Final
FORMER MARINE CORPS AIR STATION (MCAS) El Toro
112th Restoration Advisory Board (RAB) Meeting Summary

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MCAS EL TORO
SSIC NO. 5090.3.A

Meeting Location: Irvine City Hall, 1 Civic Center Plaza, Irvine, California
Meeting Date/Time: 25 February 2015/6:38 p.m. to 8:40 p.m.
Meeting Summary Prepared by: Tony Guiang, Accord MACTEC 8A Joint Venture (AM8AJV)

The Draft Meeting Summary was reviewed and has been approved without comments.

ATTACHMENTS:

Sign-In Sheets for the 25 February 2015 RAB Meeting

Presentation Slides:

- Project Update, Installation Restoration Program (IRP) Site 1 Soil and IRP Sites 1 and 2 Groundwater, Former MCAS El Toro
- Installation Restoration Program Second Five-Year Review Summary, Former MCAS El Toro
- Subsurface Delineation of Waste Area C1 at Installation Restoration Program (IRP) Site 3, Former Marine Corps Air Station El Toro, Irvine, CA

ATTENDEES: A total of 23 people attended the RAB meeting:

Navy: Jim Sullivan, Base Realignment and Closure (BRAC) Environmental Coordinator (BEC) and RAB Co-Chair; Content Arnold, Lead Navy Remedial Project Manager (RPM); Marc P. Smits, Navy RPM; and Morgan Rogers, Contracted Navy Project Manager (PM).

Regulatory Agencies: Mary Aycock, United States Environmental Protection Agency (USEPA); Jennifer Rich, California Department of Toxic Substances Control (DTSC); and Patricia Hannon, California Regional Water Quality Control Board, Santa Ana Region (RWQCB).

RAB Members: Bob Woodings, Community Co-Chair; Marcia Rudolph, Technical Subcommittee Chair; Peter Hersh; Chris Crompton; and Don Zweifel.

Other Attendees: Crispin Wanyoike, AECOM Technology Corporation; Dhananjay Rawal, Enviro Compliance Solutions, Inc. (ECS); Cliff Wallace, Orange County Great Park (OCGP); Harvey Liss, Irvine Planning Commissioner; Randy Kiefer, community member; Lars Oldewage, Irvine Ranch Water District (IRWD); Chris Johnson, CB&I; Jim Werkmeister, Five Points; Donna Zweifel, community member; and Tony Guiang and Teresa Toye, AM8AJV.

WELCOME/PLEDGE/INTRODUCTIONS/AGENDA REVIEW:

Mr. Jim Sullivan, BEC and Navy RAB Co-Chair, welcomed everyone to the Former Marine Corps Air Station (MCAS) El Toro 112th RAB meeting. Mr. Sullivan presented the opening slides, which included the following information: agenda, points of contacts for the RAB, locations for reviewing key documents, environmental websites, procedure for reviewing the meeting minutes, and proposed dates for the 2015 RAB meetings. Mr. Sullivan explained that the larger conference room was unavailable for this

RAB meeting, but that the Navy will work with Mr. Cliff Wallace, OCGP, to schedule the larger conference room for future RAB meetings.

Mr. Zweifel, RAB member, asked why it takes 45 days until the RAB is allowed to review the Meeting Summary. Mr. Sullivan explained it was the combination of the initial writing and the time allotted for Navy review. Further, the Navy wants to ensure that precise information is captured when the Draft Summary is submitted to the RAB for review.

OLD BUSINESS:

Announcements and Review of Action Items:

Mr. Sullivan stated that Mr. Bob Woodings (Community Co-Chair) would be delayed in attending tonight's RAB. He opened the floor for discussion of old business and announcements.

Although no old business was brought up at this time, Mr. Harvey Liss, Irvine Planning Commissioner, brought up two old business action items.

Mr. Liss reminded the RAB about the topic pertaining to the runway demolition discussed at the August 20, 2014 RAB meeting. He asked whether Mr. Wallace had any additional information regarding how many of the runways have been demolished. Mr. Wallace replied that the first phase of demolition, which comprises up to 680 acres, has thus far been completed, which equates to approximately 90 percent of the demolition completed.

Mr. Liss also commented about old business from the last RAB meeting discussion on Hangar 296 regarding the potential release of radium effluent into the sanitary sewer system. He asked whether the Navy's current investigation at Hangar 296 could lead to any updates regarding this issue.
Mr. Marc P. Smits, Navy RPM, replied that a Work Plan for additional work at Hangar 296 was recently submitted to the Regulatory Agencies for review. He noted that once comments on the Work Plan are received and addressed, the Navy plans to mobilize to the field to conduct additional work at Hangar 296.

There were no new announcements from the RAB attendees.

Mr. Sullivan explained there were two action items from the last RAB meeting. The first action item was to provide the materials from the RAB Operating Procedures to the RAB for review and comment.
Mr. Sullivan noted that the Operating Procedures were sent to the RAB members last fall and he had additional copies available at tonight's meeting. The second action item that the Navy is working to address is putting together a binder of Regulatory Agency correspondence. He noted that the Navy expects to have this ready by the next scheduled RAB meeting.

Mr. Sullivan invited Ms. Rudolph to provide an update on the subcommittee meeting that took place earlier in the evening.

Subcommittee Meeting Report:

Ms. Rudolph reported that one of the discussions that took place during the subcommittee meeting regarded the possibility of having another tour of the facility. Ms. Rudolph noted that there are several sites of interest for a potential RAB tour. Mr. Don Zweifel, RAB member, agreed with the request.
Mr. Sullivan stated that he would work with the RAB and other team members to schedule a feasible timeframe for the tour.

Mr. Peter Hersh, RAB member, requested that the Navy be cognizant of the weather during the summer months when scheduling the RAB tour. He asked the Navy to consider a mid- to late-June timeframe so that it coincides with the longest daylight hours of the year. Mr. Hersh expressed interest in seeing IRP

Site 1. To augment the discussion regarding which sites to visit, Ms. Aycock explained that during the subcommittee meeting the attendees expressed interest in visiting IRP Sites 1 and 2. Further, since the RAB was now meeting only twice per year, everyone agreed that a RAB tour could act as a supplement to a regularly scheduled meeting and would be a good way to get all the RAB members together informally.

Mr. Sullivan appreciated all the input and feedback and informed the RAB that the Navy would work on preparations for a RAB tour sometime during the mid- to late-June timeframe. Before moving on to the new business topic on the agenda, Mr. Sullivan asked for self-introductions for the record.

NEW BUSINESS:

RAB Operating Procedures Update:

Mr. Sullivan stated that because of Mr. Woodings' absence, new business pertaining to the RAB Operating Procedures update would be discussed later in the meeting. (Refer to Page 10 and 11.)

REGULATORY AGENCY UPDATE:

Ms. Mary Aycock (USEPA):

Ms. Aycock noted that the USEPA was currently reviewing a new Finding of Suitability to Transfer (FOST) for approximately 40 acres of land at MCAS El Toro. She explained that this FOST is a milestone because it documents that the property is environmentally suitable for transfer per Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) requirements. She noted that there may be one or two more FOSTs for MCAS El Toro, which means that they are getting very close to transferring all the property at the former base.

Mr. Zweifel asked what a FOST document pertains to. Ms. Aycock explained that a FOST is issued when the Navy has a segment or a parcel of land that is environmentally suitable for transfer. Mr. Hersh asked what parcels this FOST refers to. Ms. Content Arnold replied that the FOST was issued for various Carve Outs (COs) that includes IRP Site 3, IRP Site 5, and Anomaly Area 3. Ms. Aycock explained that, as part of the review process, the USEPA attorney would also review the FOST.

Ms. Aycock mentioned that the Proposed Plan (PP) for IRP Site 1 (Former Explosive Ordnance Disposal [EOD] Training Range) Soil is underway. She explained that a PP is issued to present the preferred remedy at the site and to request public comment. A public meeting will be held to discuss the

information presented in the Proposed Plan and provide the public with an opportunity to comment. Ms. Aycock noted that the Agencies and the Navy were working to schedule this public meeting to coincide with the next scheduled RAB meeting. To augment, Ms. Arnold noted that the Final PP is scheduled to be issued sometime during the summer/fall 2015.

Ms. Jennifer Rich (DTSC):

Ms. Jennifer Rich explained that the DTSC has been very busy reviewing numerous documents. She noted that she would not read through each of the documents currently in review. To summarize, she noted there are four documents for which DTSC has provided comments since the last RAB meeting and have now been finalized and three documents that have not been finalized, but have been reviewed by the DTSC (one of which is the FOST discussed earlier). She also mentioned that the DTSC has reviewed other documents, often referred to as data summaries, but has not issued any comments. Currently, the DTSC is reviewing five documents: the Feasibility Study (FS) for IRP Site 1 Soil and various other documents pertaining to IRP Site 16, IRP Site 3, and a Work Plan for Hangar 296. IRP Site 1 is the subject of a RAB presentation tonight.

Ms. Patricia Hannon (RWQCB)

Ms. Patricia Hannon stated that she is almost finished reviewing the closure report for Underground Storage Tank (UST) 651 and will be starting her review on the report for the Former Jet Propellant (JP)-5 Truck Fueling Area.

Mr. Sullivan introduced the first technical speaker, Mr. Smits, to begin the first presentation of the evening.

PRESENTATIONS:

Project Update, IRP Site 1 Soil and IRP Sites 1 and 2 Groundwater, Former MCAS El Toro

Mr. Smits explained that, initially, the contaminants for IRP Site 1 Soil and Groundwater were addressed simultaneously. However, for IRP Site 1, a time came when it was best to address contamination in soil and groundwater as separate entities. Subsequently, IRP Sites 1 and 2 Groundwater were addressed together because it was determined that groundwater contaminants from IRP Site 1 were comingling with groundwater at IRP Site 2.

Slide 1 – Presentation title.

Slide 2 – Presents an overview of topics to be discussed.

Slide 3 – Presents a site location map of IRP Sites 1 and 2 relative to Former MCAS El Toro. The map shows the location of IRP Site 2 to be downgradient from IRP Site 1. Mr. Smits explained that IRP Site 2 is shown on the figure because the groundwater between IRP Sites 1 and 2 is connected and the contamination is comingled at IRP Site 2.

Mr. Hersh asked Mr. Smits about ownership of the Adjacent Property, because he recalled that previous investigations were conducted on the Adjacent Property. Mr. Smits replied that later in the presentation, Mr. Crispin Wanyoike, AECOM, would discuss the role of the Adjacent Property in relation to IRP Site 1 and the time-critical removal action (TCRA) that took place at that site.

Slide 4 – Presents site descriptions for IRP Site 1 (the Former EOD Training Range) and IRP Site 2 (the Former Landfill known as Magazine Road Landfill).

Mr. Smits explained that the area at IRP Site 1 was very isolated when it was used as an EOD Training Range. He noted that munitions of concern (MEC) and a small area of naphthalene were found in soil at IRP Site 1. He explained that the source for naphthalene may have been fuel added to munitions and ignited to simulate an explosion hazard for EOD technicians. Mr. Smits noted the groundwater chemical(s) of concern at IRP Site 1 and 2 were volatile organic compounds (VOCs), specifically trichloroethene (TCE), tetrachloroethene (PCE), cis-1,2-dichloroethene (DCE), 1,1,2-trichloroethane (TCA), and 1,2-dichloroethane (DCA).

Mr. Smits introduced Mr. Wanyoike to present the remainder of the presentation. Mr. Wanyoike explained that he would provide a brief summary of IRP Site 1 and its current status in the CERCLA cleanup process.

Slide 5 – Presents a site map of IRP Site 1. The map shows the different areas of the EOD range.

Slide 6 – Shows the current status of IRP Site 1 and IRP Site 2 in the CERCLA cleanup process. Mr. Wanyoike explained that the cleanup to address IRP Sites 1 and 2 Groundwater was further along in the CERCLA process than the cleanup to address IRP Site 1 Soil. Currently, IRP Site 1 Soil is in the FS phase where remedial (cleanup) alternatives are being evaluated to address the hazards/contaminants in

soil. He noted that IRP Sites 1 and 2 Groundwater is currently in the Remedial Action (RA) phase of the CERCLA process because cleanup actions to address contamination in groundwater have been implemented at these sites.

Slide 7 – Presents a timeline of the Remedial Investigation (RI)/FS for IRP Site 1 Soil and Groundwater prior to separation of the two media.

Mr. Wanyoike noted that the perchlorate concentrations in groundwater at IRP Site 1 were a result of jet-assisted take off (JATO) units, which were used at the site. Mr. Wanyoike explained that all previous investigations conducted at IRP Site 1 were evaluated and documented in a Phase II RI followed by a FS. He explained that after Agency comments on the Draft FS for both soil and groundwater at IRP Site 1 were received, the decision to address the two media (soil and groundwater) as separate entities was made.

Slide 8 – Presents a timeline for IRP Sites 1 and 2 Groundwater. Mr. Wanyoike explained the decision to address IRP Sites 1 and 2 Groundwater together was because the perchlorate-impacted groundwater originating from IRP Site 1 was comingling with VOC-impacted groundwater at IRP Site 2. Because treatment for perchlorate and VOCs was warranted, the decision to address groundwater at both sites was made. The slide also shows the steps leading to the Remedial Action (RA) implemented at IRP Sites 1 and 2.

Slide 9 – Presents a site map of IRP Sites 1 and 2 relative to one another.

Mr. Wanyoike reminded the RAB that the remedy selected for IRP Site 1 Groundwater is in-situ bioremediation (ISB), performance monitoring, and institutional controls (ICs) and that monitored natural attenuation and ICs was the remedy selected for IRP Site 2.

Mr. Zweifel asked why ICs were selected to treat groundwater at IRP Site 2. Mr. Wanyoike replied that ICs were an effective mechanism for controlling exposure and access to IRP Site 2 Groundwater. ICs also provide protection of the existing equipment, which includes the monitoring network. Furthermore, the ISB treatment being implemented at IRP Site 1 to address the perchlorate is also effective in treating the VOC-impacted groundwater at IRP Site 2; he added that the RAs at both sites complement each other.

Slide 10 – Presents the status of the IRP Sites 1 and 2 Groundwater. The slide also presents the next steps for IRP Sites 1 and 2 Groundwater.

Mr. Hersh asked why the same proactive approach implemented at IRP Site 1 was not used at IRP Site 2. Mr. Wanyoike replied that the decision to use ISB only at IRP Site 1 was made because the VOC concentrations at IRP Site 2 were lower than the perchlorate concentrations at IRP Site 1. In addition, the permeable reactive barrier installed near the station boundary has been effective in degrading the VOC concentrations at IRP Site 2. He noted that, essentially, there is an active remedy at both locations.

Mr. Zweifel asked how long the process of chemical degradation would take. Mr. Wanyoike replied approximately 20 to 30 years.

Mr. Liss asked how often the food-grade substrate would need to be injected to be most effective in degrading the perchlorate. Mr. Wanyoike replied that initially the number of injections was designed to be effective for a total of approximately 3 years. He explained that during this time, there was regular monitoring to determine how well the bugs were consuming the emulsified oil and at the same time, the contamination. Mr. Liss asked whether sugar was injected into the groundwater. Mr. Wanyoike replied that corn syrup was injected at IRP Site 1.

Slide 11 – Presents a summary of the fieldwork conducted to address IRP Site 1 Soil (synonymous with the vadose zone). Mr. Wanyoike referenced Slide 12 to show the investigations that have been conducted on the Adjacent Property.

Slide 12 – Presents an aerial photograph of the IRP Site 1 Vadose Zone/ Adjacent Property. The figure shows the Adjacent Property currently owned by the Irvine Company (Area A shown in green and Area C shown in blue), and the Orange County Flood Control District (Area B2 shown in yellow). The figure also shows the locations where MEC, composed mainly of 20-millimeter projectiles, was identified and removed from the Adjacent Property during the TCRA conducted in 2010.

Slide 13 – Presents an update on the IRP Site 1 FS. Mr. Wanyoike explained that, by incorporating the results from the TCRA conducted on the Adjacent Property, Remedial Action Objectives (RAOs) for IRP Site 1 Soil were developed. RAOs were developed to address the MEC- and naphthalene-impacted soils found at IRP Site 1 and MEC-impacted soil at the Adjacent Property.

Mr. Hersh asked whether the food-grade substrate injected into groundwater at IRP Site 1 would be effective in treating the naphthalene found in IRP Site 1 soil. Mr. Wanyoike replied that during the RI phase, naphthalene was not detected in groundwater IRP Site 1. Naphthalene was found only in soils at IRP Site 1 and not in IRP Site 1 groundwater.

Slide 14 – Presents the next steps for IRP Site 1 soil. Mr. Wanyoike explained that in November 2014 a Draft Final FS was submitted and is currently undergoing Agency review. Once responses to Agency comments are complete and have received Agency concurrence, a Final FS will be submitted.
Mr. Zweifel asked whether the RAB would be able to access comments and RTCs to the Draft Final FS. Ms. Rich replied that the Co-Chair and Subcommittee Chair receive DTSC comments and Navy RTCs. Mr. Zweifel requested that comments and RTCs be emailed to him. Ms. Rich replied that she would email Mr. Zweifel the information as requested. Mr. Wanyoike explained that comments and RTCs to the previous document are typically added as an attachment to the current document.

Slides 15 and 16 – Present a list of acronyms and an open forum for questions, respectively.

Mr. Wanyoike clarified that the TCRA was focused on these areas (Areas A, B1, and C) due to the higher probability of finding items within these areas. Area B2 has a lower probability since it is a retarding basin where the likelihood of finding items is much lower due to ongoing operations in this area. Mr. Zweifel asked why there are MEC detections found in Area C. Mr. Wanyoike replied there are only a few locations in Area C where MEC was detected. Mr. Chris Crompton, RAB member, reminded the Navy that one of comments made by the Orange County Flood District was to be cognizant of the fact that Area B2 is an area that is maintained by Orange County Flood District personnel. He noted that personnel access the area to maintain the as-built design of the flood retardant basin. Mr. Smits replied that the comment was considered when developing and evaluating alternatives in the FS. Mr. Wanyoike noted that various stakeholders, including the Irvine Company and the Orange County Flood District, were provided copies of the FS and have remained engaged in the review process.

Mr. Zweifel asked if metal detectors were used in Area A and whether excavations were conducted. Mr. Wanyoike replied that when MEC was detected by the metal detectors the area was excavated. Mr. Zweifel asked about the protocol followed for Areas B2 and C. Mr. Wanyoike replied that Area B2 was not evaluated, but that there will be an alternative in the FS to address Area B2.

Mr. Sullivan introduced Mr. Rogers to present the Second-Five Year Review Summary presentation.

Installation Restoration Program Second-Five Year Review Summary, Former MCAS El Toro

Mr. Rogers informed the RAB that a Five-Year Review presentation was provided in April 2014 when the review began and that an update on the review was presented in August 2014 to the RAB as the review was nearing completion. Mr. Rogers reminded the RAB that fact sheets summarizing the conclusion of Five-Year Review were available as handouts at tonight's meeting. Mr. Sullivan noted that the Fact Sheets were also being mailed to the MCAS El Toro mailing list.

Slide 1 – Presentation title.

Slide 2 – Presents an overview of topics to be covered.

Slide 3 – Presents the sites included in the Second Five-Year Review.

Mr. Rogers explained that Five-Year Reviews were required for sites where a remedy is in place and where there are hazards onsite above levels that prevent unrestricted or unlimited use of the site.

Slide 4 – Presents a site map showing locations of the IRP sites included in the Second Five-Year Review relative to Former MCAS El Toro.

Mr. Hersh asked about the source for the IRP Site 16 plume. Mr. Rogers replied that IRP Site 16 was the Former Fire Training Area.

Slide 5 – Presents the components of the Five-Year Review, including community involvement and notification, document review, data review and analysis, site inspections, interviews, and creation of protectiveness statements.

Slide 6 – Provides information on how a protectiveness determination is assigned to the sites. Mr. Rogers explained that Protectiveness Statements for each site are derived by conducting a technical assessment for each site. The technical assessment is conducted with the objective of answering three questions relating to (1) whether the remedy is functioning as intended by the decision document; (2) whether the exposure assumptions, toxicity data, and RAOs used during the remedy selection are still valid; and (3) whether any new information has come to light that could call into question the protectiveness of the remedy.

Mr. Rogers provided an example with regard to the possibility that the toxicity of a certain chemical of concern (COC) may have changed over the years. For example, if the toxicity of a COC has changed to be more toxic than originally thought, the remedial goals for that COC may no longer be appropriate. He added that these changes in toxicity level are considered when assessing a protectiveness statement for a site.

Mr. Rogers also provided an example of an instance where new information may come to light about a site. If a new well was installed or new construction at a site occurred, this is considered when assessing a protective statement because this change in site conditions has introduced potential exposure pathways at the site.

Slide 7 – Presents the site-specific information and protectiveness determination for each site.

Mr. Rogers explained that the following conclusions have been derived from this Five-Year Review: The remedies at all sites are functioning as intended; exposure assumptions, cleanup levels, and RAOs used at the time of remedy selection remain valid; no new information has come to light that could question the

protectiveness of the remedy; and the remedies at all the sites are and continue to be protective of human health and the environment.

Slide 8 – Presents a schedule of submittals for the Second Five-Year Review.

Mr. Rogers noted that the First Five-Year Review for these sites was conducted in September 2009, which set the trigger for subsequent Five-Year Reviews. He explained that the Second Five-Year Review was issued in September 2014 and received concurrence from all the Regulatory Agencies. Mr. Rogers explained a copy of the Five-Year Review was available in the Information Repository at Heritage Park Regional Library and at the Administrative Record in San Diego. Mr. Zweifel asked if a copy was available on-line. Ms. Rich replied that the Final Five-Year Review should be available on the DTSC website (Envirostor). Ms. Hannon also replied the Final Five-Year Review should be available on the Regional Water Quality Control Board (RWQCB) website (Geotracker).

Slides 9 and 10 – Presents an open forum for questions and a list of acronyms, respectively.

Mr. Rogers asked whether there were any questions or comments. Ms. Aycock commented that the fact sheets, available as handouts at the meeting, provide an excellent summary of the sites included in this Five-Year Review and the protectiveness determination for each of the sites.

Mr. Sullivan introduced Mr. Smits to present the last presentation of the evening.

Subsurface Delineation of Waste Area C1 at Installation Restoration Program (IRP) Site 3, Former MCAS El Toro

Slide 1 – Presentation title.

Slide 2 – Presents an overview of topics to be discussed.

Slide 3 – Presents background information on IRP Site 3, which is known as the original landfill at Former MCAS El Toro, which was used from 1943 to 1955. Mr. Smits explained that the remedy or remedial action implemented at IRP Site 3 included consolidation of waste into the original landfill; installation of a synthetic flexible membrane liner (FML) and a 2-foot cover; construction of a surface water drainage system; and hydroseeding to promote natural vegetation.

Slide 4 – Presents an aerial photograph of the location of IRP Site 3 and the 100-foot buffer zone that represents the area requiring institutional controls (ICs).

Mr. Smits explained that the main restriction defined by ICs includes a prohibition of construction of any type of structure that would disturb the protective cover (flexible membrane liner) on top of the waste. Mr. Smits explained that as waste was being consolidated into the original landfill from the area designated as Waste Area C, waste was encountered up to the boundary with Irvine Boulevard.

Mr. Smits invited Mr. Johnson, CB&I, to present the remainder of the presentation.

Slide 5 – Presents a summary of the RA activities conducted at Waste Area C. Mr. Johnson explained that the excavation of Waste Area C could not proceed beyond its northeastern sidewall (bounded by Irvine Boulevard) because residual waste in the form of incinerator waste/debris was encountered up to where Irvine Boulevard intersects Waste Area C. He noted that this area adjacent to Waste Area C has been designated Waste Area C1.

Slide 6 – Presents a summary of the comprehensive document review conducted for Waste Area C1. Mr. Johnson explained that the most useful information was derived from what was observed in aerial photographs dating back to 1946.

Slide 7 – Presents an aerial photograph from 1946, which shows the footprint of Waste Area C and a line that represents the boundary of the current property boundary.

Slide 8 – Presents an aerial photograph from 1953, which shows a more visible disturbed area that extends north of the present property boundary. Mr. Johnson explained that the photograph also shows a natural depression in the area north of the line, which is an indication of excavation activities.

Slide 9 – Presents an aerial photograph from 1963, showing graded surfaces at Waste Area C and Waste Area C1.

Slide 10 –Presents an aerial photograph from 1991 at the completion of Irvine Boulevard. The aerial photograph shows Waste Area C1 investigation limits extending under Irvine Boulevard.

Slide 11 – Presents an aerial photograph from 2012 after RA activities were completed.

Slide 12 – Presents the current conditions at Waste Area C1, which warrant further delineation to verify site conditions.

Mr. Smits explained that the Navy could only estimate what underlies Irvine Boulevard from the aerial photograph. He explained that what is known at this point is that any potential waste that is under Irvine Boulevard is under concrete and asphalt. The objective of the proposed investigation is to find out if the residual waste extends beyond Irvine Boulevard to the north.

Slide 13 – Presents the project objectives and the proposed tasks to meet the objectives, including conducting utility clearances, conducting ground-penetrating radar (GPR) testing, and conducting cone penetration testing (CPT) to delineate the extent of residual waste along the northeastern edge of Irvine Boulevard. Mr. Johnson reiterated that the focus of the investigation was to delineate potential waste that may extend beyond Irvine Boulevard.

Slide 14 – Presents a figure showing the planned field activities to delineate the extent of residual waste at Waste Area C1. The figure shows the area where geophysical activities will take place and where CPT will be implemented. The figure also shows potential locations for step-out CPT to delineate the residual waste at Waste Area C1 and background CPT locations as a reference to the natural lithology in this area.

Slide 15 – Presents a summary of the geophysical imaging to be conducted at Waste Area C1.

Slide 16 – Presents a summary of CPT and the advantages of this technology for use at Waste Area C1. Mr. Johnson explained that CPT would provide real-time data, which would allow the Navy to step-out to another location while crews are onsite. In addition, he noted that CPT eliminates drill cuttings and the need to address investigation derived waste (IDW).

Slide 17 – Presents the requirements for reporting, including a Technical Memorandum to document the results of the investigation leading to a path forward.

Mr. Zweifel asked whether horizontal drilling beneath Irvine Boulevard was considered as an alternative to the CPT being proposed for Waste Area C1. Mr. Johnson replied that horizontal drilling beneath Irvine Boulevard would provide only information that is currently known, i.e., that residual waste is under Irvine Boulevard. The objective is to determine the extent of residual waste beyond Irvine Boulevard.

Mr. Liss asked about the timeframe for completing this work. Mr. Johnson replied by providing a timeline for document submittals, as presented in Slide 18. He explained that fieldwork is expected to take about 2 weeks to complete. To augment, Mr. Smits replied that there would be no wait time for samples.

Mr. Zweifel asked whether the Navy received any Agency comments on the Work Plan. Mr. Johnson replied they have not yet received all of the comments.

Mr. Crompton noted that a key component to the success of this investigation is to know where the utilities are relative to the residual waste. He asked whether the Navy will rely solely on as-builts for Irvine Boulevard from the base or whether this information will be used in conjunction with the geophysical technologies that the Navy is proposing. Mr. Johnson replied that they would rely on both existing as-built surveys and the proposed geophysics. Further, existing utilities along the Irvine Boulevard corridor will be considered when evaluating data obtained from CPT. Mr. Crompton noted that many subsurface anomalies may be detected as a result of the investigation that would be difficult to reconcile. Mr. Johnson replied that if this is the case, a more invasive investigation would be recommended as the next path forward.

Mr. Zweifel asked when fieldwork is expected to begin. Mr. Johnson replied they were hoping to be in the field sometime in late April to May 2015.

Slide 18 – Presents a schedule for deliverables.

Slide 19 – Presents a list of acronyms.

Mr. Smits and Mr. Johnson concluded their presentation and Mr. Sullivan resumed with the subject of the updated RAB Operating Procedures.

RAB Operating Procedures Update:

Mr. Sullivan explained that he sent out electronic copies of the RAB Operating Procedures to the RAB members for comment and had additional hard copies with him at tonight's meeting. He asked whether the RAB members wanted to have a conference call to discuss any comments they may have on the updated Operating Procedures.

Mr. Zweifel asked what the Navy expects from the RAB members. Mr. Sullivan replied that the Navy is looking for any comments or questions on the proposed updates to the 1999 Operating Procedures. The purpose of the updates is to make the procedures current since the last update in 1999. He explained that some of the citations and organization names have changed since 1999 and part of the update was to make this information current. He asked the RAB to please provide either he or Mr. Woodings with any comments or questions they may have on the updated Operating Procedures.

MEETING EVALUATION AND SUGGESTIONS FOR FUTURE MEETING TOPICS:

Mr. Sullivan opened the floor to the meeting evaluation and suggestions for future meeting topics.

Mr. Zweifel requested an update to IRP Site 3 and IRP Sites 1 and 2. Ms. Rudolph noted that she would like an explanation as to why it has taken this long to address IRP Site 1 Soil. Ms. Arnold replied that a detailed overview of the previous investigations and associated documentation was provided during the RAB presentation and she would be more than happy to discuss the timeline of events for IRP Site 1 Soil with Ms. Rudolph after the meeting.

Mr. Sullivan reminded the RAB to watch for information on a RAB tour in June 2015 and he reminded the RAB that the next scheduled meeting would take place in August 2015. Mr. Sullivan reminded

attendees to sign the sign-in sheets and make sure contact information is current. The meeting was adjourned at 08:40pm.

LIST OF HANDOUTS PROVIDED AT THE MEETING:

Presentation Slides:

- Project Update, Installation Restoration Program (IRP) Site 1 Soil and IRP Sites 1 and 2 Groundwater, Former MCAS El Toro
- Installation Restoration Program Second Five-Year Review Summary, Former MCAS El Toro
- Subsurface Delineation of Waste Area C1 at Installation Restoration Program (IRP) Site 3, Former Marine Corps Air Station El Toro, Irvine, CA

Former MCAS El Toro RAB Meeting Agenda for 25 February 2015

Public Notice for the 25 February 2015 RAB Meeting

Aerial Map of Former MCAS El Toro

RAB Application

RAB Mailing List Application

Former MCAS El Toro Where to Get More Information

Copies of the RAB meeting summaries and handouts are available at the Information Repository for Former MCAS El Toro located in the Government Publication Section of the Heritage Park Regional Library, in Irvine, California. Library hours are 10:00 a.m. to 9:00 p.m. Monday through Thursday; 10:00 a.m. to 5:00 p.m. Friday and Saturday; and 12:00 p.m. to 5:00 p.m. Sunday. The library phone number is (949) 936-4040. In addition, copies of the meeting minutes and handouts are available in the CERCLA Administrative Record File.

Final meeting summaries from previous RAB meetings can be found on the internet at the Navy BRAC Program Management Office (PMO) website: http:///www.bracpmo.navy.mil/

INTERNET SITES:

Navy and Marine Corps Internet Access:

BRAC PMO website (includes RAB meeting minutes): http://www.bracpmo.navy.mil/

Department of Defense – Environmental Cleanup Home Page Website:

http://www.dtic.mil/envirodod/

USEPA:

Homepage: http://www.epa.gov

Superfund information: http://www.epa.gov/superfund

National Center for Environmental Assessment: http://www.epa.gov/ncea

Federal Register Environmental Documents: http://www.epa.gov/federalregister

California Agencies:

California Environmental Protection Agency Homepage: http://www.calepa.ca.gov

DTSC: http://www.dtsc.ca.gov

Department of Health Services, reorganized into the Department of Health Care Services and the Department of Public Health: http://www.dhs.ca.gov

RWQCB: http://www.waterboards.ca.gov/santaana

Additional Websites: Reuse and Redevelopment

Orange County Great Park: http://www.ocgp.org

Great Park Conservancy: http://www.orangecountygreatpark.org

Reference Documents

Title 32 of the *Code of Federal Regulations*, Part 202: http://www.gpo.gov/fdsys/pkg/CFR-2011-title32-vol2/pdf/CFR-2011-title32-vol2-part202.pdf

Restoration Advisory Board Handbook: http://www.denix.osd.mil/rab/upload/RAB-Rule-Handbook_Final.pdf

FORMER MCAS EL TORO
RESTORATION ADVISORY BOARD MEETING

NAVY SIGN-IN SHEET

February 25, 2015

Name	Signature
Jim Sullivan, BRAC Environmental Coordinator and RAB Co-chair	
Content Arnold, Lead Navy RPM	
Marc P. Smits, Navy RPM	
Morgan Rogers, Navy PM	
Guy Chammas, Navy RPM	

FORMER MCAS EL TORO
RESTORATION ADVISORY BOARD MEETING
AGENCY AND RAB MEMBER SIGN-IN SHEET
February 25, 2015

Please sign in on the appropriate line. If your address and/or phone number has recently changed, help us update our records by writing your new information on the back of the sign-in sheet. Thank you.

Name	Signature	Name	Signature
Bob Woodings, Community Co-chair		Mary Aycock, U.S. EPA	
Peter Hersh		Viola Cooper, U.S. EPA	
Mary Aileen Matheis		Patricia Hannon, RWQCB	
Chris Crompton		Jennifer Rich, DTSC	
Marcia Rudolph, Subcommittee Chair		Scott Warren, DTSC	
Roy Herndon		Randy Kiefer	
Desire' Chandler			
Donald Zweifel			

GUEST SIGN IN

FORMER MCAS EL TORO

RAB MEETING- SIGN-IN SHEET

February 25, 2015

NAME ***PLEASE PRINT CLEARLY***	*AFFILIATION (community member/resident, elected official, agency official)*	*MAILING ADDRESS*	*PHONE EMAIL FAX*	*SHOULD WE ADD YOU TO THE MAILING LIST? (yes/no)*	*NEW TO MEETING? HOW DID YOU HEAR ABOUT THIS MEETING*
PETER HERCK	RAB MEMBER	ON FILE	ON FILE	–	–
CHRIS CRAMPTON	COUNTY OF ORANGE RAB MEMBER	"	"		
BOB WOODINGS	RAB CO CHAIR	"	"	–	–

GUEST SIGN IN

FORMER MCAS EL TORO
RAB MEETING- SIGN-IN SHEET
February 25, 2015

NAME ***PLEASE PRINT CLEARLY***	*AFFILIATION (community member/resident, elected official, agency official)*	*MAILING ADDRESS*	*PHONE EMAIL FAX*	*SHOULD WE ADD YOU TO THE MAILING LIST? (yes/no)*	*NEW TO MEETING? HOW DID YOU HEAR ABOUT THIS MEETING*
Dhananjay Rawal	ES Inc	on file	—	—	—
HARVEY LISS	COMMUNITY	ON FILE			
LARS OLDEWAGE	IRWD			—	—
CHRIS JOHNSON	CB&I	ON FILE	—	—	—
CRISPIN WANYOIKE	AECOM	on file			
Cliff Wallace	City of Irvine	on file	—	—	—

Project Update
Installation Restoration Program (IRP) Site 1 Soil and IRP Sites 1 and 2 Groundwater
Former MCAS El Toro

Restoration Advisory Board (RAB) Meeting

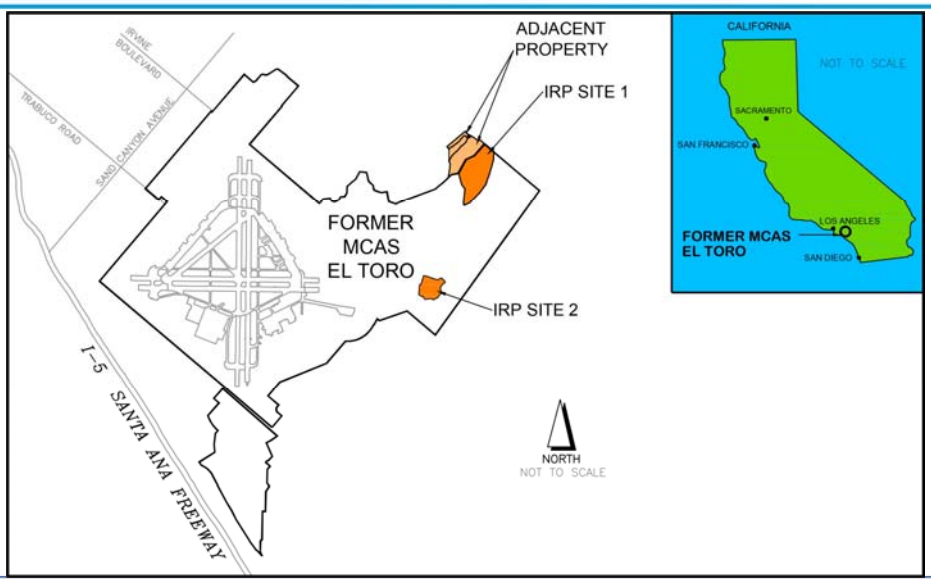
Marc Smits, PE (Navy Remedial Project Manager)
Crispin Wanyoike, PE (AECOM Project Manager)

February 25, 2015

Presentation Overview

- **Site Locations**
- **Site Descriptions**
- **CERCLA Process Timeline**
- **Groundwater Status**
- **Vadose Zone Remedy Selection Status**

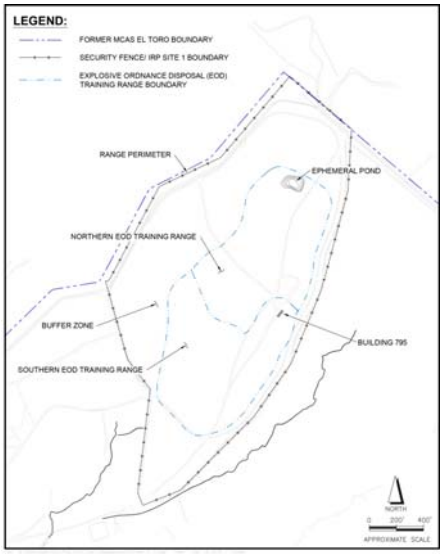
Site Locations



Site Descriptions

- **IRP Site 1**
  - Former Explosive Ordnance Disposal (EOD) Training Range
  - EOD training exercises were conducted from 1952 until Station closure in 1999
  - Munitions and Explosives of Concern (MEC) found in soil
  - Small area of naphthalene-impacted soil
  - The groundwater chemical of concern (COC) is perchlorate
- **IRP Site 2**
  - Former landfill known as Magazine Road Landfill
  - IRP Site 2 was an operational landfill from the late 1950s until about 1980
  - Groundwater COCs include the following volatile organic compounds (VOCs): trichloroethene, tetracholorethene, cis-1,2-dichloroethene, 1,1,2-trichloroethane, and 1,2-dichloroethane

IRP Site 1



CERCLA Process

IRP Site 1 Vadose Zone Soil

IRP Sites 1 and 2 Groundwater

NPL Listing	Remedial Investigation (RI)	Feasibility Study (FS)	Proposed Plan (PP) & Public Comment	Record of Decision (ROD)	Remedial Design (RD)	Remedial Action (RA)
If applicable, site is listed on the U.S. EPA National Priorities List (NPL)	The RI identifies the nature and extent of contamination	The FS develops and evaluates remedial (cleanup) alternatives for contamination	The public has an opportunity to comment on the proposed cleanup plan and other alternatives	The selected remedy and responses to public comments are documented in the ROD	Detailed plans and specifications for the remedy are developed	The RD for cleanup is implemented

→ Process →

Site 1 Remedial Investigation/Feasibility Study Timeline

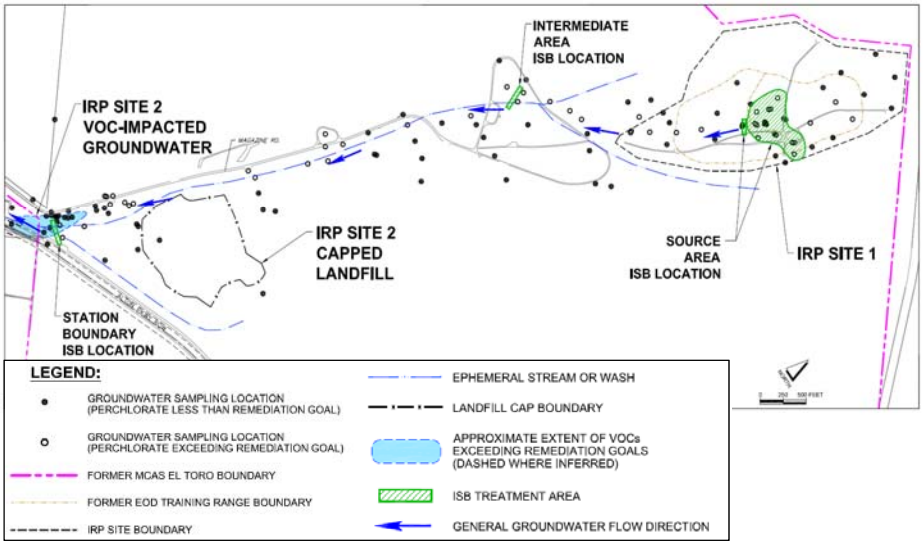
- **1985** **Initial Assessment Survey**
- **1993** **Phase I Remedial Investigation (RI)**
- **1998** **Verification of Perchlorate (groundwater)**
- **1998** **MEC Range Identification and Assessment**
- **1999** **Perchlorate Verification Investigation (soil)**
- **2000** **Radiological Assessment**
- **2002-2006** **Phase II RI**
- **2007** **Draft Feasibility Study (FS) (Soil and Groundwater)**

Site 1 and 2 Groundwater Timeline

Following the Site 1 Draft FS for Soil and Groundwater

- Soil and Groundwater Remedy Selection Process was separated
- Site 1 Groundwater combined with Site 2 Groundwater due to the commingling of Perchlorate and VOCs at Site 2
  - –Site 1 and 2 Groundwater Feasibility Study issued – April 2011
  - –Site 1 and 2 Groundwater Proposed Plan issued – April 2011
  - –Site 1 and 2 Groundwater Record of Decision issued – January 2012
  - –Site 1 and 2 Groundwater Remedial Action Work Plan issued – January 2014
  - –Site 1 and 2 Remedial Action Fact Sheet – February 2014
  - –Site 1 and 2 Groundwater Remedial Action Construction completed – June 2014

IRP Site 1 and 2 Groundwater



Sites 1 and 2 Groundwater Remedial Action Status

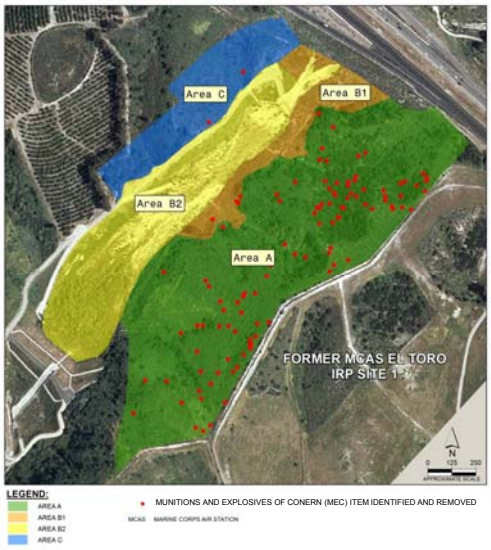
- **Remedial Action Implementation Status**

Remedial Action Activity	Status
Baseline Monitoring	Completed May 2014
Substrate Injection	Completed June 2014
Performance Monitoring	Started June 2014 and Ongoing
Reporting	Ongoing

- **Next Steps**
  - Continue Performance Monitoring
  - Interim Remedial Action Completion Report – 2015
  - Long Term Monitoring Plan

Following the Site 1 Draft FS for Soil and Groundwater

- Adjacent Property Area Investigation
  - Additional Munitions Characterization was conducted in 2008
  - Time Critical Removal Action (TCRA) was implemented in 2010 to address the immediate munition hazard on the Adjacent Property
  - Removal Action Report was issued in August 2011
  - Results from the TCRA were incorporated into the IRP Site 1 Soils Feasibility Study



Site 1 Soil Feasibility Study Update

- **Revised Draft Vadose Zone FS Report issued in September 2012**
  - Remedial Action Objectives
    - MEC in soil at IRP Site 1 and the Adjacent Property:
      - Reduce potential for exposure to MEC that would result in unacceptable hazards to future receptors at IRP Site 1 and at the Adjacent Property
    - Naphthalene-impacted soil at IRP Site 1:
      - Reduce potential for exposure to naphthalene-impacted soil that would result in unacceptable risks to future receptors at IRP Site 1
  - FS includes remedial alternatives analysis for the following:
    - IRP Site 1:
      - MEC-Impacted Soil
      - Naphthalene-Impacted Soil
    - Adjacent Property:
      - MEC Impacted-Soil
- **Revised Draft Final Vadose Zone FS was issued in November 2014**

IRP Site 1 Soil Next Steps

- **Final Feasibility Study**
- **Proposed Plan**
- **Conduct Public Meeting**
- **Record of Decision**

ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Contaminants of Concern
EOD	Explosive Ordnance Demolition
FS	Feasibility Study
IRP	Installation Restoration Program
MEC	Munitions and Explosives of Concern
MCAS	Marine Corps Air Station
NPL	National Priorities List
PE	Professional Engineer
PP	Proposed Plan
RA	Remedial Action
RD	Remedial Design
RAB	Restoration Advisory Board
RI	Remedial Investigation
ROD	Record of Decision
TCRA	Time-Critical Removal Action
VOCs	Volatile Organic Compounds

Questions?

Installation Restoration Program Second Five–Year Review Summary Former MCAS El Toro, California

Restoration Advisory Board (RAB) Meeting

Morgan Rogers, PE (Navy Project Manager)

2/25/2015

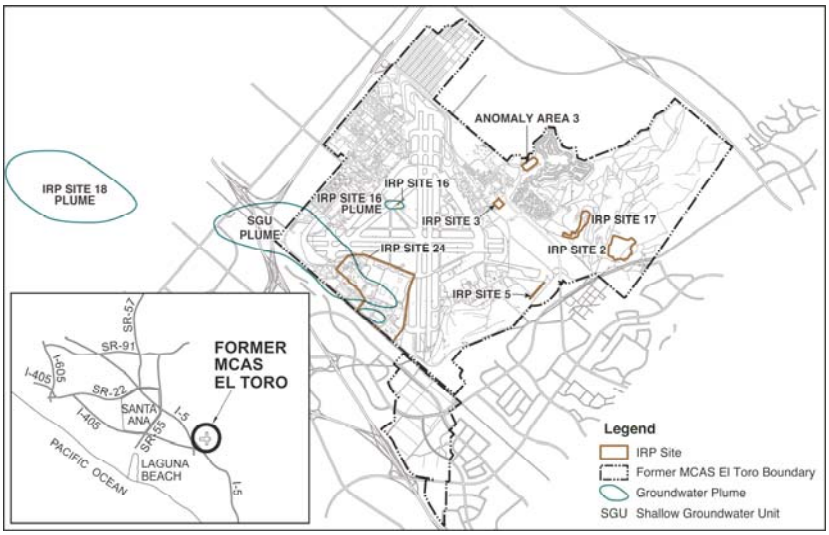
Presentation Overview

- **Sites – Second Five-Year Review & Locations**
- **Components of the Five-Year Review**
- **Site Specific Findings & Protectiveness Statements**
- **Schedule**
- **Questions**
- **Acronyms**

Sites – Second Five-Year Review

- **The Department of the Navy (DoN) has completed its Second Five-Year Review of in-place remedial actions at Former Marine Corps Air Station (MCAS) El Toro. The Final Report was issued on September 24, 2014.**
- **Sites included:**
  - IRP Sites 2 and 17
  - IRP Sites 3 and 5
  - IRP Site 16
  - IRP Sites 18 and 24
  - Anomaly Area 3 (AA3)

Sites - Locations



Components of the Five-Year Review

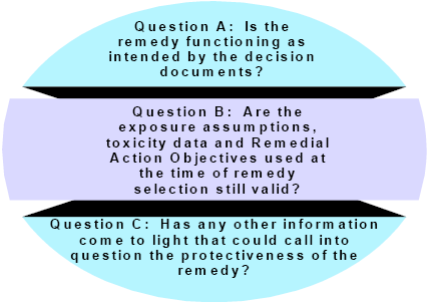
The fundamental purpose of a Five-Year Review is to determine whether the remedy at a site remains protective of human health and the environment.

Figure 1: Components of the Five-Year Review Process

Components of the Five-Year Review

Protectiveness Determination:

- A technical assessment is performed with the objective of answering the following three questions:



Site Specific Findings & Protectiveness Statements

- The remedies at all Sites are functioning as intended by their Records of Decision
- Exposure assumptions, cleanup levels, and Remedial Action Objectives used at the time of the remedies are still valid
- No other information has come to light that could call into question the protectiveness of the remedies
- Remedies are protective of human health and the environment

Schedule

- Issued Final First Five-Year Review on September 30, 2009
- Issued Final Second Five-Year Review on September 24, 2014
  - –Agencies concurred with Findings and Protectiveness Statements
- Issued Second Five-Year Review Fact Sheet Summary on February 19, 2015
- Issue Final Third-Year Review by September 30, 2019

Questions?

Acronyms

BRAC	Base Realignment and Closure
DON	Department of the Navy
IRP	Installation Restoration Program
MCAS	Marine Corps Air Station
NAVFAC	Naval Facilities Engineering Command
PE	Professional Engineer
RAB	Restoration Advisory Board
PMO	Program Management Office

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Former MCAS El Toro

Subsurface Delineation of Waste Area C1 at Installation Restoration Program (IRP) Site 3

Former Marine Corps Air Station El Toro, Irvine, CA

Marc P. Smits P.E., Navy Base Realignment and Closure (BRAC) Remedial Project Manager

Christopher E. Johnson, CB&I Federal Services LLC Project Manager

RESTORATION ADVISORY BOARD (RAB) MEETING

25 February 2015

OVERVIEW

- BACKGROUND
- HISTORICAL AERIAL PHOTOGRAPHS
- CURRENT CONDITIONS
- OBJECTIVES
- PLANNED FIELD ACTIVITIES
- REPORTING
- SCHEDULE
- ACRONYMNS

BACKGROUND

IRP Site 3

- Consolidated waste into the Main Landfill at IRP Site 3
- Installed a synthetic flexible membrane liner (FML)
- Placed a 2-foot soil cover over the FML
- Constructed surface water drainage systems along the boundary of the landfills
- Placed hydroseed on the landfill covers to promote growth of native grass for erosion control

BACKGROUND
IRP SITE 3 – SITE PLAN

BACKGROUND

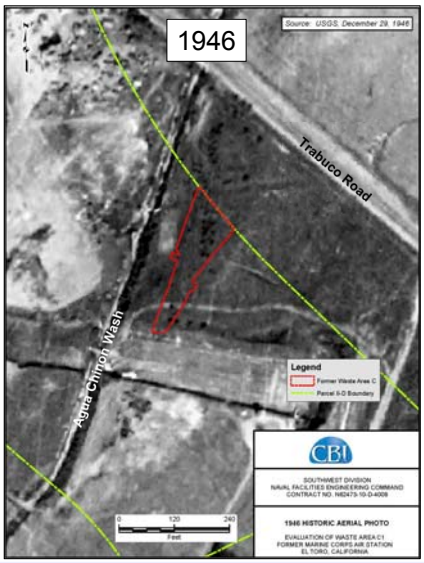
Remedial Action (RA) Activities

- Residual incinerator waste/debris was visually identified along the northeast side wall of the former Waste Area C approximately 8 to 9 feet below the current ground elevation of Irvine Boulevard
- Excavation could not proceed farther northeast, at the boundary to Irvine Boulevard
- This area adjacent to the former Waste Area C has been designated as Waste Area C1 and is the area being evaluated

BACKGROUND

- The Navy conducted a comprehensive document review to gather all available information regarding the potential extent of waste/debris at Waste Area C1:
  - Navy records
  - Previous investigation and RA activities
  - Over 29 sets of aerial photographs dating from 1946 to 2013
  - Base construction and utility drawings
  - City of Irvine Grading/Construction Plan for Irvine Boulevard and Irvine Ranch Water District Pipeline Construction Plan

HISTORICAL AERIAL PHOTOGRAPHS



HISTORICAL AERIAL PHOTOGRAPHS

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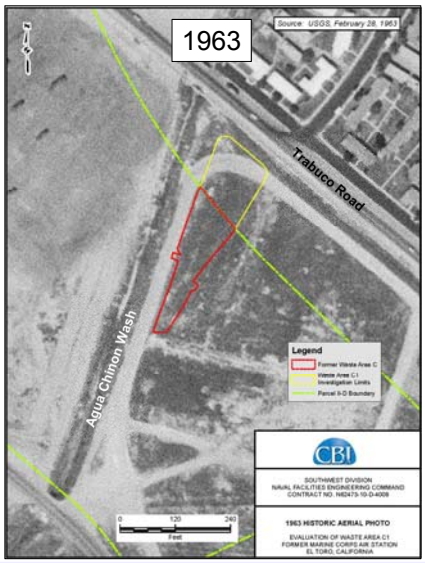
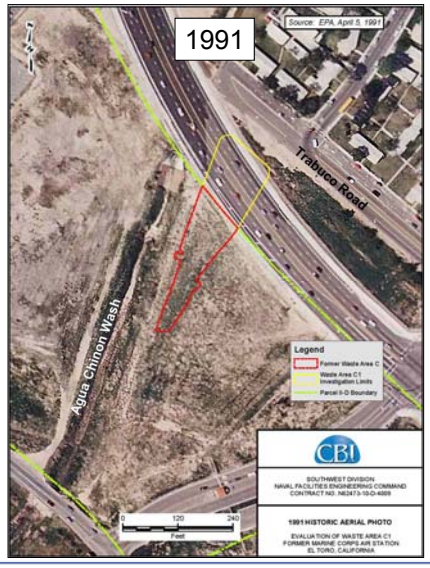


HISTORICAL AERIAL PHOTOGRAPHS



HISTORICAL AERIAL PHOTOGRAPHS

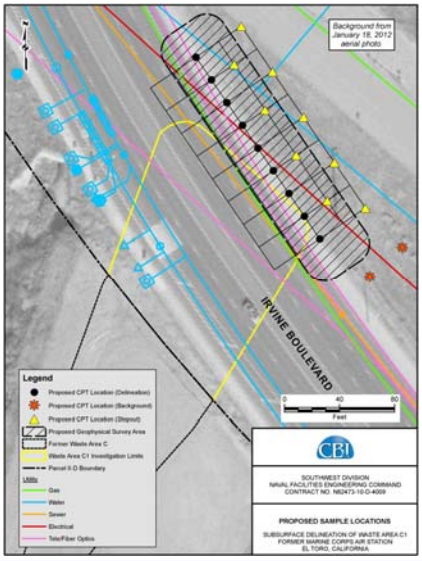
CURRENT CONDITIONS

- Based on information gathered from the document review, Waste Area C1 is estimated to be:
  - Approximately 125 feet wide by 140 feet long
  - Waste/debris may range from 1 to 4 feet thick
  - Top of waste was confirmed to be approximately 8 to 9 feet below the current ground elevation of Irvine Boulevard
- Current information indicates that waste is covered by Irvine Boulevard and at depths of 8 to 9 feet below the roadway
- Delineation activities intended to verify site conditions

OBJECTIVES

- The objective of this work is to conduct subsurface delineation activities at Waste Area C1 to determine the extent of waste, if any, along the northeast edge of Irvine Boulevard
- The scope of work will include the following tasks:
  - Conduct traditional utility clearance activities to evaluate the presence of subsurface utilities prior to any intrusive activities
  - Conduct ground-penetrating radar (GPR) and an electrical resistivity survey to provide an initial evaluation of waste, if any, along the northeast edge of Irvine Boulevard
  - Conduct cone penetration technology (CPT) testing to determine the extent of waste, if any, along the northeast edge of Irvine Boulevard

PLANNED FIELD ACTIVITIES
PROPOSED GEOPHYSICAL AREA/CPT TEST LOCATIONS



PLANNED FIELD ACTIVITIES
GEOPHYSICAL IMAGING

- GPR utilizes high-frequency radio waves that show objects or boundaries based on differences in the reflected signal
- Electrical resistivity is a technique that involves passing an electrical current into the ground at on point and measuring the resulting potential difference at another point.
- Metallic objects/anomalies within the subsurface will produce a higher relative resistivity
- The results of the geophysical imaging will be used to help direct the placement of the CPT locations

PLANNED FIELD ACTIVITIES
CONE PENETRATION TECHNOLOGY

- CPT is a process whereby soil characteristics are determined when a cone penetrometer is driven into the subsurface
- The type of cone probe that will be used will be the piezo/conductivity cone penetrometer
- Advantages of CPT:
  - Continuous log of the site lithology
  - Real-time data collection/interpretation (enable field changes)
  - Identification of thin seams and layers
  - Elimination of drill cuttings
  - Site remains relatively undisturbed

REPORTING

- Prepare a Technical Memorandum documenting the results and findings from the subsurface delineation activities
- The Technical Memorandum will provide recommendations regarding the path forward

SCHEDULE

Receive BCT Comments on Work Plan	February 2015
Prepare/Issue Final Work Plan	March/April 2015
Field Activities	April/May 2015
Prepare/Issue Draft Technical Memo	June 2015

ACRONYMS

BRAC	Base Realignment and Closure
CPT	Cone Penetration Technology
FML	Flexible Membrane Liner
GPR	Ground-Penetrating Radar
IRP	Installation Restoration Program
PE	Professional Engineer
RA	Remedial Action
RAB	Restoration Advisory Board
RD/RA	Remedial Design/Remedial Action