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**MEETING MINUTES, NAVY AREA-WIDE RESTORATION ADVISORY BOARD
MEETING**
02/01/2014
NAVFAC MARIANAS

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Meeting Minutes
Navy Area-Wide Restoration Advisory Board (RAB) Meeting
Hyatt Regency Hotel, Tumon, Guam
February 6, 2014

I. ATTENDANCE

See Attachment A

II. OPENING

LCDR Chris Coggins, the Naval RAB co-chair opened the RAB meeting and thanked everybody for attending. LCDR Coggins stated that there would be three (3) presentations for the evening. He asked that if people had a question about any of the content in the presentation to raise their hand and introduce themselves before asking the question. He also asked that everybody sign in on the sign-in sheet and added that factsheets for the evening's presentations as well as the minutes from the last RAB meeting, held in September 2013, were available. LCDR Coggins informed attendants that all questions after the conclusion of the RAB meeting should be directed to Mr. Bill Austin, PAO of NAVFAC Marianas. Lastly, he stated the availability of refreshments before giving a brief introduction of the evening's presentations.

III. TECHNICAL PRESENTATIONS

The three (3) presentations for the evening were:

1. Remedial Investigation, US Navy Munitions Response Program, Finegayan Skeet and Trap Range- Site UXO 000001, Naval Base Guam, North Finegayan
2. Draft Remedial Investigation Work Plan for the Apra Harbor Sediment Operable Units, Naval Base Guam
3. Navy's Guam Environmental Restoration Program Site Status Update

IV. OPEN DISCUSSION ON NAVY TECHNICAL PRESENTATIONS AND OTHER ISSUES:

Remedial Investigation, US Navy Munitions Response Program, Finegayan Skeet and Trap Range- Site UXO 000001, Naval Base Guam, North Finegayan — Mr. Vicente Ada, NAVFAC Marianas

Mr. Vicente Ada discussed the Navy's plans for completion of the Remedial Investigation at the Finegayan Skeet and Trap Range UXO Site 000001. The site is a former small arms firing range on the islands northwest side, and the work will be performed under the Navy's Munitions Response Program.

The site was previously used for small arms training and was active from 1972 until 2003. The site was officially deactivated in the early 1990's. The building records indicate that the high/low skeet and trap houses were demolished in 2004/2005.

A Preliminary Site Assessment/Site Inspection was completed at the site in 2010. Soil sample results identified lead and polynuclear aromatic hydrocarbons (PAHs) at concentrations above relevant screening criteria and further investigation was recommended.

The Remedial Investigation study boundaries were based on the locations of the former skeet and trap range, the width of the dispersion area for the skeet range, the most likely location of congregated skeet clay pigeon fragments compiled during range maintenance and the maximum shotgun pellet accumulation area.

The current Remedial Investigation has three main objectives:

- Evaluate the presence of Munitions and Explosives of Concern (MEC) on the surface of the site;
- Test the soil for residual chemicals associated with small arms;
- Evaluate whether the site is safe for human health and the environment.

The Remedial Investigation will be completed in two phases:

- **Phase I-** The boundaries of the former range will be located, surveyed, and surface MEC clearance will be completed. Within the surveyed area, field personnel will establish 28 decision units (DUs).
- **Phase II-** Surface soil samples will be collected from the 28 DUs. Each surface soil sample will be collected using incremental methodology sampling and each sample will consist of a minimum of 30 incremental samples. One discrete subsurface soil sample, up to 3 feet deep, will be collected per DU. Samples will be analyzed for antimony, copper, lead and PAHs to evaluate site geochemistry. Additionally 6 lead pellet samples will be collected to estimate potential risk to ecological receptors. Analytical results from all samples will be used in the human health and ecological risk assessments.

It is anticipated that the Remedial Investigation field activities will begin in April 2014 with results presented in the RI Report in mid-2014.

Questions/Comments:

Mr. Jess Torres asked where the antimony and copper were coming from as a source of contamination. Mr. Ada responded, saying that the metals were used in the coating on the bullet.

Dr. Weare, asked why some areas on the figures were identified as an increased MEC clearance area/ concern. Mr. Ada explained that these areas are defined in the Explosive Safety Submission (ESS) generated for Guam. Further, Mr. Gray clarified that the boundaries developed in the ESS were developed using research and records to identify and review historical battles on Guam. Based on the research, all of Guam was defined as a low, moderate, or high probability area for encountering MEC. The Finegayan area is located in a moderate area because it is located along a western coast and WWII battles happened within the vicinity.

Dr. Weare asked what the intended future use of the property will be. Mr. Gray responded that the exact use of the property is not known at this time; however, might possibly be used for future Marine relocation activities. He clarified that the purpose of the RI is to make the property safe, with no restrictions for future use.

Dr. Weare inquired about what the access roads are for the site. Mr. Ada explained that the property is accessed through a former military housing area.

Mr. Ed Moon asked if the MEC clearance that planned to be completed on the site will be completed only at the surface or subsurface. Mr. Ada stated that the MEC clearance would only be completed at the surface level, up to 6 inches deep.

Draft Remedial Investigation Work Plan for the Apra Harbor Sediment Operable Units, Naval Base Guam — Ms. Kimberly Markillie, NAVFAC Pacific

Ms. Markillie discussed the Navy's Draft Remedial Investigation Work Plan for the Apra Harbor Sediment Operable Units that is expected to begin in the summer of 2014.

The site is located in Apra Harbor, Guam's only deep-water harbor, the primary berthing facility on the island. The Harbor is generally divided into two parts: Outer Apra Harbor that supports Navy, commercial and recreational activities and Inner Apra Harbor where the Naval Base Guam is located.

Previous studies have indicated elevated levels of heavy metals and polychlorinated biphenyls (PCBs) in Apra Harbor sediment and marine life. The majority of the Department of Navy's Guam based operations occur on the land surrounding Apr Harbor. Current and historical facilities on the land surrounding include the following potential sources:

- Ship Repair Facility
- Navy Public Works Center
- Guam Naval Complex
- Multiple fuel tank farms

Additional non-point sources in include runoff of pesticide, residues and emissions from automotive vehicles, and general urbanization. In-water operations that could potentially impact harbor sediments include drydock activities, vessel cleaning and painting, accidental releases of fuel or solvent, and harbor dredging.

The objective of the investigation is to collect data necessary to evaluate the nature and extent of chemicals of potential concern (COPCs) in Apra Harbor sediment and evaluate the potential risks to human health and the environment. Additionally the investigation will:

- Support development of site specific potential cleanup goals;
- Evaluate current sources of chemicals to differentiate background chemical concentrations from naturally occurring and human source;
- Evaluate whether onshore sources of chemicals entering the harbor continue, which could potentially recontamination sediments following cleanup;
- Develop a harbor-wide sediment transport model.

The objectives will be obtained through the following proposed field activities:

- Sediment sampling
- Fish and crab tissue sampling
- Sediment sampling at streams and storm drain outfalls
- Passive sediment porewater sampling
- Sediment toxicity testing and bioavailability assessment
- Sediment profile imaging
- Wave and current measurements
- Bathymetric and sonar surveys

Sediment samples will be collected at 179 locations throughout the harbor from the surface to six feet below the surface. Samples will be analyzed for physical and geochemical properties and for the following COPCs: metals, PCBs, chlorinated pesticides, polynuclear aromatic hydrocarbons, dioxins/furans, and tributyltin.

Tissue samples from fish and crabs will be collected at 16 sampling locations throughout the harbor. The tissue samples will be analyzed for chemicals that are known to be long lasting and build up in organisms: arsenic, lead, mercury, PCBs, chlorinated pesticides, and dioxins/furans. The target fish species for sampling (by priority) are Yellowstripe goatfish, Three-barred goatfish, and Black-bloch Emperor; invertebrate species are Mud crab, seven-eleven crab, and the Red reef crab. These bottom-dwelling fish and crabs are targeted for this sampling effort because they live close to the sediments and typically eat invertebrates living in or on the sediments.

Bioavailability measures how available sediment-bound chemicals are to marine life. Sediments can bind chemicals to varying degrees, which alters their availability to the water and transfer to marine life through eating or contact with sediment. Select surface sediment samples collected within Apra Harbor will be assessed for bioavailability through sediment toxicity assays and passive sediment porewater analysis.

Sediment Profile Imaging (SPI) will be utilized to visually characterize the sediment within Apra Harbor. The SPI device is inserted into the upper four inches of the sediment and captures a cross-sectional image of the surface sediment layer. These images will be used to determine the presence of organisms in the surface sediment, grain-size distribution, and evidence of whether the sediment is subject to being eroded or deposited.

Transport processes present in Apra Harbor include surface water discharge by streams and storm drains, tidal currents, wind-generated waves, propeller wash from ships, and maintenance dredging of the harbor. These transport processes will be evaluated to determine the effects on the distribution of COPCs in Apra Harbor. This will be achieved through evaluation of the following data that will be collected from the Harbor:

- Rates of sediment deposition and erosion
- Wind-driven wave forces
- Currents generated by ships
- Characteristics of sediments suspended in stream water entering the harbor

An acoustic Doppler and probes will be utilized for data collection.

The following lines of evidence will be utilized to evaluate the extent of sediment contamination and potential biota impacts:

- COPC concentrations in surface and subsurface sediments compared to screening criteria;
- COPC concentrations in biota tissue compared to screening criteria;
- Toxicity and bioavailability of COPCs in sediment;
- The nature of sediment transport in each area based on the sediment transport evaluation results.

Ms. Markillie reminded attendants that the Navy encourages the public to gain a comprehensive understanding of the site and the activities that will be completed at the site and provide any additional questions or comments they have on the proposed work.

Questions/Comments:

Dr. Weare asked if a Geiger counter has ever been used in previous studies completed within Apra Harbor. Ms. Markillie replied that all dredge sediment removed from the harbor is run through a Geiger counter, and that there have never been any detections of radiation encountered.

Ms. Nicole Santos inquired if this project is related to proposed dredging activities for Apra Harbor. Ms. Markillie clarified that this is not specifically related, and that this investigation will be completed under the IR Program. The IR Programs purpose is to remediate areas that have previously been identified with contamination that may pose a risk to the environment. Ms. Santos followed up by inquiring how the public could learn more about the dredging activities that are proposed at the XRF Wharf. LCDR Coggins replied that the XRF Wharf project is a MILCON project that is unrelated to the activities proposed in the Apra Harbor Remedial Investigation under the IR Program. He stated that the details of the MILCON project are available on a website [<http://guambuildupeis.us>].

Mr. Ed Aranza with GEPA inquired why other animals are not being considered for bioassays sampling, including clams and oysters. Ms. Markillie responded that bioassays sampling will be completed for creatures that live within the sediment, and that fish and crabs are targeted because they are part of human consumption.

Ms. Valerie Brown, NOAA, asked how long the sediment transport study will take place because of seasonal variations. Ms. Makillie stated that a Tier II Model of sediment transport will be completed and is anticipated to take approximately 6-8 months. Ms. Brown followed up by asking if other agencies could be included in the scoping session for the study. Ms. Markillie stated that some agencies were previously included, as defined by GEPA, but indicated that NOAA may be able to be included in future meetings.

Dr. Denton stated that a study completed by WERI in early 1990s indicated high levels of TBT (tributyltin-10) within the inner harbor related to paint ships. A small investigation completed by WERI within the inner harbor indicates that TBT causes sex changes in female bivalves and results in infertility in the bivalves. He further stated that eventually in the inner harbor, some organisms will not survive and that will impact the whole food chain within the harbor. The samples were sent to a specialist in Japan for confirmation, and he concurred that the TBT was

responsible for the reproduction issues in bivalves. He concluded by stating that bivalves should be included in this RI, and further stated that the impacts of TBT on coral are currently unknown but could also be large. He reminded the group that it is important to look at ecological impacts to the harbor even if there are not direct human impacts at this time.

Navy's Guam Environmental Restoration Program Site Status Update — Mr. Richard Gray, NAVFAC Marianas

Mr. Gray presented a Status Update on the Navy's Environmental Restoration Program on Guam. He reminded the attendants that the purpose of the Navy's Environmental Restoration Program is to reduce risk to humans and the environment from historical activities at Navy properties. The program is organized into three programs based on site type and location:

- Installation Restoration Program (IRP): addresses chemicals at sites located on active Navy installations and property;
- Munitions Response Program (MRP): addresses cleanup at sites with munitions and explosives of concern and chemical contamination hazards from past use of military munitions on active Navy installations and property;
- Base Realignment and Closure (BRAC) Program: addresses chemical on sites located on closed or transferring Navy installations and property.

The Guam IRP began in the 1980s. There are currently 19 active IRP sites: 5 being investigated, 1 in the process of being cleaned up, 11 are in long-term management, and 2 are planned for future action. Mr. Gray provided the current status of these projects:

- Site Investigation Sites:
 - Barrigada Building 50 Landfill
 - Building 27 Boiler Facility
 - Apra Harbor Prcel 7
 - Piti Power Plant
 - Apra Harbor Operable Units
- IRP Cleanup Sites:
 - Old NSD Drum Storage Lot
- IRP Long-Term Management Sites:
 - Tear Gas Burial Site
 - Building 3009
 - Lower Sasa Fuel Burning Pond
 - NEX Garage Septic Tank
 - Dry Cleaning Shop
 - Area Behind the SRF Fenceline
 - Orote Landfill
 - CB Landfill
 - Electrical Utility Sites
- IRP Planned Sites:
 - Camp Covington USTs 16, 19 and 20
 - NCTMS Barrigada UST 19

The Navy's MRP began in 2000. Site Inspections were completed at each of the five MRP sites in 2010 and further investigation was recommended for all five sites and are planned to begin soon. The sites include:

- Orote Point Rifle and Pistol Range
- Spanish Steps Trap and Skeet Range
- West Lookout Tower Smokeless Powder Burning Ground
- Naval Magazine Small Arms Range
- Finegayan Trap and Skeet Range (NCTMS)

All BRAC sites on Guam are currently in long-term management, these sites include:

- Various former NAS Agana Land Use Control sites
- Agana (Tiyan) Landfill
- Agana Power Plant
- Tamuning Telephone Exchange
- Route 2A (Old WESTPAC Site)

Mr. Gray reminded attendants that the Navy encourages local community members to become involved in the environmental cleanup program on Guam through participation in the Navy RAB.

Questions/Comments:

There were no questions or comments related to the Mr. Gray's presentation on the Site Status Update on the Navy's Environmental Restoration Program.

There were no further questions or comments on any of the presentations. Lt. Coggins thanked everybody for coming and reminded everybody that previous RAB meeting minutes and factsheets for these presentations were available in the back of the room. He stated that the next RAB meeting will take place on June 4, 2014. The meeting was adjourned.

V. APPROVAL



Lt. Commander Chris Coggins, Naval Base Guam

For additional information, please contact Mr. Bill Austin at:

Naval Facilities Engineering Command, Marianas
Public Affairs Office
Phone: (671) 349-4053
Email: William.Austin@fe.navy.mil

Copies of previous project reports discussing environmental investigation and restoration efforts are available at:

Nieves M. Flores Memorial Library
254 Martyr Street
Hagåtña, Guam 96910
(671) 475-4751

ATTACHMENT A

List of Attendees

**Navy Area-Wide RAB Meeting
Fiesta Resort Hotel, Tumon, Guam
March 20, 2013**

Attendees listed in no particular order

NAME	ORGANIZATION/ VILLAGE
William Weare	RAB Member
Mike Cruz	GEPA
Amelia De Leon	BSP/GCMP
Dionisio De Leon	DPW
Gerardo Gambirazzio	US Marines
Jesse Cruz	GEPA
Brian Thomas	EA
Margaret Aguilar	GEPA
Ed Aranza	GEPA
Joe Rouse	UOG, WERI
Linda Edward	RAB Member
Bensin Edward	
Nicole Santos	Guam Legislature, Office of Senator Ben Pangilinan
Michael Mann	EPA Region 9
Valerie Brown	NOAA
Elizabeth Leon Guerrero	RAB Member
Joy White	Marianas Variety
Thelma Roque	
Fermin Mendiola	
John Mark Joseph	State Archaeologist-DPR
Joseph Torres	Tamuning
John Calvo	WPRFMC
Richard Gray	NAVFAC Marianas
Lance Laughmiller	NAVFAC Marianas
Lisa Dames	Guam Legislature, Office of Senator Ben Pangilinan
Chelsea Cruz	Tumon
Walter Leon Guerrero	GEPA
Eric Palacios	GEPA
Galo Baluran	GEPA
Angel Marquez	GEPA
Paul Sablan	Hagatna
Valerie Sablan	PCR
Lauren Ahillen	PCR