South of a drinking water well, four soil/groundwater areas were sampled and found to be contaminated. In 2006, the responsible party excavated 68 tons of contaminated soil (north of the drinking water well) and transported it off-site for thermal treatment.

Fire Lake is also within 40 feet of the contamination. The drinking water well was sampled in 2005 but did not have detectable levels of contamination. In July 2007, 651 tons of contaminated soil and 23,000 gallons of contaminated groundwater were removed and treated. Confirmation sampling showed that some contaminated soil and groundwater remain at this site.

FY 2010 work included continued groundwater and drinking water well monitoring to assess risks to Fire Lake and the nearby drinking water well, as well as the evaluation of corrective action options for the remaining soil and groundwater contamination at the site.

GAFFNEY ROAD AREAWIDE GROUNDWATER INVESTIGATION – FAIRBANKS

Contract Amount: $186,388.80
Expended: $217,145.44
Category: Cleanup

The Gaffney Road area in Fairbanks has an areawide groundwater contamination plume and significant vapor intrusion issues at six buildings. The contaminants of concern include chlorinated solvents – primarily tetrachloroethylene, trichloroethylene and the dichoroethenes. The CSP has been assessing the site since 1997. The assessment used passive soil gas surveys, groundwater monitoring wells and sewer line sampling methodologies to define the nature and extent of the contamination.

Four source areas were discovered contributing to two separate groundwater plumes, Gaffney East and Gaffney West. The distribution of contaminants is associated with the sanitary sewer lines in the area. A major concern was the migration of the groundwater plume or plumes toward the Chena River and the possible risk to the community's public drinking water supply. The groundwater monitoring data from 2000 to 2004 indicated that the contamination was not reaching the public water wells. Vapor intrusion assessments from 2007 to 2009 indicate that there are six buildings with intrusion occurring, but only two have concentrations above a risk-based screening level.

FY 2010 work included installing a vapor extraction system to treat one of the source areas, establishing a long-term monitoring program for Gaffney West, completing an alternatives analysis for the source area in Gaffney East, and continuing the areawide groundwater program and evaluation of buildings/structures for vapor intrusion risks.

RIVER TERRACE RV PARK – SOLDOTNA

Contract Amount: $ 253,867.43
Expended: $305,506.62
Category: Cleanup

River Terrace RV Park is a 10-acre parcel located adjacent to the Kenai River in Soldotna. A dry cleaner facility operated there from the 1960s through the 1980s. Currently the parcel is occupied by a trailer court, a recreational vehicle park and associated facilities, including a laundromat. In 1992, DEC received a complaint of leaking barrels and 22 barrels of waste oil and other hazardous substances were identified at the site. One of the 55-gallon drums was labeled "perchloroethylene," which is also known as tetrachloroethylene (PCE). The owner was requested to have an environmental contractor remove the barrels and investigate the property based on its past use as a dry cleaning facility.

The assessments identified soil contamination above DEC cleanup levels for petroleum hydrocarbons and PCE. In 1997, the CSP evaluated the information from the site investigation and established alternative cleanup levels (ACL) for the site. The groundwater monitoring results identified PCE above the ACL and the property owner developed a plan to address the problems. The owner excavated approximately 2,700 cubic yards of soil under the Environmental Protection Agency's direction and treated it on-site using a soil vapor extraction system.

Following a settlement agreement with the property owner, DEC performed a water quality and sediment investigation in the Kenai River adjacent to the site. A Remedial Investigation/Feasibility Study was prepared that further characterized the site and evaluated several remedial alternatives to treat the contamination. An interim treatment system to treat storm water discharge prior to it entering the Kenai River was installed. A Record of Decision established cleanup levels at the site and specified Hydrogen Release Compound (HRC) as the method to treat the groundwater. The injections would occur in a phased approach. In 2000, 56 HRC injection points were installed in Phase I; in 2001, another 51 injection wells were installed under Phase II. In 2002, CSP staff determined that the degradation had stalled and conducted a pilot bio-augmentation study to determine if microbes could facilitate the further breakdown of contaminates.

In 2007, the non toxic ethene/ethane was detected in several monitoring wells further indicating that the treatment system was successfully working. CSP staff continued to monitor the treatment at the site and evaluate trends in contamination in both the groundwater and the sediments in the Kenai River. In addition to cleanup activities, funding has been provided for legal advice on cleanup matters, litigation of the state's cost recovery action, and litigation to retain access to the site for the assessment and cleanup work.

FY 2010 work included groundwater monitoring, HRC injection and an indoor air vapor intrusion assessment.

ZIPMART STORE – STERLING

Contract Amount: $87,854.68
Expended: $132,112.60
Category: Cleanup

The Sterling ZipMart facility was a gas station that opened in 1985. The original underground storage tank (UST) system consisted of two 10,000-gallon steel tanks with a single wall pipe leading to a dispenser island. In August 1995, a new 20,000-gallon three-compartment tank was installed to replace the two original steel tanks. Minor soil and groundwater contamination was encountered at the time of a 1995 tank upgrade. No cleanup action was conducted because it was not reported as a significant problem.

In December 2001, when the responsible party was closing the facility, additional assessment was performed. The 2001 fieldwork – conducted initially by the responsible party under the DEC Financial Assistance Program – identified significant soil and groundwater contamination associated with the piping and fuel dispensers. The exact quantity of fuel spilled is unknown, but DEC has determined that the quantity exceeds 50,000 gallons, based on a review of fuel records. DEC assumed the lead role on the project when the responsible party was unable to continue. To characterize, remediate and monitor the fuel release, 75 groundwater monitoring wells, 17 product recovery wells, seven well points and seven soil gas points were installed on the former gas station property, as well as on properties adjacent to and downgradient of the Sterling ZipMart.

The contamination migrated in a southeasterly direction and dissolved-phase fuel contamination in excess of DEC groundwater cleanup levels has been encountered in a plume approximately 2,400 feet long and up to 600 feet wide. A product recovery system was operated between 2002 and 2005, resulting in the recovery of more than 15, 000 gallons of product. Following the free-phase product recovery effort, a soil vapor extraction system was installed and began operating in the spring of 2005. In 2007, the soil vapor extraction system was expanded to the east of the existing system, which allowed for treatment and cleanup of the secondary source area on the Sterling Baptist Church property.

During the spring of 2009, an Oxygen Releasing Compound Pilot Study was installed to evaluate the effectiveness of injecting an oxygen source into the aquifer to enhance bioremediation at the downgradient end of the contaminant plume. In May 2009, the existing 20,000-gallon UST, associated fuel dispensers and piping were removed. Approximately 774 tons of petroleum-impacted soil were excavated from the vicinity of the UST system and transported to Anchorage Soil Recycling for thermal treatment.

A passive soil ventilation system was installed in the excavation backfill to facilitate removal of volatile compounds and enhance oxygen movement in the subsurface. The groundwater and drinking water wells in the area continue to be monitored by CSP staff to determine the risk to human health, and to define the extent of contamination. The soil vapor extraction system continues to extract gasoline in the vapor phase from the source area throughout the year.

FY 2010 work included further sampling of groundwater and drinking water, operation and maintenance of the soil vapor extraction system, injection of oxygen releasing compound to enhance contaminant degradation toward the front of the groundwater plume and product level monitoring. Investigation results indicate contaminants in groundwater are naturally attenuating along the edges of the plume and the lack of free product in monitoring wells and reduced contaminant concentrations in vapor samples indicate the soil vapor extraction system has been effective at reducing the mass of hydrocarbons in the source area.

Additional State-Lead Sites Funded in FY 2010 – Total amount expended = $192,987.22:

CAMPER CITY – TOK

Contract Amount: $24,964.92
Expended: $24,964.92
Category: Assessment

The facility is currently operated as a salvage yard. It previously had operated as a gasoline station selling fuel. Scrap materials, solid waste and hazardous materials were suspected to be present throughout the property and have also been placed on adjacent properties owned by other parties. Seven buildings are located on the site, some of which have been burned or are in poor condition.

In 1992, DEC signed a Compliance Order by Consent (COBC), noting that the drinking water well was too close to the service station fuel tanks. It was also agreed to that any work with the fuel system would be in accordance to federal and state regulations. The COBC also required submission of a site assessment report showing that polluted soils have been removed prior to any construction. Excavation of the station fuel tanks and stockpiling of potentially contaminated soils was conducted from 1992-1993, without DEC's consent. At that time, DEC announced that a closure letter could not be issued.

In 2007, a major fire destroyed the gas station building, attached store, living quarters and adjacent restaurant on the property. The basement had a below-ground furnace which caused a secondary incineration, melting the pole structure of the building. A site inspection in 2000 documented that substantial quantities of lead-acid batteries were stored on the ground and there was a large accumulation of drums, barrels and other equipment and vehicles. Oil-stained soil was observed in some locations.

FY 2010 work included the evaluation of the salvage yard as well as an additional property on both sides of the salvage yard. An inventory was taken, including the location of buildings, areas of debris, potential sources of contamination and areas of stained soil based on visual observations and field screening. An estimate of approximate volume of waste, debris, hazardous material and contaminated soil was determined. This figure was used to determine the approximate costs for the removal of surface wastes and contaminated soil from the three properties.

M & M ENTERPRISES ON WYOMING DRIVE – ANCHORAGE

Contract Amount: $ 36,178.99
Expended: $7,836.57
Category: Cleanup

A 1991 site assessment, conducted in response to a neighbor's complaint of acid draining off-site, identified elevated levels of lead and total petroleum hydrocarbons in the soil and groundwater. Additional site assessment work was conducted between 2001 and 2004. Soil samples exceeded applicable cleanup levels for lead, mercury and 1,2,4 trichlorobenzene. Three monitoring wells were installed and sampled but they did not detect any groundwater contamination above cleanup levels. In 2005, about 372.3 tons of lead-contaminated soils were removed to reduce the risk at the site.

In 2007, two additional areas were investigated within the project site, by advancing two borings and collecting additional soil samples. During the same time period, approval was given to install an asphalt cap. This would prevent exposure to humans through ingestion and dermal pathways from lead contamination. Complications from the asphalt cap required additional investigation, the final removal of the cap, and replacing it with a gravel cap and engineered drainage.

FY 2010 work included the installation and evaluation of the asphalt cap as well as the redesign of the cap for gravel replacement.

RED DOG MINE– KIVALINA

Contract Amount: $15,228.36
Expended: $0
Category: Monitoring

Fugitive dust from the transportation of the ore concentrate between the Red Dog Mine site and the Port Facility has resulted in metals contamination in those areas and along the 52-mile connecting road. Petroleum contamination is also present at the powerhouse due to the release of crankcase oil and fuel oil from the sump beneath the generators. There is ongoing participation between several state agencies and Teck Cominco.

Upcoming work will include continued review of the draft subplans associated with the Fugitive Dust Risk Management Plan. In June 2010, DEC received the draft monitoring and remediation sub-plans and issued a public notice.

ROYAL MASTER'S LAUNDERETTE – FAIRBANKS

Contract Amount: $218,804.20
Expended: $159,570.73
Category: Cleanup

The site is part of an areawide effort to track the tetrachloroethylene, trichloroethylene and 1, 2 dichloroethane contaminants in groundwater from multiple sources. This property has been made an individual site because it was a former dry cleaners and soil and groundwater contamination at the southwest corner of the building is causing vapor intrusion concerns for the building. This site is the current location of the Good News Bible and Bookstore on Gaffney Road. There has been a settlement agreement with the responsible parties, including the current owner and the former owner who operated the dry cleaning facility. The investigation to date has shown the plume does not extend to the city drinking water wells, which are approximately a half-mile downgradient of the site.

FY 2010 work included the installation of a soil vapor extraction system to treat the soil and stop vapor intrusion. Groundwater and air monitoring continues as well.

TRAILSIDE GENERAL STORE – HOMER

Contract Amount: $ 3,407.00
Expended: $615.00
Category: Monitoring

In the spring of 1999, gasoline emerged through fissures in the pavement around the Trailside General Store's underground fuel storage tank systems. Trailside's contractors initially responded to the release and initiated cleanup actions, eventually excavating approximately 5,000 cubic yards of contaminated soil. Trailside's contractor ceased all work on the project, claiming a lack of payment by Trailside in the spring and summer of 2000. The contractor left an open excavation at the site and high concentrations of fuel contamination remained in site soils.

The CSP then continued with further response work at the site: stabilizing the excavation site and completing additional excavation and removal of highly contaminated soils, and completing backfilling in the cleanup excavation pit to ground level. A groundwater diversion system was installed to prevent contamination from migrating under the existing building on site. Excavated contaminated soils were transferred to Homer's Alaska Department of Transportation and Public Facilities maintenance facility. The soils were subsequently remediated and land-spread at the DOT&PF maintenance facility.

Periodic groundwater and indoor air sampling has been performed at the site since 2001. Groundwater sampling was last conducted at the site in the fall of 2008. The building has been leased throughout the time period and continues to be used by private and/or public entities. The properties surrounding the site are commercial properties adjacent to the Sterling Highway, with commercial/residential properties located south of the property, away from the Sterling Highway.

FY 2010 work consisted of sampling several groundwater monitoring wells and the groundwater diversion system, and preparing a report to document current groundwater quality conditions. Field work was completed in FY 2010; however, the final report was not received by the end of the fiscal year.

State-Owned Sites – Total amount expended = $1,177,005.68:

DEED AKIAK ELEMENTARY FORMER SCHOOL TANK FARM – AKIAK

Contract Amount: $33,470.00
Expended: $25,790.28
Category: Assessment

A site reconnaissance was performed at the village of Akiak in 2000, in conjunction with the Akiak High School site visit. The tank farm is located approximately 50 feet west of the elementary school and 350 feet west of the Kuskokwim River. There is a 3.5-foot-high gravel dike and liner around the tanks. The tank farm consists of two vertical, welded steel single-wall tanks with removable tops. Both tanks have a capacity of approximately 8,000 gallons. The above-ground storage tanks (ASTs) are supported on timbers with planking. The timbers and planking supporting the ASTs within the berm area were flooded because of precipitation retained by the berm. A chemical sheen was noted on open water within the bermed area. Vegetation was also growing within the bermed area, through the liner. One soil sample, collected at 2 feet below ground surface down-slope from the AST farm main valve assembly, contained petroleum

constituents above ingestion, inhalation and direct-contact cleanup levels. During the onsite inspection, children were playing around the ASTs.

FY 2010 work involved the evaluation of the nature and extent of contamination. Soil samples from west of the tank farm contained petroleum constituents above ingestion, inhalation and direct-contact cleanup levels. An estimated 285 cubic yards of petroleum-impacted soil is located at this location. The rest of the test pits contained detectable levels of contaminants, but below cleanup levels. Groundwater was not encountered.

DEED AKIAK HIGH SCHOOL FORMER TANK FARM – AKIAK

Contract Amount: $31,738.00
Expended: $24,240.54
Category: Assessment

A site reconnaissance was performed at the village of Akiak in 2000, in conjunction with the Akiak Elementary School project. The above-ground storage tank (AST) farm is located behind the high school, approximately 700 feet from the Kuskokwim River. There is a 2-foot-high gravel dike and liner around the AST farm. Vegetation is growing inside the dike area. The facility is not fenced or gated. The tank farm consists of seven vertical, welded steel single-wall tanks with removable tops. The individual ASTs vary in capacity from 5,000 to 9,750 gallons, with a total tank farm capacity of 54,000 gallons. The ASTs are supported on timbers with planking on sandbags. Stained and darkened soil and sandbags were noted throughout the bermed area. One soil sample, collected at 12 inches below ground surface adjacent to the gasoline fuel dispensing pump on the west side of the AST farm, contained petroleum constituents above ingestion, inhalation and direct-contact cleanup levels.

FY 2010 work involved the evaluation of the nature and extent of contamination. An estimated 69 cubic yards of petroleum-impacted soil is located to the south. Groundwater was not encountered.

DEED ALLAKAKET SCHOOL – ALLAKAKET

Contract Amount: $40,220.00
Expended: $32,316.19
Category: Assessment

The village of Allakaket suffered severe flood damage in 1994, the result of unprecedented heavy rains. Damage to fuel storage facilities, tanks and pipelines resulted in fuel-contaminated soil in many parts of the community. Residents expressed concern about the future health of their children resulting from contact with contaminated soil at the school and vapors emanating from contaminated soil in proximity to the school tanks. There is also concern about the contamination affecting their food and water well supply. Assistance was requested in delineating the extent of the problem, with an interest in redeveloping property in the vicinity of the perceived releases into a community area, to include both a playground and greenhouse areas.

Using the findings of additional field assessments underway in Allakaket, the FY 2010 work involved a focused interim removal action (excavation) at the identified contaminated areas to make the site ready for reuse by the community and the school.

DEED ANIAK WHITE ALICE COMMUNICATIONS SITE – ANIAK

Contract Amount: $1,221,020.86
Expended: $767,688.94
Category: Assessment

The Aniak White Alice Communications System (WACS) site was developed and used by the Air Force as part of its Cold War communications network. By the late 1970s, the military facility was obsolete and was turned over to the Kuspuk School District, which renovated the main building and has used it as a school since 1981. The district has used it as a vocational education and middle school; it is currently used for home sciences, shops and a computer classroom for the secondary school, dorm rooms and staff offices. The Department of Transportation and Public Facilities has owned the property since 1965 and currently leases the site to the Kuskokwim School District.

During WACS operations and the renovation of the school by contractors, fluids containing polychlorinated biphenyls (PCBs) were spilled in and around the generator room and onto the ground outside the building, resulting in soil contamination. Hazardous materials were placed in drums that were moved to various locations on the property, where additional spills reportedly occurred. PCB cleanup at the site was conducted in 1979-1983 and attempted to remove all PCB-contaminated material and soil containing more than 50 parts per million PCBs. After additional contamination was discovered in 1994, the Army Corps of Engineers assumed responsibility for the military's portion of the contamination under the “Formerly Used Defense Site Program.”

In 1997, the Environmental Protection Agency released a report that showed PCBs remained in the soil outside the middle school wood shop, which was the former generator room at the White Alice site. Subsequent sampling inside the school documented that PCBs had been tracked into the building. With CSP oversight, the Army Corps of Engineers had the inside of the middle school cleaned up and covered PCB-contaminated soil outside the school with a temporary liner and six inches of clean soil. Between 1998 and 2003, work was conducted to better characterize the extent and location of remaining PCB contamination, cleanup a portion of the site, and complete a feasibility study to evaluate alternatives for completing the cleanup. The excavation and off-site disposal of soil containing more than 1 ppm PCB was recommended as the best overall alternative when considering regulatory compliance, protection of human health and safety, implementability, effectiveness and cost.

Cleanup began in FY 2008. Pre-excavation screening results indicated that the lateral extent and volume of PCB-impacted soil was significantly greater than expected. Additionally, trichloroethylene (TCE)-contaminated soil and groundwater were discovered in 2008 and further characterized in 2009. TCE vapors were determined to be migrating into the Joe Parent School building at concentrations above target indoor air risk based levels. Air filters were installed inside the building in 2009, which lowered the TCE concentrations significantly, but not below the target levels.

During the first half of 2010, the 2009 site characterization and cleanup alternatives evaluation report was finalized and a contract was awarded to design, install and operate a sub-slab depressurization system to stop TCE vapors from migrating into the building. During FY 2011 the vapor mitigation system will be operated and an overall cleanup plan will be developed to address remaining PCB-contaminated soil and TCE contaminated soil and groundwater. Implementation of the remaining cleanup is anticipated in FY 2012 with long-term operations, maintenance and monitoring expected to continue for many years due to the difficulties and costs involved with TCE cleanup.

DEED ANVIK IDITAROD AREA SCHOOL FORMER TANK FARM – ANVIK

Contract Amount: $27,630.39
Expended: $27,630.39
Category: Assessment

This tank farm is located approximately 200 feet southeast of the Anvik School, near the airstrip. The tank farm consists of three riveted steel rail tank cars with the wheels removed situated within a plastic-lined dike (with a total capacity of 21,126 gallons). The inside of the dike was covered with 2 to 6 inches of ice at the time of the visit. The tanks appeared to be empty. Evidence of overfilling was apparent on the three tanks. A strong diesel odor was noted near the rear of the middle tank car. According to local residents, approximately 3,000 gallons of fuel were spilled at this tank farm when a valve was inadvertently left open. It is not clear whether the spill was contained inside the dike. A soil sample collected from outside the dike near a cam lock fitting contained high amounts of diesel- and gasoline-range organics.

Work in FY 2010 consisted of excavating seven test pits around the perimeter of the former tank farm and collecting soil samples from various depths within the test pits. The test pits within the bermed tank pit were not excavated, as the tanks are still in place, though they are reportedly empty. The liner inside the tank pit was intact and appears to have kept any fuel releases within the lined area, as no soil contamination was detected in any of the test pits. A drinking water sample from the nearest well did not contain detectable concentrations of contaminants and the site was closed without institutional controls in April 2010.

DEED CHALKYITSIK SCHOOL HOME OIL TANK SPILL – CHALKYITSIK

Contract Amount: $8,000.00
Expended: $0
Category: Cleanup

In 2002, approximately 750 gallons of diesel spilled as a result of overfilling a 250-gallon heating oil day tank (HOT) at the Chalkyitsik School Southern Teacher's Housing. A diversion trench was excavated to keep contaminated melt water from flowing into the Black River during spring break up. In 2003, approximately 270 cubic yards of contaminated soil was excavated and stockpiled on site. Confirmation soil samples contained petroleum contamination above migration to groundwater cleanup levels.

Upcoming work will involve removing and landfarming the historic 270 cubic yard soil stockpile located at the site. Contaminated soil will be removed and the excavation will be brought back to grade with clean fill. Contaminated soil will be transported to a landfarm area located at the Department of Transportation and Public Facilities Airport apron adjacent to the site, and spread 18 inches thick. The landfarm will be tilled twice a week for eight weeks using local hire. Performance samples will be collected in the summer of 2011. Field work was not completed in FY 2010 due to a lack of access to a fill source.

DEED CHALKYITSIK BULK FUEL STORAGE – CHALKYITSIK

Contract Amount: $107,374.00
Expended: $1,684.43
Category: Cleanup

Historic spills and leaks have caused areawide soil contamination near the Chalkyitsik School bulk fuel storage facility. These source areas include: the former fuel bladder storage area and the school water treatment building day tank; the Village Council and school district tank farm; the generator building; the northern teachers' housing; and the pipeline spill at the water treatment building. These five source areas, which were evaluated in 2002, contained free product, petroleum odor and petroleum staining. Soil and groundwater samples collected contained petroleum contamination above inhalation, ingestion and migration-to-groundwater cleanup levels.

FY 2010 work included completion of the work plan. Field work was not completed in FY 2010 due to a lack of access to a fill source.

DEED FORT YUKON SCHOOL – FORT YUKON

Contract Amount: $42,043.34
Expended: $38,459.63
Category: Assessment

In 2005, petroleum contamination was encountered in soil near four above-ground storage tanks that comprise the school tank farm during a soil evaluation for a proposed sewer alignment. The nature and extent of petroleum-impacted soil was unknown.

FY 2010 work involved the evaluation of the horizontal and vertical extent of contamination. Twenty-one subsurface soil samples that were collected contained petroleum contamination above inhalation, ingestion, and migration-to-groundwater cleanup levels. Further work, which will occur in the summer of 2010, involves collecting 15 surface soil samples to evaluate the surface soil pathway exposure.

DEED HUSLIA HUNTINGTON SCHOOL ABOVE-GROUND STORAGE TANKS – HUSLIA

Contract Amount: $19,791.46
Expended: $12,220.44
Category: Assessment

The site consists of property and buildings owned by the Yukon-Koyukuk School District in Huslia. In 1979, a combined fuel system and tank farm was installed at the school with the capacity of 40,000 gallons of diesel fuel. In 2006, the tank farm and fuel delivery system were abandoned. Limited site characterization and vapor intrusion assessments were completed in 2000, 2007 and 2008. Diesel contamination remains in the soil adjacent to school buildings and teacher's housing.

Work completed in FY 2010 included a site visit and the development of a corrective action plan.

DEED PEDRO BAY FORMER DENA'INA SCHOOL – PEDRO BAY

Contract Amount: $135,522.23
Expended: $122,402.21
Category: Cleanup

Diesel fuel odors in the school and the presence of an occasional sheen on the water at the shore of Lake Iliamna was reported in 1993. Historic fuel storage methods involving several hundred fuel drums stored near the school playground area, former tank farm and piping, led to significant spills on the property. Soil and groundwater were contaminated with petroleum hydrocarbons, including diesel and benzene. Various forms of interim corrective action were implemented to mitigate the spread of contamination at the site, including an interceptor trench, excavation, bio-venting and groundwater treatment. It was determined necessary that the school structure be removed to expedite the removal of contaminated material from beneath the structure. In 2007, the demolition work was completed and the Department of Commerce requested DEC to continue with cleanup operations that were started initially.

FY 2010 work included removing an estimated 1,200 cubic yards of contaminated material for on-site treatment in a landfarm, tilling of the landfarm and reporting.

DEED TUNUNAK FORMER BIA SCHOOL TANK FARM – TUNUNAK

Contract Amount: $29,015.35
Expended: $2,355.97
Category: Assessment

The old school building is currently being used as teacher's housing. Site reconnaissance was conducted in 2001. Stained soil and diesel odors were observed, but no information was available regarding historic spills. Four soil samples that were collected indicated concentrations of diesel-range organics (DRO) above cleanup levels. Three samples were high for DRO but all were below cleanup levels for gasoline-range organics, residual range organics, benzene, toluene, ethylbenzene and xylenes. A drinking water well used by the school is less than 30 feet away from the tank farm. The tank farm still exists but is no longer used. An intermediary tank has been placed in or near the old tank farm.

FY 2010 work included further delineation of contaminated soil associated with the tank farm. A pre-treatment sample and a post-treatment sample were collected from the school's drinking water well to supplement the volatile organic compounds sampling required by the drinking water program.

DNR GUSTAVUS TANK FARM – GUSTAVUS

Contract Amount: $73,276.62
Expended: $0
Category: Cleanup

The Gustavus bulk fuel tank farm was reportedly constructed between 1945 and 1955 for the Federal Aviation Administration to supply fuel to the airport from 1945 to 1972. A pipeline going out to the Gustavus Dock allowed the fuel to be pumped from the barge into the tanks. In the late 1950s, corrosion to tank rivets caused fuel leakage to the ground until repairs were made. In 1983, the owner placed a liner

around the tanks in the tank farm, but not under them. The tanks remained resting on the ground surface. A layer of soil was placed on top of the liner in order to prevent sunlight from degrading the liner. The 1992 environmental report stated that the soil adjacent to several 10,000-gallon above-ground storage tanks was stained with petroleum products. However, the field team did not collect any samples from the former FAA tank farm. Stained soil was not observed outside the berm or beneath the fuel barge off-loading and dispensing pipelines. The report recommended that FAA remove and remediate petroleum-contaminated soil in the containment area of the dock area tank farm.

Future work will include additional groundwater sampling to monitor hydrocarbon contamination to ensure that off-site contaminant migration pathways are protected. Field work was started in FY 2010; no invoices were received by the end of the fiscal year.

DOT&PF ANIAK AIRPORT GROUNDWATER STUDY – ANIAK

Contract Amount: $39,089.52
Expended: $16,376.51
Category: Monitoring

Historic spills and leaks from various sites have caused areawide groundwater impacts at the Aniak Airport. These sites include the following Department of Transportation and Public Facilities' facilities: the Aniak maintenance building, runway apron, City Shop building, and MarkAir – Aniak Airport.

FY 2010 work included groundwater sampling, potable well sampling, groundwater monitoring well inventory, and a site reconnaissance. The purpose was to evaluate contaminant trends in groundwater at the Aniak Airport.

DOT&PF DEADHORSE BLOCK 700 LOTS 7A & 8 – DEADHORSE

Contract Amount: $23,796.75
Expended: $5,202.26
Category: Assessment

The Department of Transportation and Public Facilities currently occupies the subject lease lots, which support a maintenance facility for state vehicles, airport services and heavy equipment storage. During the property's 1992 Environmental Phase I Assessment, heavily stained surface soils were observed both inside and around the shop facilities. In addition, it was noted that some pond surface waters exhibited a petroleum-type sheen. The assessment pointed to the following areas of concern: the drum and materials storage area on the eastern side of the warm storage building, the subsurface soils surrounding the on-site above-ground storage tanks, the area surrounding the fuel dispensing station, and the maintenance shop floor.

During the Phase II Assessment, 33 soil borings were advanced. The analytical results found no benzene present in any of the samples. Elevated levels of xylene were found as well as diesel-range petroleum hydrocarbons (DRPH). The elevated DRPH samples were found inside the two shop buildings. Tetrachloroethene (PCE) was found at concentrations above cleanup levels. In 2009, four soil borings were advanced inside the Shop building to evaluate contaminant concentrations detected in the previous investigations. Soil samples were collected from each borehole and analyzed for diesel-range organics

(DRO), residual-range organics, gasoline-range organics, volatile organic compounds, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs). DRO was detected at 8.5 to 11 feet below ground surface and benzene was detected at 5 and 6 to 10.5 feet below ground surface. PCBs were not detected in any sample and PAHs were not detected above cleanup levels. The chlorinated solvents initially detected in the 1994 samples were not detected in 2009 samples.

FY 2010 work included finalizing the report documentation for the FY 2009 field work.

DOT&PF GIRDWOOD MAINTENANCE STATION – GIRDWOOD

Contract Amount: $3,577.00
Expended: $0
Category: Monitoring

The site is located approximately a quarter-mile north of Mile 90.5 Seward Highway. The site is used for supply storage, and the operation and maintenance of equipment necessary for maintaining Girdwood-area roadways. Soil and groundwater contamination was detected during the removal of two 2,000-gallon diesel and gasoline underground storage tanks (UST) in 1997 and one above-ground 2,000-gallon heating oil tank in 1999. Approximately 43 cubic yards of petroleum-impacted soil were generated and stockpiled during the UST removals.

Additional assessment and cleanup work was completed in 2000. Approximately 755 cubic yards of impacted soil, including the soil stored from the UST removal in 1997, were transported off-site for treatment. Post-excavation soil samples showed that petroleum contamination still remained at the site. A groundwater sample collected from the water supply well located approximately 50 feet from the former USTs, which serves the shop building for equipment maintenance and washing, did not detect petroleum contamination. Drinking water for the facility is provided via bottled water.

Groundwater monitoring wells were installed to determine groundwater quality conditions and to determine if the petroleum contamination plume was migrating and expanding. The results indicated that petroleum hydrocarbons in the groundwater exceed the applicable cleanup level; however, the plume appears to be stable or diminishing.

In 2006, the CSP issued a Conditional Closure Letter documenting that residual soil and groundwater contamination does remain at the facility, but does not pose an unacceptable risk to human health or the environment under current property use. The CSP established a groundwater monitoring program to confirm that the groundwater contamination is decreasing, and does not pose a threat to human health and the environment.

FY 2010 work included a groundwater sampling event and the preparation of a report to document current groundwater quality conditions. Field work was completed in FY 2010; however, the final report was not received by the end of the fiscal year.

DOT&PF GULKANA AIRPORT – GULKANA

Contract Amount: $11,093.70
Expended: $11,093.70
Category: Assessment

Evidence of a reported release on lot 2A at the Gulkana Airport led to difficulties in leasing adjacent lots to the public due to fear of incurring liability associated with pre-existing conditions. Since the property and structures are falling into disrepair and there are only limited sites available at the airport to support commercial business, assessment was determined as necessary to clarify potential environmental conditions.

FY 2010 work consisted of a site characterization of the Gulkana Airport Lease Blocks 20 and 21 to help establish current environmental conditions and enable leasing of the site.

DOT&PF HOMER AIRPORT MAINTENANCE FACILITY – HOMER

Contract Amount: $27,416.60
Expended: $0
Category: Assessment

The Department of Transportation and Public Facilities' Homer Airport heating oil tank site is located on the south side of the Homer Airport, adjacent to the DOT&PF maintenance building. During the removal of a 3,000-gallon heating oil tank in 1998, petroleum-contaminated soil was encountered. Approximately 44 cubic yards of contaminated soil were generated during the underground storage tank removal action. Sampling depicted concentrations of diesel-range organics and benzene that exceeded DEC cleanup levels remaining in the subsurface soil. The extent of residual soil contamination was not documented, and no groundwater assessment work was performed.

FY 2010 work included additional soil and groundwater sampling. Field work was completed but the final report was not received by the end of the fiscal year.

DOT&PF HOMER FACILITY – HOMER

Contract Amount: $4,522.00
Expended: $0
Category: Monitoring

Petroleum releases from the Department of Transportation and Public Facilities' Homer maintenance shop underground fuel storage tank (UST) systems were identified in 1997 at the time of the permanent UST closure. A 3,000-gallon gasoline tank and a 4,000-gallon diesel tank were removed by excavation, and contaminated soil was detected and reported at that time. Approximately 15 cubic yards of soil were excavated and stockpiled on site; however, contaminated soil remained in the tank excavation pit.

In 2006, soil borings and groundwater monitoring wells were installed at the site in an effort to identify the extent and magnitude of the petroleum contamination. Soil and groundwater contamination exceeding

DEC cleanup levels was detected and the limits of the contamination were not defined. In 2007, three additional soil borings were drilled and sampled, with monitoring wells installed in each boring.

The extent and magnitude of the petroleum contamination was sufficiently identified to reach a determination that the residual contamination was not posing an unacceptable risk to human health or the environment, based on the current property use. No further cleanup work is planned at this time; however, a long-term groundwater monitoring schedule has been established to monitor trends in groundwater quality.

FY 2010 work included a groundwater sampling event, and the preparation of a report to document current groundwater quality conditions. Field work was completed but the final report was not received by the end of the fiscal year.

DOT&PF KOTZEBUE AIRPORT (AREAWIDE) – KOTZEBUE

Contract Amount: $109,930.81
Expended: $0
Category: Assessment

Several sites in Kotzebue are currently considered active at CSP, but they have not been assessed. Petroleum contamination risks are present at the Department of Transportation and Public Facilities' Kotzebue Airport maintenance station and the Kotzebue drum dump. Upcoming pore water sampling near the airport will likely identify petroleum contamination entering into both Kotzebue Sound and Kotzebue Lagoon. Soil sampling at the drum dump will indicate if petroleum contamination is at that location.

FY 2010 work included monitoring well installation and sampling. No invoices were received by the end of the fiscal year.

ADOT&PF MARK AIR - KING SALMON – KING SALMON

Contract Amount: $45,209.05
Expended: $9,374.68
Category: Cleanup

Groundwater in the area of the airport terminal has been impacted by leaking above-ground and underground fuel storage tanks as well as by poor fuel handling and transfer practices. The resulting groundwater contamination is suspected of impacting a nearby potable water well, as free product remains on the surface of the groundwater. Additional site characterization in 2007 did not fully delineate the extent of contaminated groundwater. Free product recovery was started in 2007 and continued into 2008. The Department of Transportation and Public Facilities is in the process of realigning the road in front of the terminal building, potentially impacting existing monitoring wells.

DOT&PF NINILCHIK MAINTENANCE FACILITY – NINILCHIK

Contract Amount: $3,550.00
Expended: $0
Category: Monitoring

During the removal of a 2,000-gallon unleaded gasoline underground storage tank (UST) and a 2,000-gallon diesel UST in 1997, petroleum-contaminated soil was identified. Eighteen cubic yards of impacted soil were excavated and stockpiled on site.

Additional site assessment and cleanup activities occurred in 2000. The site assessment and cleanup work in 2000 resulted in the excavation of an additional 1,120 cubic yards of contaminated soil that were stored on-site in two long-term storage cells. Post-excavation sample results indicated that elevated petroleum concentrations remained in the northwest portion of the excavation. Based on the depths of this residual soil contamination, it appeared that the soil contamination only remained at depth, near the groundwater table.

The excavated contaminated soil was thermally remediated on-site in 2004 using a thermal desorption unit. Four groundwater monitoring wells were installed during 2000 to assess and monitor groundwater quality at the site. No contamination has been detected in two adjacent drinking water wells.

In 2005, the CSP issued a Conditional Closure Letter documenting that petroleum contamination remains in the UST excavation area; however, it was determined that this residual contamination should not pose an unacceptable risk to human health or the environment. Natural attenuation will further degrade the remaining contamination over time. The CSP established a groundwater monitoring program to allow for groundwater monitoring on an annual basis until two consecutive sampling events show all sampling points are below the DEC groundwater cleanup levels.

FY 2010 work included a groundwater sampling event, and the preparation of a report to document current groundwater quality conditions. The final report was not received by the end of the fiscal year.

DOT&PF NORTHWAY LAKEVIEW MAINTENANCE FACILITY – NORTHWAY

Contract Amount: $52,915.48
Expended: $26,107.04
Category: Assessment

The Department of Transportation and Public Facilities maintenance station near Northway is located approximately six miles south of Mile 1256 of the Alaska Highway. The site is also the location of a former Haines/Fairbanks Pipeline Pump Station. The pipeline was decommissioned in 1960 but four above-ground storage tanks (ASTs) with associated piping and dispensers remained at the facility. DOT&PF has operated the site since 1986 and is currently using one AST. The site is fenced, and consists of a metal shop and storage buildings. The surrounding area is not populated.

Water for the site comes from a deep on-site well on the east side of the shop building. Due to contamination in the drinking water well, a holding tank was installed in 2006. Drinking water is now hauled from an off-site source near Northway village. In 2007, the state attempted to remove potential sources from the site including three ASTs with associated piping. A 4-inch gasoline piping rupture was discovered and is likely the major source of contamination. Approximately 420 cubic yards of soil were

removed and stockpiled on-site. The drinking water well was sampled and continues to show high levels of benzene contamination. Fractured bedrock in the area may hinder future groundwater investigations.

FY 2010 work included remediating the 420 cubic yard stockpile; sampling the drinking water well and developing a plan to prevent unauthorized use of the well; characterizing potential sources of contamination at the site; and evaluating the effect of groundwater contamination on surface water quality at nearby Yarger Lake.

ADOT&PF PEGER ROAD FACILITY – FAIRBANKS

Contract Amount: $96,534.36
Expended: $9,648.34
Category: Monitoring

The Department of Transportation and Public Facilities' operations and maintenance facility is located on Peger Road in Fairbanks. Environmental investigations began in the early 1990s, and are the result of compliance with underground storage tank (UST) regulations and a federal Resource Conservation and Recovery Act compliance audit.

Soil and groundwater within the facility are contaminated with chlorinated solvents, specifically trichloroethylene (TCE), and gasoline and diesel fuels. Groundwater contaminant plumes extend off-site. There are two TCE groundwater plumes: one originating at the materials laboratory, and the other originating in the vicinity of the equipment shop.

A petroleum plume originates near the former USTs at the operations and maintenance building. The TCE groundwater plume associated with the materials laboratory is the longest off-site plume. In 2004, about 700 cubic yards of TCE-contaminated soil was excavated. The soil was land-spread as an interim corrective action on adjacent municipal property. Residential drinking water wells were also identified and sampled. Recent assessment efforts have focused on vapor intrusion into buildings and structures in the area.

FY 2010 work included continuing the long-term groundwater monitor program and further sampling to understand the vapor intrusion pathway at the site.

DOT&PF PROSPECT AIRPORT LEASE LOT 1 – COLDFOOT

Contract Amount: $10,579.00
Expended: $10,579.00
Category: Assessment

The site is a lease lot on the Prospect Creek Airport apron, encompassing 27,000 square feet. The land is managed by the Department of Transportation and Public Facilities, although it is owned by the Bureau of Land Management. A Phase I Site Assessment and Limited Phase II Site Assessment were conducted in 1999. Poor fuel management practices have led to petroleum impacts on this lease lot, hindering leasing and reuse of the site.

FY 2010 work focused on summarizing historic releases and identifying responsible parties.

DOT&PF WILLOW MAINTENANCE STATION – WILLOW

Contract Amount: $70,073.84
Expended: $33,835.13
Category: Assessment

In 1993, a 1,000-gallon heating oil tank was removed from the site and diesel-contaminated soil was discovered. In 1997, two 3,000-gallon underground storage tanks (USTs) and associated dispensers were removed from the northeast portion of the site. The material excavated during the removal was used to backfill the excavation. A fire destroyed the former maintenance station in the early 2000s.

A site characterization was conducted in 2007. Twenty-one test pits were dug and eight soil borings were advanced and completed as groundwater monitor wells. Soil and groundwater samples indicated that both media in four areas were impacted above DEC cleanup criteria. In 2009, contaminated soil was excavated from all known contaminated areas. Soil stockpiles were generated for each contaminated area and were designated as potentially clean, petroleum-contaminated, or chlorinated solvent- and petroleum-contaminated based on field screening results. The stockpiles were placed on a concrete pad that was bermed with clean soil.

Confirmation soil sample results from the base of each four excavation pits confirmed that no contaminated soil remained in all four contaminated areas with the exception of the former dry well location. All excavation pits, were brought up to grade with clean soil.

FY 2010 work included evaluating groundwater, determining disposal options for an existing stockpile contaminated with chlorinated compounds, and land-farming the petroleum contaminated soil.

Additional State-Owned Sites Funded in FY 2010 – Total amount expended = $456,605.79:

ALASKA COURT SYSTEM DIMOND COURTHOUSE UNDERGROUND STORAGE TANK – JUNEAU

Contract Amount: $3,114.00
Expended: $0
Category: Monitoring

For a number of years, water and petroleum have periodically filtered through an opening in the building foundation wall of the Community Building adjacent to and downgradient of the Dimond Courthouse in Juneau. A special drain system fabricated to collect the fuel and water seepage had fallen out of service in recent years allowing fuel odors to permeate in the basement. Reactivating the system has now successfully limited the seepage to water only.

A Community Building underground storage tank (UST) adjacent to this release was decommissioned in-place about 12 years ago. When an adjacent structure, the Davis Log Cabin, was demolished, the UST was replaced by a 7,500-gallon above-ground storage tank (AST). Site Investigation monitoring wells were placed at the 10,000-gallon heating oil UST and near the supply and return lines entering the basement of

the Dimond Courthouse. After 18 inches of free product was discovered in the well, dye was added to the UST to determine that was the source of the fuel.

The UST was closed by removal. Seventy cubic yards of contaminated material was identified and transported off-site and remediated. The UST piping was closed in place due to the presence of vital utilities that limited excavation. Data indicate that the UST release from the Courthouse property is likely not the source of fuel seepage into the basement of the adjacent Community Building. Over a period of four years, the free-phase hydrocarbons in monitoring wells have been reduced by attenuation from 1.5 to 0.02 feet.

FY 2010 work included a groundwater sampling event. Field work was completed in FY 2010; no invoices were received by the end of the fiscal year.

DEED ANVIK FORMER SCHOOL SITE – ANVIK

Contract Amount: $33,909.24
Expended: $33,909.24
Category: Assessment

This tank farm is located approximately 200 feet southeast of the Anvik School, near the airstrip. The tank farm consists of three riveted steel-rail tank cars with the wheels removed situated within a plastic lined dike (the total capacity is 21,126 gallons). The inside of the dike was covered with 2 to 6 inches of ice at the time of the visit. The tanks appeared to be empty. Evidence of overfilling was apparent on the three tanks. A strong diesel odor was noted near the rear of the middle tank car. According to locals, approximately 3,000 gallons of fuel were spilled at this tank farm when a valve was inadvertently left open. It is not clear whether the spill was contained inside the dike. A soil sample collected from outside the dike near a cam lock fitting contained diesel-range organics and gasoline-range organics.

In FY 2010, test pits were excavated to delineate the nature and extent of contamination, a limited groundwater evaluation was conducted, and drinking water samples were collected from potentially impacted potable wells near the site.

DEED BEAVER SCHOOL TANK FARM – BEAVER

Contract Amount: $22,776.00
Expended: $21,791.40
Category: Assessment

Diesel contamination identified at seven sites in a 2001 tank farm reconnaissance, most widespread at Cruikshank School tank farm and old school generator building, with high diesel-range organics contamination levels at the surface and below ground. About 5,600 square feet of surface contamination was documented and the volume was estimated at 1,640 cubic yards. Another 400 square feet of surface contamination was identified along the washateria pipeline and the contamination is estimated to extend below ground surface, for a volume of 110 cubic yards. The Village of Beaver is located in Yukon Flats National Wildlife Refuge. The Beaver Tribe applied to DEC for a brownfield assessment in 2009.

FY 2010 work included completing a Property Assessment and Cleanup Plan. Results from the plan indicated that the extent of diesel soil contamination has increased since a 2001 report. There are approximately 2,000 cubic yards of contaminated soil remaining in place. Further recommendations include investigating the potential impacts to the community drinking water wells, which are located approximately 425 feet south of the old Bureau of Indian Affairs' school building.

DEED FORMER KONGIGANAK SCHOOL TANK FARM – KONGIGANAK

Contract Amount: $38,356.06
Expended: $13,660.13
Category: Assessment

Several above-ground storage tanks were removed in 2003 as part of a tank demolition project. Investigations were conducted based on observations of inadequately lined containment areas and surface staining on the soil in the surrounding area. A site inspection was conducted in FY 2009 as part of the Site Characterization and Assessment. Soil samples were taken from numerous test pits around the property. The diesel-range organics, benzene and toluene found in three of the 10 test pits were below the health-based ingestion and inhalation levels. The groundwater is not used as a drinking water source for the community.

FY 2010 work included review and updates to the FY 2009 field assessment report, and a determination made that there is no unacceptable risk to human health or the environment. The site was granted a cleanup complete determination with institutional controls during the fiscal year.

DEED MANOKOTAK SCHOOL – MANOKOTAK

Contract Amount: $34,755.00
Expended: $749.53
Category: Assessment

The Manokotak School site reportedly had numerous fuel spills, including at the adjacent tank farm. The CSP conducted limited site assessment in 1998 that identified the tank farm as a source of contamination. Results did not find any soil concentrations above cleanup levels. Additional areas of contamination may exist at the facility. The Manokotak community requested a brownfield assessment in 2009 to help facilitate the reuse of the old school site as a multi-purpose facility.

FY 2010 work included the completion of a Property Assessment and Cleanup Plan, coupled with further site assessment to characterize the extent of remaining contamination.

DEED NEW STUYAHOK OLD BIA SCHOOL – NEW STUYAHOK

Contract Amount: $34,984.28
Expended: $1,046.32
Category: Assessment

The Southwest Region School District applied to DEC's Reuse and Redevelopment Program in 2009 for a DEC brownfield assessment of the former Bureau of Indian Affairs School in New Stuyahok. Over the years, numerous small spills at many of the day tanks have occurred. Leaking fill lines were abandoned in place and new lines were installed. In 2003, a release of approximately 150 gallons was documented on the northeast side of the former elementary school. The spill was cleaned up; however, contaminated soil still remained at the site under the building.

After the demolition of the buildings in 2009, a limited Phase II Environmental Site Assessment was conducted. Seven test pits were excavated at each of the reported spill locations including the area downgradient of the former tank farm location. Groundwater was not encountered in any of the test pits during excavation. Soil samples were collected and field-screened from both the test pits and the existing stockpile and landspread area.

Conclusions indicate diesel-range organics, gasoline-range organics and benzene levels are above DEC cleanup levels. Soil samples collected from the existing stockpile and land-spread area have levels of diesel-range organics above DEC cleanup levels. The subsurface soils associated with the fuel oil lines were not assessed and require further assessment.

FY 2010 work included completing a Property Assessment and Cleanup Plan to sufficiently identify environmental hindrances that could limit the future beneficial reuse of the site. Work included limited field sampling and the development of an approach to managing the environmental conditions.

DEED NEWTOK OLD BIA SCHOOL – NEWTOK

Contract Amount: $14,712.00
Expended: $13,110.70
Category: Assessment

A brownfield assessment application was submitted to DEC in 2009 specific to the old Bureau of Indian Affairs school in Newtok. The former school consists of school buildings, a water well and a former tank farm. There is concern about the potential erosion of the site by the river, leading to potential contamination of Newtok's surface water.

FY 2010 work included the completion of a Property Assessment and Cleanup Plan to provide an approach to managing the environmental conditions.

DEED TULUKSAK OLD BIA SCHOOL – TULUKSAK

Contract Amount: $33,242.00
Expended: $6,288.38
Category: Assessment

This site was submitted for a DEC brownfield assessment in 2009 for the old Bureau of Indian Affairs school originally built in the early 1930s that burned down. An old BIA power plant – a building with petroleum and other hazardous substances as potential contaminants remains on the site. The site and building are located near a rapidly eroding river bank. The community is concerned about the future exposure of hazardous materials to the river.

FY 2010 work included a Property Assessment and Cleanup Plan and limited analytical sampling of the property sufficient to identify potential environmental hindrances that are a risk of eroding into the river and limit the future beneficial reuse of the site.

DNR ASPHALT DRUMS MILE 278 RICHARDSON HIGHWAY – DELTA JUNCTION

Contract Amount: $17,831.12
Expended: $0
Category: Assessment

In 1990, CSP staff investigated a public complaint regarding abandoned drums with unknown contents leaking on the ground. The site is located several hundred feet northwest of the Haines Pipeline Timber Pump Station at Mile 278 of the Richardson Highway. Sixteen corroded drums were found and determined to contain liquid asphalt. No action was taken after the initial site visit. A 1998 site visit identified 22 drums of asphalt product. Drums were further deteriorated with bullet holes and corrosion. The drums are located on state land managed by the Department of Natural Resources. The drums were removed in FY 2009 and soil characterization was completed, but approximately 250 gallons of asphalt remain on-site.

Upcoming work includes assessment, cleanup and disposal of the remaining asphalt product. Field work was started in FY 2010; however, invoices were not received by the end of the fiscal year.

DNR DELTA JUNCTION TRESSPASS SHOOTING RANGE – DELTA JUNCTION

Contract Amount: $41,546.00
Expended: $6,411.93
Category: Assessment

The Delta Junction Trespass Shooting Range was started in trespass in the early 1990s and is located on a jointly owned section line easement – owned by the City of Delta and the Department of Natural Resources – north of the Delta Junction Airport and between the Richardson Highway and Delta River. The attraction to the site is a large earthen berm that was placed there to reduce access along the river. Sites of this nature are typically contaminated with lead and other metals that require special handling and disposal. The project highlights the issue of the cost of remediating shooting ranges and is only one of many similar sites on state lands.

FY 2010 work included a site visit and historical evaluation of the use of the Delta Junction site, as well as additional work focusing on an analysis of regulatory and soil management opportunities for similar sites, including the shooting range located on Department of Transportation and Public Facilities property at the Fairbanks International Airport. The information from the final assessment will help the state make management decisions as to how to cost-effectively handle and dispose of lead contamination from shooting range sites on state lands.

DNR FAIRBANKS DIVISION OF FORESTRY HEATING OIL TANKS – FAIRBANKS

Contract Amount: $28,207.90
Expended: $19,614.94
Category: Assessment

A 500-gallon underground heating oil tank was removed from the north side of the Department of Natural Resources dispatch building in 2004. Soil samples collected at the edge of the excavation contained gasoline-range organics, diesel-range organics, ethylbenzene, total xylenes, naphthalene and other polycyclic aromatic hydrocarbons above cleanup levels. Excavation was limited by the building foundation and concrete footer beneath the dispatch building. The site is approximately 75 feet from the Chena River.

FY 2010 work included conducting additional characterization of groundwater and the potential for vapor intrusion.

DNR GOOSE BAY STATE GAME REFUGE CREEK DUMP – GOOSE BAY

Contract Amount: $23,016.00
Expended: $16,784.74
Category: Assessment

This property is an area of an illegal shooting and dumping site in Goose Bay. The site is littered with empty buckets, batteries, burned cars, burned washing machines, 5-gallon paint buckets, 55-gallon drums, miscellaneous debris in the slough and an old underground storage tank. All the items have been shot up. The surface stain site, from the four drums characterized in 2006, was located. To the left of this area, another stain was located, which appears to be from a burned car next to it. A sweet odor was noted from the area.

FY 2010 work included completing a Property Assessment and Cleanup Plan. Multiple environmental concerns were identified, including physical hazards associated with exposed debris from eroding landfill; potential polychlorinated biphenyl contamination of adjacent surface water and sediments; illegally dumped debris, including potential contamination associated with vehicles, drums, paint cans and construction debris; eroding landfill potentially exposing asbestos-containing material; lead in berms near concentrated shooting areas; and petroleum-contaminated soil (stained soils areas) associated with abandoned vehicles and equipment.

DNR OLD BIA COPPER CENTER SCHOOL – COPPER CENTER

Contract Amount: $30,218.78
Expended: $26,561.36
Category: Assessment

This site was identified through the DEC brownfield assessment requests from the Department of Natural Resources. The old Bureau of Indian Affairs Copper Center school had become an abandoned building suffering from severe vandalism. During the era when the school was built, it was common practice to use asbestos in floor tiles and pipe installation. Despite attempts to secure the building, local youth break in and use the property to hang out. As more of the building is vandalized, more asbestos is disturbed and

enters into the atmosphere. Lead paint could also be a potential contaminant at the school. In addition, the location of the former fuel tanks for the school has not been identified. Contamination could be present from spills and releases from the former fuel tanks.

FY 2010 work included a Phase I and a Limited Phase II Environmental Site Assessment. During the site investigation, several potential source areas of contamination were identified, including former heating oil tanks and underground pipelines. Limited soil sampling was conducted; none of the soil samples results exceeded health-based cleanup levels. Follow-up work may include decommissioning the pipelines and a subsequent sampling event.

DOT&PF ALLAKAKET AIRPORT FUELING FACILITY – ALLAKAKET

Contract Amount: $14,263.00
Expended: $12,161.54
Category: Assessment

This site is part of the new airport fuel facility. The Reuse and Redevelopment Program worked with the Department of Transportation and Public Facilities to ascertain the presence and extent of contamination. A brownfield assessment of the above-ground storage tank fueling array at the new airport was conducted in FY 2009. During the site visit, an approximately 28-square-foot stain on the gravel pad adjacent to the fenced tank array was observed. Samples were collected and submitted for analysis based on field-screening results.

FY 2010 work included a review and updates to the FY 2009 field assessment report for a closure determination.

DOT&PF CHALKYITSIK AIRPORT SNOW REMOVAL EQUIPMENT BUILDING AND APRON ABOVE-GROUND STORAGE TANKS – CHALKYITSIK

Contract Amount: $22,000.00
Expended: $0
Category: Assessment

During a site inspection in 2002, stained soil was evident at a gasoline tank and two diesel tanks located at the airport apron. Soil samples collected contained petroleum contamination above inhalation, ingestion and migration-to-groundwater cleanup levels. In 2009, petroleum-stained soil was encountered inside the Department of Transportation and Public Facilities' snow removal equipment building. It is assumed that vehicle storage and maintenance activities in the building resulted in historic spills and leaks impacting the dirt floor.

Upcoming work will involve the delineation of the nature and extent of contamination. A total of 795 cubic yards of contaminated soil will be removed and land-farmed. This contaminated soil was generated from contaminated soil encountered during this mobilization effort. Confirmation soil samples, groundwater samples, surface water samples and drinking water well samples (if applicable) will be collected. The excavations will be brought back to grade with clean fill. Contaminated soil will be transported to a land-

farm area located near the airport apron adjacent to the sites. The landfarm will be tilled twice a week for eight weeks using local hire. Performance samples will be collected in the summer of 2011.

Field work was not completed in FY 2010 because of a lack of access to a fill source.

DOT&PF DPS KETCHIKAN SHOP – KETCHIKAN

Contract Amount: $3,114.00
Expended: $0
Category: Monitoring

Five underground storage tank (UST) closures have taken place at this facility. Two tanks were closed in-place under the drive-through awning; a 1993 closure assessment showed no release. Two more USTs, one gas and one diesel, were closed by removal in 1999. The piping that ran from the dispenser awning to those USTs was later found closed in-place. Release from the two USTs impacted soil from the surface to the water table at 8 feet below ground surface. A 40-cubic-yard volume of contaminated soil was transported to and treated at a Juneau remediation facility. A 1,100-gallon heating oil UST between the awning and the Department of Public Safety office door was also closed by removal in 1999. An oil sheen was observed on excavation water and the excavation wall (the north side) where utility structures prevented additional removal. Contaminated soil from the home oil tank (HOT) UST was stored on-site between liners.

The 2007 site work involved assessment sampling of the soil stockpile from the HOT UST and installing groundwater monitoring wells between the stream, the UST piping run, and the closed-in-place USTs beneath the awning. Three wells were installed approximately 10 feet north of the stream flowing near the southern property of the facility. The stream elevation was measured to be approximately 2 feet lower than the groundwater elevation at a nearby monitoring well. Report data dated January 2008 showed that soil samples from the stockpile were non-detect for diesel-range organics (DRO). Water samples analyzed for benzene, toluene, ethylbenzene and xylenes, gasoline-range organics, DRO and residual range organics were all below screening levels.

Field work was started in FY 2010; no invoices were received by the end of the fiscal year. Upcoming work will include additional groundwater sampling to monitor declining hydrocarbon contamination to ensure that off-site migration pathways are protected. Then the site can possibly be closed.

The objective of periodically monitoring the groundwater for contamination is to establish a trend over time to determine if residual petroleum contamination is expanding, stable or in decline. If the data indicate an expansion of contamination, then an additional assessment and/or cleanup action will be performed to ensure the site does not pose an unacceptable risk to human health or the environment.

DOT&PF GLENNALLEN HIGHWAY FORMER MAINTENANCE CAMP – GLENNALLEN

Contract Amount: $26,221.35
Expended: $26,221.35
Category: Assessment

The former Department of Transportation and Public Facilities (DOT&PF) maintenance facility had known buried and above-ground storage tanks located across the properties, and drummed chemical storage was

suspected. In 2008, a removal of a buried tank on the northern property was conducted and petroleum releases to the soil and groundwater were identified. The Department of Natural Resources requested a DEC brownfield assessment to quantify all environmental issues across the properties.

FY 2010 work included an environmental investigation of DOT&PF's old Glenn Highway maintenance station and the Department of Fish and Game's Glennallen facility to identify any potential environmental hindrances that could limit the beneficial reuse of the sites.

DOT&PF HAINES MAINTENANCE STATION LEAKING UNDERGROUND STORAGE TANK – HAINES

Contract Amount: $4,168.82
Expended: $0
Category: Monitoring

Two 2,000-gallon regulated underground storage tanks (USTs) and associated piping were closed by removal in 1999. Petroleum-contaminated soil was found in surface soil extending to 4 feet below ground surface, where groundwater was encountered at its seasonal high. Soil contamination extended to 6 feet below ground surface. Fifty cubic yards of oily sand and gravel were put into containers and shipped off-site for remediation. Laboratory data for the containerized soil had concentrations of diesel-range organics (DRO) and gasoline-range organics (GRO). Three of four pit confirmation samples were below DRO and GRO cleanup levels; the fourth sample in the south corner of the pit detected DRO and GRO. The pit was lined before backfilling and it was estimated that an additional 20 cubic yards of contaminated material remained on-site.

In 2007, further cleanup work included closing a nearby heating oil UST and installing groundwater monitoring wells to assess petroleum contamination from the previously removed regulated USTs. Although visual and olfactory evidence of diesel fuel was observed in soil borings, the analytical data on water samples collected from the wells detected petroleum concentrations below cleanup criteria.

Field work was started in FY 2010; no invoices were received by the end of the fiscal year. Upcoming work will include groundwater sampling to verify samples that were collected in 2007 and possibly closing the site.

DOT&PF JUNEAU EQUIPMENT YARD – JUNEAU

Contract Amount: $10,380.00
Expended: $0
Category: Monitoring

The Department of Transportation and Public Facilities has offices and an equipment maintenance yard serving Juneau and Southeast Alaska. The offices extend from the Glacier Highway entrance; the repair shops are at the back of the property. The east and west sides of the property are used as equipment and material stockyards. Environmental investigations at the facility include a landfill, an oil spill at a truck rack and multiple dispensers and/or leaking underground oil tanks, both regulated and unregulated.

Sources with complete exposure pathways and potential current or future risk: contaminated soil left in place after closure by removal of the tanks in 2000 and five regulated underground storage tanks (USTs)

located in several locations adjacent to the office buildings. A series of soil borings in 2003 investigated residual soil contamination and a network of water wells was installed to investigate groundwater contamination. The 2003 data found elevated concentrations of gasoline- and diesel- range hydrocarbons and benzene, toluene, ethylbenzene and xylenes in both soil and groundwater samples.

Strings of socks containing Oxygen Release Compound (ORC) were inserted into select monitoring wells to promote the bacterial breakdown of groundwater hydrocarbon contamination. In 2007 and 2008, samples were collected from the accessible monitoring wells and the results indicate that benzene, and gasoline- and diesel- range hydrocarbon concentrations in the groundwater between the source area and occupied buildings are declining. ORC socks were again added to select monitoring wells.

The vapor intrusion pathway at an office building downgradient of the UST release source area was assessed in 2007 and 2008. Results do not indicate a risk of exposure for the building that was tested. The purpose of ongoing collection of well samples is to monitor residual subsurface hydrocarbon contamination and to add ORC treatment to ensure that concentrations in groundwater are continuing to decline and exposure pathways are controlled. If the data indicate an expansion of contamination, then an additional vapor intrusion pathway assessment and/or cleanup action will be performed to ensure the site does not pose an unacceptable risk to human health or the environment.

FY 2010 work included groundwater sampling to monitor declining hydrocarbon contamination to ensure that off-site migration pathways are protected. Field work was completed in FY 2010; no invoices were received by the end of the fiscal year.

DOT&PF KING SALMON MAINTENANCE BUILDING 301 – KING SALMON

Contract Amount: $8,560.17
Expended: $8,560.17
Category: Assessment

In 1995, two areas were evaluated: soil and groundwater at Building 301; and Building 301's floor drain discharge. A visual inspection of dye indicated the floor drain discharge was 150 feet northwest of the building. No soil or groundwater samples were collected from the drainage area. In the building area, a test pit and three soil borings completed as temporary monitoring wells were advanced. Only one soil sample out of the four samples that were collected from the test pit and three borings contained petroleum contamination above migration-to-groundwater cleanup levels. Three groundwater samples collected from the three temporary monitoring wells contained detectable levels of petroleum concentrations, but below DEC cleanup levels.

FY 2010 work involved further evaluation of the floor drain. The floor drain appeared to have been sealed or filled with sediment. It was speculated that the floor drain outfall is or was likely connected to other floor drains in buildings at the site. Three soil samples were analyzed – one near the surface, a second from 3.5 feet below ground surface at the outfall, and a third from near the surface approximately 5 feet away. Both surface samples contained petroleum contamination above migration-to-groundwater cleanup levels.

DOT&PF KNIK RIVER REST STOP – PALMER

Contract Amount: $109,178.94
Expended: $2,700.27
Category: Assessment

This site was originally owned by the Bureau of Land Management. Under authorization to the Department of Transportation and Public Facilities, the Department of Natural Resources worked with BLM to clean up the site, which was historically used as an informal shooting range and dump site. As a result of BLM's cleanup effort, the site received a Cleanup Complete with Institutional Controls (ICs) closure determination in 2004.

However, the CSP recommended that additional ICs be established after the parcel transfer to state ownership because more specifics about land-use development would be known after the State of Alaska assumed control. As a result of BLM's cleanup effort, the majority of lead contamination has been removed. There are, however, data gaps throughout the site. Lead contamination in the lake sediment exceeds ecological screening levels, and sampling results indicate that several surface areas still exceed lead cleanup levels.

FY 2010 work delineated the extent of lead contamination in the soil at the former shooting areas. Additional work in FY 2011 will be to conduct limited source removal and/or implement remedial alternatives such as capping to control exposure to lead contamination.

DOT&PF LIVENGOOD MAINTENANCE STATION LEAKING UNDERGROUND STORAGE TANK – LIVENGOOD

Contract Amount: $17,595.53
Expended: $15,375.98
Category: Monitoring

Four underground storage tanks (USTs) were removed in 1998 and 1999, including a 2,000-gallon diesel tank, a 3,000-gallon diesel tank and three 500-gallon used oil tanks. A release investigation in 2002 identified diesel-range organics and metals in the soil and in a perched groundwater aquifer. The maintenance station is built on a gravel pad constructed of mine tailings, and the metals may be at background levels for the area. The drinking water is supplied by an off-site well that is reportedly completed to a depth of 320 feet in the bedrock aquifer about a half-mile upgradient from the site. A new on-site well may exist, but the location and use are unknown.

FY 2010 work included continued monitoring of the groundwater and on-site drinking water as dictated by the long-term monitoring plan. An additional investigation of the soil will be completed during the Department of Transportation and Public Facilities' replacement of the aboveground storage tanks.

DOT&PF MANLEY HOT SPRINGS FORMER GRAVEL PIT – MANLEY HOT SPRINGS

Contract Amount: $29,747.99
Expended: $27,434.18
Category: Cleanup

In 1989, three orphan drums found near the Manley gravel pit and the immediately surrounding soil were sampled for pesticides and dioxins. The primary contaminant of concern that was found was 2,3,7,8-tetrachlorodibenzo-p-dioxin. A 1990 interim remedial action excavated approximately a 6-inch layer of impacted soil. Clean fill was placed in the excavated area, and the contaminated soils and product drums were shipped to a Kansas hazardous waste treatment facility.

Between 1993 and 2009, the site was sampled in multiple phases and soil contamination still exceeded cleanup levels. In 1993, a geo-membrane cap and temporary fence were installed over the highest concentrations, but they did not encompass the entire contaminated area and there were not secure.

FY 2010 work included installation of a cap over the remaining soil contamination with security fencing and signage.

DOT&PF NIKISKI AIRSTRIP – NIKISKI

Contract Amount: $11,462.27
Expended: $3,437.54
Category: Monitoring

In 1988, reports were received regarding unknown wastes and garbage being disposed of in pits adjacent to an abandoned airstrip near Nikiski. Petroleum hydrocarbons exceeding cleanup levels were detected in soils and groundwater during a site assessment. A preliminary investigation revealed the location of two disposal pits off the west side of the airstrip. A background investigation revealed that the site was used to dispose of petroleum products, primarily Bunker C and diesel product.

The initial cleanup was done in 1981 and 1985. There was no clear documentation that the cleanup was adequate, although the cleanup was signed off in 1986. Additional assessment work performed in the late 1980s and early 1990s confirmed the site was extensively contaminated from the near-surface down to approximately 90 feet, where substantial petroleum product was detected and measured in the groundwater in monitoring wells. Additional groundwater monitoring wells were installed during FY 2009. A full well survey was also completed to verify questionable surveys conducted in the past.

FY 2010 work included the inspection and repair of damaged monitoring wells, and the conversion of one monitoring well to a ground surface completion because its location conflicted with the expansion of a parking lot. Maintenance and repair work were completed on the existing monitoring wells, and a final report was received documenting the accomplishment of the work.

DOT&PF NORTHWAY AIRPORT LEASE LOTS 5A, 6A, 10A, 11A – NORTHWAY

Contract Amount: $17,503.00
Expended: $80,733.00
Category: Assessment

Historical fuel-contaminated soil and groundwater were identified at the airport during a previous site investigation in 2009. Temporary well points and soil borings were installed across the airport area, indicating the presence of petroleum impacts across a shallow aquifer.

FY 2010 work included expanding the site assessment activities, including the completion of a building survey, the collection of indoor-air samples, and an expanded water well survey. Field work was also started in FY 2010, but no invoices were received by the end of the fiscal year.

DOT&PF OLD QUINHAGAK AIRPORT – OLD QUINHAGAK

Contract Amount: $18,571.00
Expended: $15,882.06
Category: Assessment

In 1973, the Department of Transportation and Public Facilities (DOT&PF) leased the property from the Bureau of Land Management. In 1980, the BLM transferred the property to the Qanirtuuq Native Corporation. The Quinhagak Airport was relocated due to the Kanektok River eroding the runway. The property has been slated for transfer from DOT&PF back to the corporation for redevelopment. In 2005 and 2006, Phase I and II Environmental Site Assessments confirmed the presence of petroleum contamination in soil and groundwater at the former Quinhagak Airport. Heavy equipment, above-ground storage tanks, drums, and the fueling of vehicles, aircrafts and boats were potential sources of the contamination.

The site was referred to DEC's Reuse and Redevelopment Program in 2009 to evaluate cleanup alternatives and estimated costs.

FY 2010 work involved the development of a corrective action plan to recommend cleanup actions and general cost estimates, so the land could be reused and transferred back to the Qanirtuuq Native Corporation.

DOT&PF PORT HEIDEN AIRPORT (FROSTY FUEL) – PORT HEIDEN

Contract Amount: $39,882.00
Expended: $39,881.96
Category: Assessment

The Port Heiden Airport was built during World War II and is currently state-owned. The airport consists of a lighted gravel runway and crosswind runway. The site in question was originally a repair facility and hangar for fighter and bomber aircraft used in the Aleutian Campaign. The original hangar was removed in the 1970s; a mail storage and maintenance garage was built on the site that included a power generation plant for the runway lights and flight aid installations.

The warehouse was removed in 2007 and the cement pad that was originally built during WWII is all that remains. The area to the southwest and adjacent to the former warehouse site was used for underground fuel storage for operations. During the removal of the underground and above- ground storage tanks in 1992, petroleum contamination was identified in the soils and the shallow groundwater aquifer.

The CSP managed the site; a Conditional Closure Decision Letter was issued in 2008. The airport is a Formerly Used Defense site. It is likely that spills and leakage from the 24,000 drums around the site and the use of the hangar by other agencies and individuals since WWII could have left contaminants that are not documented.

The presumed contamination area is on the northwest corner of the airport apron in and around the old hangar cement pad and the area designated as Frosty Fuels' former tank farm. There are barrels of unknown substances and debris on the old hangar pad. There are no existing buildings on the site. The tanks, pump house and warehouse were removed in 2007.

In 2009, the Department of Transportation and Public Facilities proposed further cleanup of site, and discussed the issue of the abandoned drums reported to be on the lease site. A request for a brownfield assessment to investigate drums was also received.

FY 2010 work included completing a Property Assessment and Cleanup Plan.

DOT&PF UNALAKLEET SNOW REMOVAL EQUIPMENT BUILDING – UNALAKLEET

Contract Amount: $64,328.00
Expended: $46,069.04
Category: Assessment

The Federal Aviation Administration removed a heating oil tank in 1997. The site was closed, but diesel-range organic contamination was found upgradient of the old tank location, in increasing concentrations. The upgradient well contained up to 0.55 feet of free product. Clean native soil was found downgradient of the site. That indicates that the contamination was not be caused by the FAA tank.

Additional assessment work was completed in FY 2009, including the evaluation of a historic underground pipeline and the determination of the source of free-phase petroleum hydrocarbons and groundwater contamination at the site. Analysis indicates the hydrocarbon contamination begins at or slightly above the groundwater interface. Samples collected at the pipeline contained little or no petroleum, therefore the pipeline was determined to not be a contamination source. The Groundwater flows to the north, north easterly direction depending on the tides.

FY 2009 work at the site included the evaluation of a historic underground pipeline to determine the source of the free-phase petroleum hydrocarbons and groundwater contamination at the site. FY 2010 work included processing the samples and finalizing the report documentation for the FY 2009 field work.

DOT&PF TUDOR ROAD MAINTENANCE – ANCHORAGE

Contract Amount: $20,987.00
Expended: $2,253.65
Category: Cleanup

A site inspection revealed evidence of petroleum and heavy oil spills adjacent to the storm drain settling pond at the Department of Transportation and Public Facilities' maintenance station. The pond possibly contains paints and chlorinated solvents. The extent of contamination, the amount and impact to human health is unknown. An unknown amount – but estimated at five barrels or drums – of paint and thinners were buried in the southeast quadrant of the maintenance yard between 1977 and1979. During a facility fire at Building 4801, solvents, lubricants and pressure cans of various materials were released.

Between 1998 and 2001, monitoring wells were installed and periodically sampled. A product recovery system was installed in 1998. Sixty drums were recovered during an investigation in 2000, and additional monitoring wells were installed.

FY 2010 work included the excavation of contaminated soil, the removal of free product from the groundwater surface, and the addition of Regenox and Oxygen Release Compound to the backfilled soil to enhance contaminant degradation at the light-duty maintenance shop.

JUNEAU COMMUNITY BUILDING – JUNEAU

Contract Amount: $2,076.00
Expended: $0
Category: Monitoring

In 2002, the CSP investigated the appearance of petroleum through openings in the north side basement wall of the Juneau Community Building. A monitoring well was placed in the alley between the Community Building and the adjacent Dimond Courthouse. After observing 18 inches of petroleum product in the well, the boiler supply piping from a 10,000-gallon heating-oil underground storage tank (UST) on the adjacent Dimond Courthouse property was targeted as a possible source of the petroleum release.

Protection of vital utilities forced the UST piping to be closed in place and the UST was closed by removal. In 2006, a thin layer of oil product was measured in the monitoring well, resulting in no sample collected. In 2007, during foundation waterproofing on the south side basement wall of the Community Building, an abandoned fuel tank and petroleum-contaminated soil and water were encountered.

The CSP approved a cleanup plan to screen and remove accessible contaminated material along the foundation in front of the building. CSP staff requested that additional monitoring wells be installed at each end of the excavation in front of the building after the tank and contaminated soil were removed.

FY 2010 work included groundwater sampling. Field work was completed in FY 2010; no invoices were received by the end of the fiscal year.

UA GOOSE BAY PROPERTIES – GOOSE BAY

Contract Amount: $28,086.00
Expended: $15,966.38
Category: Assessment

In 1957, the Army Corps of Engineers entered into a five-year lease agreement with the University of Alaska for the use the Nike missile launch facility as a military facility. After the lease was up in 1962, the Army Corps of Engineers entered into a 25-year lease agreement with the Department of Natural Resources for the same property. The main concentrations of improvements on UA land were located within a 22-acre fenced area, the Launch Control Center. The Army Corps of Engineers terminated the lease in 1982; all improvements were left in place.

The State of Alaska returned the land to the University of Alaska. The site became contaminated due to the presence of hazardous materials used in building construction, through the use, spillage and storage of

fuels, lubricants and solvents throughout the 25-year operation and by the vandalism of abandoned equipment, such as an electric generator and transformers that may have resulted in hazardous materials entering the environment.

The University of Alaska conducted site assessments in 1991 and 2002 that identified hazardous materials and contamination and pursued cleanups that removed and remediated much of the identified contamination. The remaining contamination is expected to be associated with asbestos; leakage of hazardous substances into building basements and into utilidors; hazardous substances associated with the vandalized generator, acid storage building and transformer enclosures; two underground fuel storage tanks; and fuel, lubricant and solvent spills associated with the vehicle maintenance building.

The site was given a cleanup complete in 2008 for the PCB release. In 2009, the University of Alaska applied for a DEC brownfield assessment for the site.

FY 2010 work included completing a Property Assessment and Cleanup Plan. The report will be used to help prioritize additional action to address environmental concerns.