**STATE OF CALIFORNIA**
**REGIONAL WATER QUALITY CONTROL BOARD**
**CENTRAL COAST REGION**

## STAFF REPORT FOR REGULAR MEETING OF FEBRUARY 9, 2006

Prepared on January 3, 2005

**ITEM NUMBER:** 22

**SUBJECT:** Status Report - Military Facilities Update

## SUMMARY

Staff periodically provides summaries of various Regional Water Board programs. This report provides general information pertaining to the Region's oversight of cleanup at Department of Defense facilities. Overviews and progress reports covering the past six months are included for facilities with active cleanup programs.

Note: As this is a regular status report, new information is provided in italics to differentiate from background and reference information that has been provided previously.

## DISCUSSION

The federal Department of Defense (DoD) is actively performing investigation, cleanup, and closure of numerous active and former military facilities across the State. The Regional Water Boards and Department of Toxic Substances Control provide the majority of cleanup oversight at these federal facilities.

In May 1990, the State signed the DoD/State Memorandum of Agreement (Agreement). The Agreement provides structure for this unique federal to state responsible party/regulatory relationship. It outlines cleanup and investigation protocol, oversight structure, funding, dispute resolution, and calls for a "cooperative" approach. Additionally, the Agreement limits the State's ability to take enforcement action against the military.

**Budget:**
*As of October 31, 2005 (most recent data available), with 33% of the fiscal year complete, program expenditure is 28% of allotment (total annual allotment of $706,166).* Staff expects its Department of Defense oversight program will remain fully funded in the foreseeable future.

**Program Overview:**
Currently, the Region's DoD budget is expended almost entirely on six facilities: Vandenberg Air Force Base, Fort Ord Army Base, Lompoc Federal Penitentiary (a former Army Base), Fort Hunter Liggett Army Base, Camp Roberts National Guard Base, and Monterey Peninsula Airport (a former Naval Air Base).

There are numerous other military facilities in the Region; most are what we call Formerly Used Defense Site (FUDS). The FUDS program, established in 1984, covers all facilities that the federal military vacated prior to the interagency agreement.

### VANDENBERG AIR FORCE BASE

***Lead Staff: Carol Kolb***

**Location/Installation Restoration Program:**
Vandenberg Air Force Base, located on the northern coast of Santa Barbara County, is the third largest U.S. Air Force installation, occupying more than 98,000 acres and 35 miles of coast line. Basewide cleanup is being implemented through the DoD's Installation Restoration Program. Program implementation follows the provisions of a Federal Facility Site Remediation Agreement, entered into by the Air Force, Regional Water Board, and Department of Toxic Substances Control on August 22, 1991.

**Sites/Chemicals of Concern:**
Installation Restoration Program sites at Vandenberg include: closed landfills, space launch complexes, missile silos, fuel and chemical spill areas, and underground storage tank areas. Identified chemicals of concern include: jet fuels, rocket fuels, petroleum hydrocarbons, solvents, polychlorinated biphenyls,

pesticides, perchlorate, metals, and unexploded ordnance.

**Emergent Chemicals/Perchlorate:**
The Basewide Preliminary Assessment/Site Investigation for the six emergent chemicals of concern (perchlorate, n-nitrosodimethylamine, polybrominated diphenyl ether, 1,4-dioxane, 1,2,3-trichloropropane, and total/hexavalent chromium) began in January 2004. The total number of sites to be evaluated is 133, including a total of 58 Installation Restoration Program sites and 75 Areas of Concern. The project is anticipated to be complete by *June 2006.*

**Progress/Success Stories:**
At Site 21 (Fire Training Area), during November 2004 through February 2005, approximately 20,000 cubic yards of petroleum, polychlorinated biphenyls, volatile organic compounds, and dioxin-contaminated soil were excavated for off-site disposal. *Additional soil excavation activities occurred in October through December 2005. Approximately 10,000 cubic yards of contaminated soil were excavated for off-site disposal. Soil and soil gas samples will be collected for risk assessment purposes in early 2006.*

At Site 9 (Space Launch Complex-4 West), operation of the dual–phase (groundwater and soil vapor) Interim Remedial Action system for removal of TCE/perchlorate began in early November 2003. System performance data through *November 2005* indicate that approximately *1.96* million gallons of groundwater was processed from source area wells. *Also, through November 2005, 635* pounds of volatile organic compounds were removed from soil vapor and *12* pounds were removed from groundwater. In addition, *1.95* pounds of perchlorate were removed from groundwater. *In-situ TCE and perchlorate bioremediation testing has lead to impressive results. Within one month of the initial lactate injection, both contaminants were measured below cleanup standards within the tested area.*

The latest Performance Monitoring Report for the Site 20 Underground Storage Tank Source Reduction System shows that, since becoming operational in August 1998, the system has removed an estimated *11,816* pounds of hydrocarbons from the vapor phase and *103* pounds of hydrocarbons from the groundwater phase. *In early 2006, a chemical oxidation treatment system will be installed to expedite hydrocarbon degradation in the subsurface.*

Site 60 (GSA Service Station) monitoring results from the Permeable Reactive Barrier System installed in the Summer of 2002, perpendicular to a methyl tert-butyl ether (MTBE) groundwater plume, continue to show declines in the levels of MTBE contamination. An Oxygen Release Compound System and associated monitoring wells were installed in late August 2003 at the leading edge of the MTBE plume. Long-term monitoring *continues to show a decrease in* MTBE concentration at the plume's core.

In the Basewide Underground Storage Tank and Areas of Concern programs: a total of *765* underground storage tank sites have been closed, and *an additional 100 tank sites may require assessment.* Approximately *160* of the original 166 areas of concern have been closed (since 2003, approximately *50* new areas of concern have been converted from areas of interest to areas of concern). Also, *100* additional areas of interest are proposed for conversion to areas of concern. In these Basewide programs, removal actions have resulted in the excavation/removal and disposal of *approximately 25,000* cubic yards of petroleum, polychlorinated biphenyls, and metals-contaminated soil.

**FORMER FORT ORD ARMY BASE**
***Lead Staff: Grant Himebaugh***

**Location/Base Realignment and Closure Program:**
The former Fort Ord encompasses 28,000 acres between the cities of Seaside and Marina near Monterey Bay. The USEPA declared the Army base a federal superfund site in February 1990. This action was based on groundwater contaminant plumes, which impacted the City of Marina's municipal water supply. The base officially closed in September 1994, and the majority of the site became available for conversion from military to civilian use.

**Sites/Chemicals of Concern:**
Since closure, the Army's base closure team has identified over 40 environmental sites. The primary water quality concerns involve a landfill gas removal system, one carbon tetrachloride groundwater plume with soil gas removal, and three trichloroethene (TCE) groundwater plumes.

**Progress/Success Stories:**
On this federal superfund site, Regional Water Board staff work with USEPA and DTSC to oversee cleanup activities. Several large-scale groundwater plumes are undergoing active remediation efforts. *During the*

*January through July 2005 time period, over 42 pounds of contaminants were removed from the three active remediation systems. Viewed at an annual rate, this is a significant improvement over previous years' performances, and is due largely to enhanced contaminant extraction at the Sites 2/12 system.*

*The carbon tetrachloride plume's Feasibility Study, containing the proposed final remedy, has been reviewed and approved by all regulatory bodies. The Army is proposing to inject lactate to promote in-situ biodegradation. Water Board staff is optimistic for project success, as similar use of lactate injections at Vandenberg Air Force Base have been successful.*

**Challenges:**

*TCE groundwater contaminants associated with Operable Unit 1 (a former fire-fighting training area) were detected at the former northwest installation boundary shared with the Armstrong Ranch. Measured concentrations at the former boundary lead staff to believe the contaminant plume is likely beneath part of the Armstrongs' private property. The community has been informed of this situation through press releases and at several meetings. The Army has tried to move quickly to determine the extent of the contamination and prevent further plume migration; however, difficulties with a fixed-price plus insurance cleanup contract have created numerous delays. As a result, the Army recently announced that a separate contractor will conduct plume characterization beyond the former base boundary. Regional Water Board staff has been fast-tracking review of Operable Unit 1 documents.*

*TCE contaminants from the landfill plume continue to create intermittent appearances in Fort Ord Well No. 29, a public supply well now owned and operated by the Marina Coast Water District. Although all detections have been below one part per billion (ppb) (Maximum Contaminant Level is five ppb), the Army has responded with a treatment system modification.*

## MONTEREY PENINSULA AIRPORT

***Lead Staff: Grant Himebaugh***

**Location/Formerly Used Defense Sites Program:**

Monterey Peninsula Airport is a formerly used defense site comprising 455 acres, approximately three miles southeast from downtown Monterey. Leased by the Department of Navy from the Monterey Peninsula Airport District (Airport District) in 1942, today the Airport serves the local area with commercial and private air service.

**Sites/Chemicals of Concern:**

Known cleanup sites include two former 50,000-gallon concrete underground storage tanks (UST) with an associated petroleum groundwater plume and a trichloroethene (TCE) groundwater plume. A former fire fighting training facility and several other potentially contaminated sites have been ruled out as contaminant sources.

**Progress/Success Stories:**

In May 2003, operational testing of a TCE treatability study groundwater cleanup system began at the Casanova Oak Knoll's Neighborhood Park. Another cleanup system at the Airport's TCE contaminant source area began operation in Fall 2003. Community feedback for both of these facilities has been positive.

In addition, Army Corps of Engineers and Regional Water Board staff have developed an accepted response for the State's Emergent Chemicals requests.

*As the Airport's cleanup systems progress, the Army Corps of Engineers is transitioning into site assessments at four other Formerly Used Defense Sites. These former sites include the Salinas Army Airfield, Hollister Airport, Watsonville Airport and the former Camp McQuaide, now known as the Monterey Bay Academy. The Army Corps' willingness to begin work at four new sites at a time when it's shifting limited project funds out of the State is a direct result of past Region 3 successes.*

**Challenges:**

*Due to operational testing and some equipment and power failures, acceptably consistent and measurable cleanup system performance has not yet been obtained; however, the Army Corps has made significant progress towards correcting these problems, and should have sufficient performance data in 2006.*

## FORT HUNTER LIGGETT

***Lead Staff: Linda Stone***

**Location/Installation Restoration Program:**

Fort Hunter Liggett is a U.S. Army training facility consisting of approximately 165,000 acres in southern Monterey County. Current and historic uses of this facility include field exercises and weapons and equipment testing. Most of the land is undeveloped and is used for field training. Portions of Fort Hunter Liggett are leased for cattle grazing. The Main

Garrison includes offices, barracks, motor pools, and instrument fabrication/testing facilities. Department of Toxic Substances Control is the lead agency for cleanup activities; however, the Regional Water Board is primarily responsible for most of the sites that require further action.

**Sites/Chemicals of Concern:**
Installation Restoration Program sites include a closed landfill, former underground storage tanks, spill areas, unexploded ordnance areas, hazardous waste accumulation sites, and former fire fighting training areas. The primary chemicals of concern include: chlorinated solvents, petroleum, oils, lubricants, heavy metals, chlorinated pesticides, and PCBs.

**Progress:**
The base-wide restoration program is ahead of schedule. To date, action is complete at thirty-two of the thirty-four sites at Fort Hunter Liggett. The two remaining sites consist of the facility landfill and a groundwater plume associated with two former petroleum tanks. Both of these sites are being successfully remediated.

The Army has responded to the Regional Water Board's letter on emergent chemicals, in a letter stating that, based on site history, the emergent chemicals are not constituents of concern. Additionally, the results of an analysis of the facility's water supply well found no detectable concentrations of perchlorate.

## LOMPOC BRANCH U.S. DISCIPLINARY BARRACKS

***Lead Staff: Kristina Seley***

**Location/Base Realignment and Closure Program:**
The Lompoc Branch U.S. Disciplinary Barracks Federal Correction Facility is located approximately two miles northwest of the City of Lompoc, Santa Barbara County. The property was purchased by the War Department in 1941, and operated as part of Camp Cooke until 1946, when it was converted to a military detention center. In 1959, the Bureau of Prisons took over management of the facility, which is currently operated as high, medium, and low security prisons. The property consists of approximately 2,900 acres and includes a sign factory, electron cable manufacturing plant, furniture factory, print shop, cattle ranch, dairy, butchering plant, sewage treatment plant, and farm.

This facility was selected for closure as part of the 1995 Department of Defense's Base Realignment and Closure (**BRAC**) and ownership was transferred to the current operator, Bureau of Prisons, in 2003. An Environmental Baseline Survey Report, which delineated potential or known areas of concern, was completed in June 1997. The Regional Water Board is the lead agency for this BRAC site and the County of Santa Barbara is overseeing environmental issues at a landfill and closure of former underground storage sites.

**Sites/Chemicals of Concern:**
Sites being addressed as BRAC cleanups include Wood Dump/Landfill, Washrack Site, Former Farm Fuel Site, and a former quarry site. Constituents of concern at these sites include: chlorinated solvents, petroleum, oils, lubricants, and metals.

**Progress:**
Wood Dump: *Last season's winter storms caused substantial erosion of the recently completed Wood Dump final cover. The Army and its consultants worked to improve drainage and address erosion problems. The Army's consultant completed site mitigation grading activities in 2005 and documented the improvements in a December 15th Memorandum "Completion of Major Erosion Repairs at the Wood Dump".*

*Regional Water Board staff worked with the Army and its consultants to develop an appropriate long-term monitoring and reporting program to document the conditions at the Wood Dump Landfill. The Army's consultant submitted the "Final Post Site Mitigation Maintenance and Monitoring Plan" on December 13, 2005, which incorporated comments from Regional Water Board staff, U.S. Army, U.S. Bureau of Prisons, and Santa Barbara County Environmental Health.*

Washrack and Farm Fuel: *Since 2002, the Army has conducted an Enhanced Reductive Dechlorination (ERD) program to bioremediate tetrachloroethene (PCE) at the Washrack Site and 1,2 dichloroethane DCA at the Farm Fuel Site. Based on results collected in the third quarter 2005, PCE has only exhibited decreasing trends in monitoring wells within five feet of substrate injection wells. In September 2005, the consultant expanded the ERD program at the Washrack site by adding 12 injection wells and one monitoring well. The consultant also increased the injection volume to improve substrate distribution. The Army's consultant will submit the next quarterly report with results from the expansion on January 31, 2006.*

**CAMP ROBERTS**
***Lead Staff: Kristina Seley***

**Location/Installation Restoration Program:**
Camp Roberts is a California Army National Guard installation located approximately 10 miles north of Paso Robles. The 42,000-acre facility spans northern San Luis Obispo County and southern Monterey County. The installation was built in 1941, and used as a staging/training area for the U.S. Army until 1971, when it was transferred to the California Army National Guard. The National Guard and U.S. Army currently use Camp Roberts for training. The installation contains two developed areas, the Main and East Garrisons. The remaining lands are used for training and firing ranges. Most areas of potential or known contamination are associated with industrial-related activities conducted during World War II and the Korean War and are located in the Main Garrison. Because of limited funding from the Army National Guard, the installation restoration process is still in the investigative phase. The Regional Water Board is the sole regulatory lead at this installation.

**Sites/Chemicals of Concern:**
Fifty-eight sites were investigated during the Site Inspection phase, which was completed in 2003. The potential chemicals of concerns consist mainly of petroleum hydrocarbons and some solvents. The contents of the former landfills are largely uncharacterized but include burn ash and ordnance.

**Progress:**
*In the fall of 2005, the Army National Guard awarded a "paid for performance" environmental investigation contract. Regional Water Board staff met with the Army and its consultant on November 29, 2005. The Army's consultant presented their scope of work and schedule for a "Remedial Investigation/Feasibility Study" and for closure at two former landfills. Regional Water Board staff provided initial comment. The consultant will provide the draft "Remedial Investigation/ Feasibility Study" in April 2006.*

Permitted Active Landfill: *On December 9, 2005, Regional Water Board staff received the "Second Semiannual 2005 Groundwater Monitoring Report" for the permitted active landfill. Perchlorate was detected at 6 micrograms per liter (µg/L), and was later confirmed during a resampling event at 4.5 µg/L and 5.1 µg/L (field duplicate) at one of the landfill detection monitoring wells. The Army National Guard proposes to continue with the detection-monitoring program to further evaluate the nature of the potential release. The next sampling event is scheduled for March 2006. Regional Water Board staff will provide comments to the Army National Guard's recommendations prior to the February Board Meeting.* Results of an analysis of the facility's water supply well found no detectable concentrations of perchlorate. Additional evaluation of emergent chemicals will be conducted during the upcoming remedial investigation.

## CONCLUSION

The Regional Water Board's Department of Defense oversight program remains very active and effective. Cooperative relationships with military personnel, consultants, various agency staff, and the public have been maintained and substantial remediation continues.

*The next program Status Report is planned for the August 2006 meeting.*