Environmental Restoration News

U.S. Army Alaska — Fort Wainwright

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Operable Unit Updates

OU1 *Operable Unit (OU) 1 includes the phytoremediation soils and the 801 Drum Burial Site.*

Some of the phytoremediation soils were moved into the new lined cell at the Fort Wainwright landfill in October 2003. A temporary cover was installed over the soils, and a temporary fence was installed around the cell. Monthly inspections of the cover have occurred at this cell throughout the winter to ensure that there are no problems with the cover. Further excavation is planned in the spring to remove the remaining contaminated soils, which will be added to the landfill cell. A permanent cap for this cell is expected to be placed in summer 2004 as well as removal of the temporary fence.

The 801 Drum Burial Site has undergone a Cleanup Operation System Exit Strategy (CLOSES) evaluation (see the article about the CLOSES strategy on page 3 of this newsletter). A draft report on this evaluation has been completed and is currently being reviewed by the Remedial Project Managers with the Army, ADEC, and U.S. Environmental Protection Agency (EPA). The report and its recommendations are scheduled to be finalized in spring 2004.

Groundwater monitoring continues once per year at the 801 Drum Burial Site. The March 2004 groundwater samples were collected as both filtered and unfiltered samples, and analyzed and compared for pesticides, specifically dieldrin. Results from the comprehensive March 2003 sampling indicated there have been no significant changes in contaminant of concern levels from past samples results. Metals were sampled for the first time since 1996 and were detected at higher levels than previously. The data is currently being reviewed for accuracy. Metals will be resampled in March 2005, prior to the second Fort Wainwright Five-Year Review.

Excavation of OU1 treatability study soils.

Alaska Forum on the Environment RAB Roundtable

The Alaska Forum on the Environment was held from February 9 through 13, 2004. The Restoration Advisory Board (RAB) Roundtable meeting was held on February 12, 2004. Since the Fort Wainwright RAB is no longer active, the Fort Wainwright RAB representatives did not participate. However, the Fort Richardson and Haines Fuel Terminal RABs are still active and had both representation from the Community Co-Chairs and the Army Co-Chairs. Dr. Prieksat, the Fort Richardson Army Co-Chair, and Mr. Louis Howard, with the Alaska Department of Environmental Conservation (ADEC), gave a presentation on a chemical demilitarization project that was conducted last summer to treat the chemical agent identification sets recovered from the Poleline Road Disposal Area on Fort Richardson and from Tin City, Alaska.

OU2

OU2 includes the groundwater beneath the DRMO Yard and Building 1168.

In fall 2003, activities at the Defense Reutilization and Marketing Office (DRMO) Yard included groundwater monitoring (site-wide), installation of two new monitoring wells (DRMO-4), decommissioning and replacement of a well (DRMO-1), and collection of soil samples (DRMO-5). The soil samples were analyzed for extractable petroleum hydrocarbons (EPH) and EPH components. The results indicated that the petroleum in soil in this area is considered to be highly weathered and is not expected to migrate. Groundwater results were as expected with the exception of tetrachloroethene (PCE) levels detected in DRMO-4. A soil gas survey is planned for 2004 to further investigate.

Groundwater at Building 1168 continues to be monitored for rebound contamination.

The CLOSES evaluation (see related article on page 3) for both of these sites has been completed. A modified implementation of the recommendations will take place in 2004. The modifications are based on the most recent sampling results.

ACRONYMS

RAB
Restoration Advisory Board

ADEC
Alaska Department of Environmental Conservation

OU
Operable Unit

CLOSES
Cleanup Operation Systems Site Exit Strategy

EPA
U.S. Environmental Protection Agency

DRMO
Defense Reutilization and Marketing Office

PCE
Tetrachloroethene

EPH
Extractable petroleum hydrocarbon

ROLF
Railroad Off-Loading Facility

CRREL
Cold Regions Research and Engineering Laboratory

OU3

OU3 consists of three sites: 1) mileposts 2.7 and 3.0, 2) the Railcar Off-Loading Facility (ROLF), and 3) the Birch Hill Tank Farm.

As reported in the last newsletter (November 2003), the petroleum-contaminated soil associated with mileposts 2.7 and 3.0 was stockpiled and treated using an air sparge system. The majority of the treated soil was taken to the Fort Wainwright landfill to use as fill material. The remaining soil will be removed from Fort Wainwright by a contractor and treated in an off-site soil burner. No other additional work associated with mileposts 2.7 and 3.0 is expected, except regular monitoring.

The Army is conducting contaminant rebound studies at the Eight-Car Header and the Birch Hill Product Recovery System. The treatment system at the Eight-Car Header system has been off since October 2002 to allow for a rebound study to support a CLOSES evaluation of this site. Analysis to date indicates that benzene is still present in groundwater at levels above remedial action goals. The next quarterly sampling event is scheduled for April 2004, and the Army has decided to restart a portion of the treatment system. The system will not be restarted until April 2004 due to severe winter temperatures, which may have caused condensation inside the underground lines to freeze. The rebound study conducted at the Birch Hill Product Recovery System began after the extraction system was shutdown in July 2003. Three rebound sampling events have been conducted since July. The study concluded that contaminant rebound in wells on and at the base of Birch Hill has occurred. The rebound study will continue through April, and further decisions will then be made based on the evaluation of the groundwater data.

Cold Regions Research and Engineering Laboratory (CRREL) continues to collect seismic and geophysical data to support a computer model of the Birch Hill area.

The four multi-level groundwater monitoring wells installed in the Birch Hill area were sampled in January 2004. A new data logger, supplied by CRREL, was installed at the thaw channel well in late January. This new well has the ability to correct for barometric pressure, which is helpful when taking water pressure or head measurements from the wells.

Operable Unit Updates Continued on Page 5

CLOSES – Cleanup Operations and Site Exit Strategy

U.S. Army Alaska Site Managers must make decisions about a variety of remediation activities at sites throughout the state. Decisions are made after the collection of information, which can take a long period of time. For example, many sites must go though a site investigation process, followed by an evaluation of cleanup options and/or strategies, agreements with state and federal agencies, design of a cleanup system, operation and maintenance of a cleanup system, and ultimately closing the site.

All of these cleanup decisions are intended to improve environmental quality and balance environmental risks within a reasonable amount of time and cost. The decisions take into account an understanding of the cleanup process, the cost of a cleanup system, and balancing environmental risk with benefits and costs.

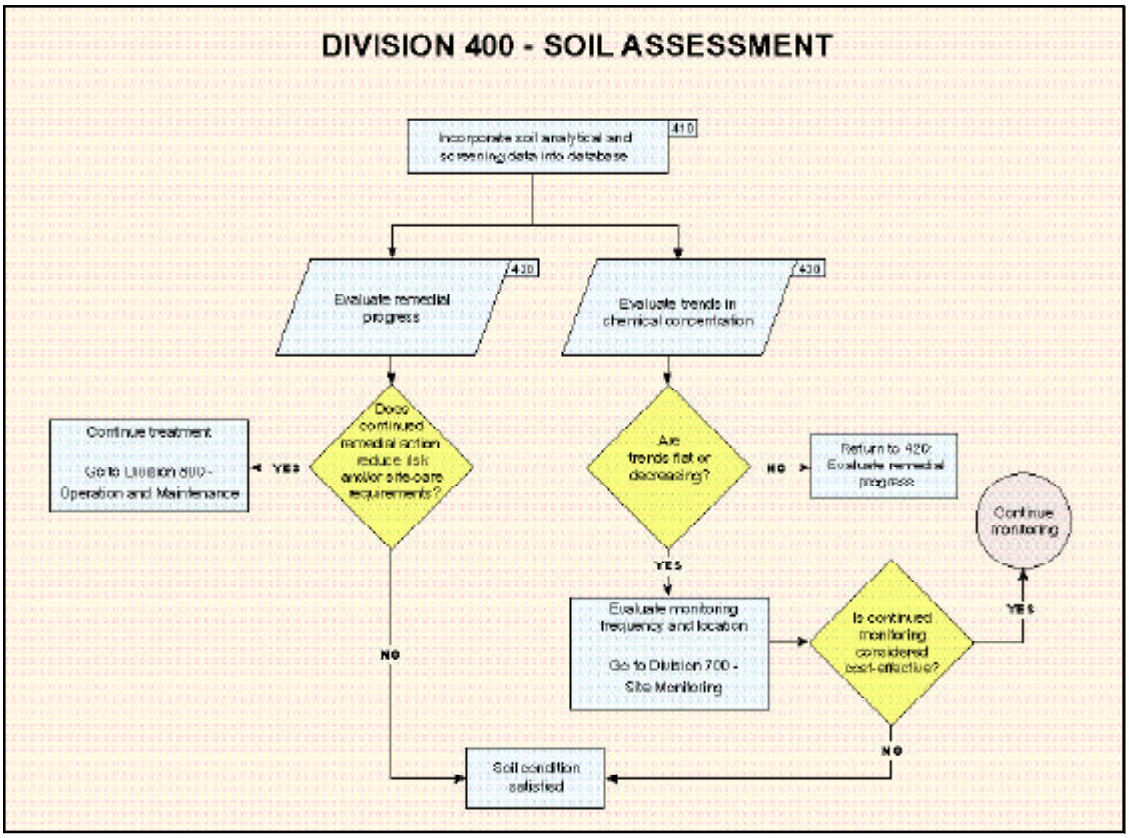
CLOSES, the **Cl**eanup **O**perations and **S**ite **E**xit **S**trategy, is a strategy designed to help U.S. Army Alaska decision makers evaluate all the aspects of a project and evaluate the progress of a cleanup action. The strategy is based on developing a site-specific understanding of the environmental process controlling contaminant migration and reductions in contamination as a result of the cleanup action.

CLOSES is not only a strategy but a way of thinking about a site with respect to its cleanup. The CLOSES process also allows for consistency in approach to different sites by different site managers.

One way to describe the CLOSES process is that it is a series of decision flow charts, like the one shown in the figure below. There are eight areas or divisions that may be evaluated for each site, depending on site-specific conditions: source area assessment, diagnostic tools, non-aqueous phase liquid (NAPL) assessment, soil assessment, vapor assessment, groundwater assessment, site monitoring assessment, and operations and maintenance.

The information that is used is presented in a CLOSES report prepared for each site. The report summarizes results of the evaluations performed for each of the eight divisions and presents supporting data and analysis in attached appendices. The CLOSES report also provides recommendations (if needed) for improving cost-effectiveness of system operations and site monitoring. The reports are reviewed by ADEC and EPA, as appropriate.

The CLOSES process has been used successfully for sites on Fort Wainwright, Fort Richardson, and at the Haines Fuel Terminal. U.S. Army Alaska hopes to make this process more broadly available for use as needed at other Army installations nationwide.



Two-Party Sites

The following sites are being addressed through a formal agreement between the U.S. Army and the State of Alaska because the only contaminant of concern at these sites is petroleum, which is not monitored by EPA. The Army has and continues to work closely with ADEC to address these sites.

Building 1002 and Building 1168

Building 1002 and Building 1168 - The decommissioning of the treatment systems has been completed. Groundwater sampling at Building 1002 has been reduced to sampling one well every other year; Building 1168 has been reduced to sampling two wells every other year. The next sampling event for these sites is summer 2005.

Building 2077

Building 2077 – A specific area of petroleum-contaminated soil was identified at this site and removed in October 2003. Several wells were decommissioned as part of this removal process; however, two usable wells are located near the site. A new well is scheduled to be installed in summer 2004 in an area central to the original source of contamination.

Buildings 2111/2112

Building 2111/2112 – The treatment system for this site was shut down for the winter on October 15, 2003. The annual report on this site includes recommendations for system operation and monitoring.

Building 2250

Building 2250 – CRREL and the U.S. Army Corps of Engineers, Alaska District (USACE) conducted laser-induced fluorescence (LIF) at this site to determine the extent of contamination. Due to technical difficulties and schedule constraints with the LIF probe truck, the limits of contamination were not defined. The Army plans to bring the LIF truck back to Fort Wainwright for more work at Building 2250 in 2004.

Neely Road

Neely Road – CRREL and USACE used the LIF technology at this site to determine the extent of petroleum contamination. Some additional work is required to determine the extent of groundwater contamination at this site. The Army is considering installing two additional monitoring wells to help define the groundwater contamination at the Neely Road site.

Building 3483

Building 3483 – Following the decommissioning of the treatment system in July 2003, the site has been undergoing evaluations for closure. The Army expects ADEC concurrence soon.

OU4

OU4 consists of the former Fort Wainwright landfill and the Coal Storage Yard located behind the Power Plant.

The current groundwater monitoring plan is to sample groundwater at the landfill in the spring and fall. The 2003 monitoring results were reviewed, and it was noted that both groundwater elevations and groundwater concentrations in the 2003 samples were consistent with historical results. The next groundwater monitoring event is scheduled to occur in Spring 2004.

The groundwater monitoring plan for the Coal Storage Yard also consisted of twice yearly sampling. The spring groundwater monitoring data, which included samples collected from 13 monitoring locations and analysis for four different contaminants, indicated that contaminant concentrations are below remedial goals. The fall monitoring results involved sampling 5 wells; analysis for one type of contaminant, volatile organic compounds, indicated that no contaminants were detected at a level greater than the remedial goals. Based on these sample results, ADEC and EPA have concurred with the Army's recommendation to discontinue long-term groundwater monitoring at the Coal Storage Yard, a significant cleanup milestone. The Army will now work to formally document the NFRAP (No Further Remedial Action Planned) status. The Army will decommission the remedial system and monitoring wells at the site. This work is scheduled to occur in spring 2004.

OU5

OU 5 consists of two sites: the Birch Hill Tank Farm site and the Former East and West Quartermaster's Fueling System site.

The air sparge and soil vapor extraction systems in place at the East Quartermaster and West Quartermaster Fueling Systems continue to be successful in removing contamination, especially benzene, from groundwater. The fall 2003 monitoring event did show an increase in diesel range organics (DRO) in a few wells; however, it is believed that the increase in DRO may be related to the redevelopment of the air sparge probes. An article about the air sparge probe redevelopment was in the June 2003 newsletter. The redevelopment was done using a shock treatment method that involved a specialized technology that sends shock waves into the wells to remove silt build up which may have caused obstruction of flow. The increased airflow being injected into the ground as a result of the redevelopment could have stirred things up, releasing small amounts of diesel into the water, thereby temporarily increasing measured DRO levels.

Fall groundwater monitoring data indicated that only one of the four monitoring wells associated with the 1060W site (in the East Quartermaster's Fueling System area) show elevated levels of benzene, although the level is continuing to decrease overall. Groundwater monitoring data collected during spring 2004 will be evaluated and discussed in the July 2004 Federal Facilities Agreement meeting to determine if a change in the operational status of this site is appropriate.

Excavation of OU1 treatability study soils.

ACRONYMS

NFRAP
No Further Remedial Action Planned

DRO
Diesel range organics

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