



FA-18 refueling over San Nicolas Island

FY 2015 SECRETARY OF DEFENSE AWARD CATEGORY: ENVIRONMENTAL RESTORATION - TEAM AWARD



Naval Base Ventura County, California

INTRODUCTION:

Naval Base Ventura County (NBVC) is comprised of two major operating facilities: Point Mugu (4,500 acres) and Port Hueneme (1,600 acres), two islands: San Nicolas Island (13,370 acres) and San Miguel Island (9,370 acres), and several outlying sites such as Santa Cruz Island, Fort Hunter Liggett and Laguna Peak. Point Mugu and Port Hueneme are both located along the Pacific coastline in southwestern Ventura County, California, adjacent to the cities of Oxnard, Port Hueneme and Camarillo. Several of the islands and outlying sites are remote from NBVC. San Nicolas Island (SNI) and San Miguel Island (SMI) lay in the Santa Barbara Channel, 75 miles southwest and 100 miles west of Los Angeles respectively. Fort Hunter Liggett (FHL) is 200 miles to the north-west.

NBVC provides airfield, seaport and base support services to fleet operating forces and shore activities and employs

Point Mugu, Littoral Combat Ship mission package support at Port Hueneme, and Naval Construction Group One (NCG1) battalion level exercises at FHL.

NBVC Environmental Restoration Team

Geoff Buckner: NAVFAC SW, Remedial Project Manager

Mike Gonzales: NAVFAC SW, Remedial Project Manager

Steve Granade: NBVC, Remedial Project Manager

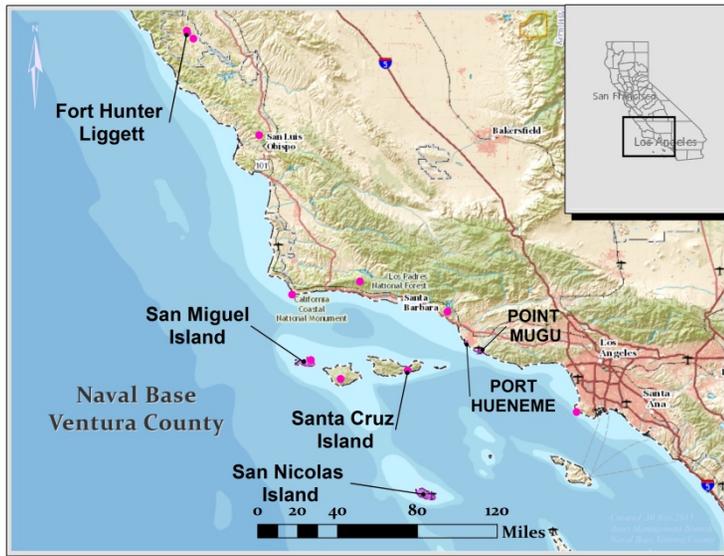
Eric Green: NAVFAC SW, Remedial Project Manager

Ryan MacLure: NAVFAC SW, Remedial Project Manager

SUMMARY OF ACHIEVEMENTS:

The NBVC Environmental Restoration Team (ERT) has performed restoration activities at 135 Sites since its inception. Significant recent and ongoing successes achieved by the ERT include:

- Partnership with Calleguas Creek Watershed Committee results in projected \$10.2M cost saving for the preferred alternative for Point Mugu IR Site 11, the Mugu Lagoon.
- Partnership with Southern California Edison (SCE) to install a photovoltaic array on Port Hueneme IR Site 14.
- Expedient removal of munitions and explosives of concern (MEC) at the FHL facility in support of Sea-bee operations.
- Fast track MEC survey and risk assessment to support ongoing operations at SMI.



Naval Base Ventura County is spread across southern California and includes facilities on 3 islands

more than 20,060 military and civilian personnel. These personnel work under 80 departments and/or supported commands that support the diverse missions of the Department of Defense.

Examples of missions include combat and weapon systems testing on the 36,000 square mile Point Mugu Sea Range off the coast, MQ-8B/C (Fire Scout) and MQ-4C (Triton) unmanned platform operations at

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**Seabee convoy exercise
at Fort Hunter Liggett**

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**Geoff Buckner
Naval Facilities Engi-
neering Command
Southwest**

- Completion of 14 removal actions at Port Hueneme with a cost savings of \$7.6M.
- Lead removal at the Point Mugu Trap & Skeet Range with a cost savings of \$500K.
- Innovative in-situ chemical oxidation (ISCO) injection implemented at Point Mugu Site UST 24.
- Optimized existing remedial actions at Point Mugu IR Sites 6 and 24 via the introduction of robust dechlorinating microbes.
- Finalized Records of Decisions (ROD) at 10 Sites.
- Community consensus with NBVC restoration actions via an active Restoration Advisory Board.
- Awarded in excess of 72% of all IRP and MRP work to small businesses.

POSITION DESCRIPTION:

The NBVC ERT members provide all aspects of Installation Restoration Program (IRP) and Munitions Response Program (MRP) oversight for all of NBVC.

The NBVC Remedial Project Manager performs the following aspects of IRP and MRP oversight for all of NBVC: Technical and administrative review of all program documents; interface with base personnel & tenants; on-site logistics; facilitation with regulatory agencies; is the face of the Navy for community participation; coordination of the Restoration Advisory Board; and ensures compatibility of the program with mission requirements.

The NFECSSW Remedial Project Managers are responsible for oversight and overall execution of the NBVC IRP and MRP. They are responsible for the following: providing technical oversight during project performance; coordination with installation personnel to

assess, control and abate contamination; preparation of project plans in coordination with installation; ensuring adequate funding is available to complete environmental investigations; and establishing contract vehicles for the planning and execution of the IR program.

The NBVC complex includes 78 IRP sites, 7 MRP sites, 35 RCRA subtitle C sites, and 15 RCRA subtitle I sites. 13 sites achieved response complete status during FY14 and FY15. A total of 72 sites out of the 135 total sites are considered to be response complete.

PARTNERSHIPS ADDRESSING ENVIRONMENTAL CLEANUP ISSUES BETWEEN DOD AND OTHER ENTITIES – Beneficial partnerships are an integral process within the Environmental Restoration Program at NBVC. These partnerships include federal, state, and local government, industry, and academia. Partnerships are developed whenever necessary to help achieve program goals.

ACCOMPLISHMENTS:

PARTNERSHIP WITH CALLEGUAS CREEK WATERSHED COMMITTEE -- An important partnership is with the Calleguas Creek Watershed Committee (CCWC). The CCWC formed to address regional surface water contamination. NBVC joined the CCWC in 1998. One of the goals of the CCWC was to collaborate with the Los Angeles Regional Water Quality Control Board (LARWQCB) in preparing Total Maximum Daily Loading (TMDL) limits for Clean Water Act listed pollutants. This regional contamination has and is still contributing to contamination to Point Mugu IR site 11, the Mugu Lagoon.

The standard Navy practice would have included a CERCLA cost recovery action against all potentially responsible parties. Instead, ERT members reached

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E-2C Hawkeye lands at NBVC Point Mugu

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Mike Gonzales
Naval Facilities Engineering Command
Southwest



NBVC IR Site 11, Mugu Lagoon, is 2,300 acres and covers over 50% of NBVC Point Mugu

agreement with CCWC stakeholders that the TMDL program was the most appropriate method to deal with regional pollution. The CCWC stakeholder group includes the California regulatory community, local government, and agricultural interests. The final TMDLs included use of natural attenuation, continued monitoring and contaminant source control as the preferred method for contaminant removal throughout the watershed, including Mugu Lagoon.

- Participation by the NBVC ERT in the CCWC during 2014 and 2045 generated the following benefits:
- Convinced the LARWQCB that NBVC was not a significant source of any of the listed contaminants in Mugu Lagoon.
- The 2015 Proposed Plan for Point Mugu IR Site 11 recommended implementation of institutional controls (ICs) to prevent human exposure to contaminants until the TMDL program achieves its cleanup goals for Mugu Lagoon.

- *The estimated costs savings for implementation of ICs instead of more intrusive options is \$3M.*
- Consensus agreement with CCWC stakeholders that continuing monitoring costs for Mugu Lagoon be shared prorated by the amount of contamination each party contributed to the total amount. The NBVC prorated share is ~4% of the total \$250K annual monitoring cost, \$10,000 in both 2014 and 2015.
- *The estimated NBVC cost savings for monitoring of Point Mugu IR Site 11 for the entire 30 year cleanup is approximately \$7.2M net present value.*

PARTNERSHIP WITH SOUTHERN CALIFORNIA EDISON --

The NBVC ERT entered into a partnership with Southern California Edison (SCE) as part of the Secretary of the Navy's (SECNAV) accelerated plan to produce 1 gigawatt of renewable energy capacity by the end of 2015. The objective of the partnership with SCE pertained to the construction, operation, and maintenance of a 6 Megawatt Solar Photovoltaic (PV) System on Port Hueneme IR Site 14. Site 14 is an old landfill used as open space since 2000. The NBVC ERT contributions to the partnership helped facilitate the following project elements:

- Determination that the ROD for Site 14 allowed for the construction, operation, and maintenance of a PV system if design criteria precluded landfill cap damage.
- That SCE will enter into a lease agreement to use Navy land to construct, operate, and own the PV system. SCE would sell the generated power to customers outside the Navy. *The Navy will incur no capital or maintenance costs and would retain the right to access the power during emergency conditions.*

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MQ-8C Fire Scout test flight at NBVC Point Mugu

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**Steve Granade
Naval Base Ventura County**



Approximately 24,000 solar panels will generate 6MW of electric power at Port Hueneme IR Site 14

- Completion of the Environmental Assessment and Finding of No Significant Impact for the project in August 2015.
- Completion of the Environmental Condition of Property in August 2015.

FAST TRACK CLEANUP – The NBVC ERT prioritizes speed of execution, cost, and protection of human health and environment in all environmental restoration contracts. The speed of execution is especially important when Navy mission activities have been impacted by environmental restoration issues. *The ERT executed two fast track environmental restoration projects in FY14 and FY15 to restore mission capability that had been adversely affected by MEC: One at FHL and the second at SMI.*

- MEC was encountered at the FHL Blackjack Compound during construction and SMI during a natural resources survey. Both facilities were closed to

personnel due to explosive safety risks, pending appropriate mitigation actions.

- All MEC is handled in accordance with state and federal regulations and per the requirements of the Naval Ordnance Safety and Security Activity and Department of Defense Explosives Safety Board.
- *The execution of the MEC removal contract for FHL was completed in December 2013 in just 155 days. A total of 1,242 MEC items were recovered from the surface and subsurface, including some from underneath buildings.* 611 of the MEC items that were determined to present an explosive hazard were safely disposed of in a detonation event on December 12, 2013. An additional 17.2 tons, were certified to be material determined as safe (MDAS) and recycled as scrap metal. *The Blackjack Compound was safely reopened for NBVC mission uses in January 2014.*



The presence of unexploded ordnance underneath buildings at Fort Hunter Liggett required rapid response and removal

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Missile test near San Nicolas Island on the Point Mugu Sea Range

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Eric Green
Naval Facilities Engineering Command Southwest

- *The execution of the MEC surface and subsurface survey and removal contract for SMI was completed in October 2014 in just 104 days.* The MEC survey included transects traversing across the entire island. All MEC survey transects were performed on foot due to the absence of roads on SMI. A total of 674 subsurface objects were evaluated. 12 MEC items were discovered, were safely processed to MDAS, and recycled as scrap metal.
- The NBVC ERT used the results of the 2014 MEC survey of SMI to develop an Explosive Safety Risk Assessment (ESRA) for the island. The ESRA determined that portions of the island would be suitable for reopening to personnel with the adoption of Land Use Controls (LUC) that mitigated explosive safety risks. *The LUC Plan was developed in partnership with the Channel Islands National Park, who is a tenant on SMI, and completed in August 2015.*

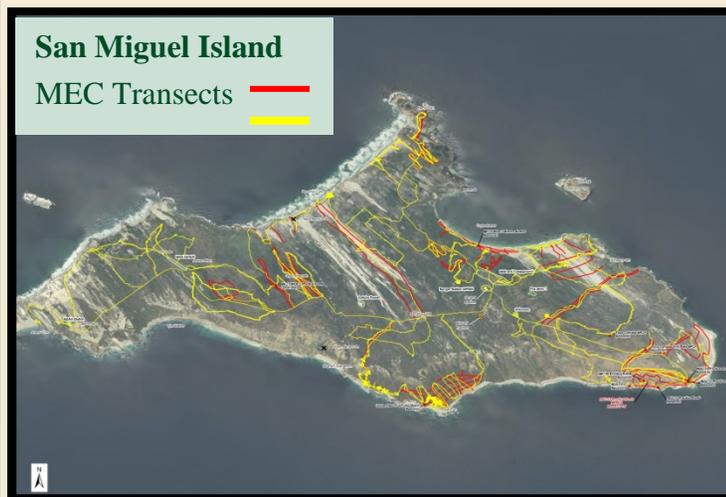


Use of portable unexploded ordnance detectors was required at San Miguel Island due to the lack of roads

INNOVATIVE TECHNOLOGY DEMONSTRATION, VALIDATION, AND IMPLEMENTATION –

The NBVC ERT implements innovative solutions whenever doing so provides added value in terms of efficiency, effectiveness, and or economy when performing removal or remedial actions. *14 removal actions were performed at NBVC Port Hueneme during FY14 and FY15. A total of 12,300 tons of contaminated waste was excavated and sent for offsite disposal.* One removal action and 4 long term groundwater remedial actions were performed at NBVC Point Mugu. Innovative solutions implemented as part of these removal and remedial actions included:

- Use of in-situ capping was used at Port Hueneme IR Site 19A. In-situ capping involves the removal of unsuitable surface material at a waste site and subsequent placement of a capping material that isolates remaining contaminated material to prevent



Over 200 miles of MEC transects traversed San Miguel Island during the unexploded ordnance survey

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F-35 testing and evaluation at NBVC Point Mugu

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Ryan MacLure
Naval Facilities Engineering Command Southwest

further exposure to human and environmental receptors. IR Site 19A is the entire drainage canal system at Port Hueneme, 2 miles long and contaminated with pesticides and PCBs. The removal action involved excavation of one foot of contaminated sediment and re-placement with one foot of erosion resistant soil. *5,400 tons of contaminated sediment was disposed of offsite. Use of in-situ capping generated costs savings of \$4.8M compared to offsite disposal.*

- Use of in-situ capping was used at Port Hueneme IR Site 19. Site 19 is the Port Hueneme 2,000 foot long tidal canal. The ERT elected to restrict tidal flow and drain the canal prior to performing in-situ capping instead of using hydraulic dredging. A coffer dam was installed to restrict tidal flow and allowing for subsequent draining of the canal with pumps. One foot of contaminated sediment was removed and replaced with erosion resistant aggregate. 1,160 tons of contaminated sediment was disposed of offsite. *Use of in-situ capping instead of offsite disposal and using the coffer dam instead of hydraulic dredging generated costs savings of \$2.8M.*
- A removal action to remove lead contamination was performed at the Point Mugu Trap & Skeet Range Site. Lead separation and recovery was the innovative solution chosen by the ERT as the preferred alternative instead of excavation and offsite disposal. *A one of a kind separation system, originally designed to separate pistachio shells from pistachio nuts, was used to separate and segregate lead shotgun pellets, sand, and broken targets.* A total of 25,000 pounds of lead shotgun pellets were recovered and recycled. 2,350 tons of cleaned sand was reused at the site. 918 tons of target debris was disposed of offsite as non-hazardous waste. *Separating the lead and sand from*



A coffer dam was used to stop tidal flow at Port Hueneme to avoid using a hydraulic dredger

the target debris for recycling and reuse generated cost savings of \$500K compared to offsite disposal as lead contaminated hazardous waste.

- Innovative in-situ chemical oxidation (ISCO) injection was implemented at Point Mugu Site UST 24. The groundwater at UST 24 is contaminated with chlorinated solvents that have not responded to bioremediation. The ERT decided to switch to ISCO injection as the preferred remedial alternative. Contamination levels at UST Site 24 were reduced and have remained below cleanup goals for over one year after the ISCO injection. *UST 24 has been recommended for closure based on the successful ISCO injection.*
- Bioremediation of chlorinated solvent contaminated groundwater using naturally occurring dehalococoides bacteria (DHC) at Point Mugu IR Sites 6 and 24 has been successful in reducing Trichloroethene to below cleanup goals. However vinyl chloride (VC)



West coast home basing of the MQ-4C Triton at NBVC Point Mugu

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Army Reserve 481st Transportation Company Home ported at NBVC Port Hueneme



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was determined to be degrading slower than required. The ERT optimized the bioremediation process via the introduction of a more robust strain of DHC that was more efficient in degrading VC. *VC concentrations were reduced by over 50% after the introduction of the robust DHC and are approaching the site cleanup goals.* The plume size was also reduced by 50%.

RECENT SITE DECISION DOCUMENTS COMPLETED AND ACREAGE RETURNED FOR MISSION USE --

The NBVC ERT was very successful in FY14 and FY15 in completing final decision documents in the form of RODs and making land available for mission use.

- Finalized the ROD for Point Mugu IR Sites 1, 2, 4, 6, 8, 9, 20, and 24. 31 acres were made available for mission use.



Separating lead shot from sand and broken targets required the use of special equipment originally designed to separate pistachio nuts from shells

- Completed the ROD for Point Mugu IR Site 5.
- Completed the ROD for Point Mugu MRP Site 4. 30 acres were made available for mission use.
- 9,370 acres were reopened for mission use at SMI.*
- 7 acres were reopened for mission use at FHL.*

RABs – The NBVC ERT has maintained an active RAB since 1993, fostering an atmosphere of mutual respect and cooperation between the Navy, regulators, and the local community. The ERT utilized the RAB as one forum for required public meetings for all removal actions performed during FY14 and FY15. Interested parties for included the Sierra Club, the Environmental Defense Center, and the Beacon Foundation.

The local community regards the RAB as a helpful and positive tool, enhancing a good working relationship between the Navy, regulators, and community members that attend regularly. RAB meetings have created trust among the public and interested attendees. The public now has positive opinion and better understanding of the Navy’s cleanup efforts and its ultimate benefits to the community, its people and the surrounding environment.

OPPORTUNITIES FOR SMALL AND SMALL DISADVANTAGED BUSINESSES IN ENVIRONMENTAL RESTORATION –

The Team has provided significant opportunities to small and disadvantaged businesses. *In excess of 72% of the FY14 and FY15 \$5.34M NBVC IRP and MRP budget was set aside and awarded to small businesses. This was among the highest percentage achieved by any facility in the NAVFAC SW footprint.* The acquisition strategy for the NBVC ERT is to consider small business as the default position for all contracting efforts. The small business contracting efforts have almost doubled the DOD goal of 42%.