



Final FORMER MARINE CORPS AIR STATION (MCAS) El Toro 114th Restoration Advisory Board (RAB) Meeting Summary



Meeting Location: Irvine City Hall, 1 Civic Center Plaza, Irvine, California

Meeting Date/Time: 26 April 2016/6:35 p.m. to 7:47 p.m.

Meeting Summary Prepared by: Tony Guiang, Accord MACTEC 8A Joint Venture (AM8AJV)

ATTACHMENTS:

Sign-In Sheets for the 26 April 2016 RAB Meeting

Presentation Slides:

- Hangar 296 and Associated Piping Draft Radiological Site Inspection Report, Former Marine Corps Air Station El Toro, Irvine, CA

ATTENDEES: A total of 19 people attended the RAB meeting:

Navy: Marc P. Smits, Base Realignment and Closure (BRAC) Environmental Coordinator (BEC) and RAB Co-Chair; Content Arnold, Lead Remedial Project Manager (LRPM); and Guy Chammas, RPM.

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; and Chris Crompton.

Other Attendees: Crispin Wanyoike, AECOM Technology Corporation; Debby Platt, City of Irvine; Sree Akkenapally, Cabrera Insight JV (CIJV); Scott Hay, CIJV; Rob Reitenour, Lowe Enterprises; Jim Werkmeister, FivePoint Communities, Inc.; Mark Cutler, Tetra Tech; Peggy Falcon and Mike Scottsdale, community members; and Tony Guiang and Teresa Toye, AM8AJV.

WELCOME/PLEDGE/INTRODUCTIONS/AGENDA REVIEW:

Mr. Marc P. Smits introduced himself as the new BEC and Navy RAB Co-Chair and welcomed everyone to the Former Marine Corps Air Station (MCAS) El Toro 114th RAB meeting. Mr. Smits led the Pledge of Allegiance.

Mr. Smits took a moment to remember the passing of Ms. Marcia Rudolph, who was an active member of the RAB and the Technical Sub-committee Chairperson. Mr. Smits noted that Ms. Rudolph was an active member of the RAB from its very beginning. He acknowledged Ms. Rudolph's thoughtfulness and active participation throughout the years. He noted she was always very interested and passionate about the Navy's cleanup effort at Former MCAS El Toro. He invited others to share their thoughts. Several meeting attendees spoke about Ms. Rudolph in remembrance.

Ms. Content Arnold (Navy LRPM) stated that Ms. Rudolph was one of the founding members of the RAB and she remembered how Ms. Rudolph always announced this at the start of each RAB meeting. Ms. Arnold noted that an integral part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process was involving the community in cleanup efforts and that seeing the dedication from community members, such as Ms. Rudolph, made her job enjoyable. She noted that Ms. Rudolph attempted to attend every RAB meeting and missed very few. Further, her passion and dedication were evident in the way she participated in the review of documents and the extra steps she took in working and communicating with other members of the community about the Navy's environmental cleanup efforts. In

closing, she noted that Ms. Rudolph was going to be missed and she expressed the Navy's gratitude for her years of participation as well as all the RAB and community members that set aside the time to hear what is going on in their community.

Ms. Mary Aycock (USEPA) noted that the current night of the RAB meeting was one of the first nights that a Sub-committee meeting with the community has not taken place (because of Ms. Rudolph's absence). She remembered how Ms. Rudolph would always bring the latest Navy documents to discuss during the Sub-committee meetings. The meetings involved spending an hour talking about her general concerns regarding the Navy's environmental cleanup effort and the concerns the community had on the same topics. She expressed the USEPA's gratitude for Ms. Rudolph's dedication and participation in the RAB throughout the years. She also thanked the current RAB members who continue to support the RAB.

Mr. Bob Woodings stated that Ms. Rudolph was a Lake Forest resident and member of the city council for many years and that she had a strong public relations spirit and wanted to do the best for all the people all the time. He added that Ms. Rudolph was very passionate about her role as a RAB member.

Ms. Peggy Falcon, community member, stated she also knew Ms. Rudolph. Ms. Falcon went to all the council meetings in Lake Forest and she noted that Ms. Rudolph was always so involved with RAB and community issues and was very much loved.

Mr. Smits 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 remaining 2016 RAB meeting (31 August 2016).

Mr. Bob Woodings (Community Co-Chair) received excused absences for Mr. Peter Hersh, Mr. Roy Herndon, Ms. Desire Chandler, and Mr. Donald Zweifel.

OLD BUSINESS:

Announcements and Review of Action Items:

Mr. Smits opened the floor for discussion of old business and announcements. No old business was brought up at this time and no new announcements were made by the RAB meeting attendees.

Sub-committee Meeting Report:

No Sub-committee meeting took place prior to the RAB meeting. Mr. Smits explained that the Navy would determine the path forward regarding future Sub-committee meetings. Further, the election of a new Sub-committee Chairperson to replace Ms. Rudolph would be discussed at the next RAB meeting. He added that the Sub-committee Chairperson would receive copies of Navy documents for discussion during Sub-committee meetings with the regulatory agencies.

NEW BUSINESS:

Mr. Smits mentioned one of the new topics on the agenda was a discussion of RAB Co-Chair elections. However, because there were only two RAB members in attendance, the topic would be tabled for the next RAB meeting. To augment, Mr. Woodings explained that he would want to wait until other RAB members were present to discuss Co-Chair elections. Mr. Woodings took the opportunity to invite the public and those in attendance to think about becoming RAB members. Mr. Smits stated that RAB Co-Chair elections would be saved for the next meeting. He added that in accordance with the MCAS El Toro charter, RAB Co-Chair elections are a process that need to be implemented periodically although Mr. Woodings has been doing a great job over the past years.

Mr. Smits explained that in place of the RAB meeting previously scheduled for 24 August 2016, a RAB site tour will take place on Wednesday, 31 August 2016. He noted that the site tour has always been a well-attended activity and it gives people a good idea of how the cleanup effort is progressing relative to property transfer.

Lastly, Mr. Smits explained the Navy was close to sending out a Proposed Plan (PP) for Installation Restoration Program (IRP) Site 1 soil and therefore is anticipating holding a Public Meeting within the next month. As this date becomes more

definitive, the Navy will send out an email to the RAB to provide them details of the Public Meeting. He explained that the purpose of the Public Meeting was to announce the proposed remedial alternatives for Site 1 soil.

Mr. Smits invited the Regulatory Agency representatives to provide a brief update.

REGULATORY AGENCY UPDATE:

Ms. Mary Aycock (USEPA):

Ms. Aycock congratulated Mr. Smits on the promotion to his new position as the Former MCAS El Toro BEC. She explained that the USEPA has been reviewing and working on reviewing the Draft IR Site 1 PP, which will ultimately lead to a Record of Decision (ROD). Currently, the Navy is trying to resolve all the Regulatory Agency comments on the PP. She explained this was the last ROD for Former MCAS El Toro and that this was a big milestone for USEPA and the Navy. Ms. Aycock stated that the other cleanup project that the USEPA was currently focused on was the decommissioning of Hangar 296. She noted that when the Hangar 296 project first started, she was the remedial project manager for the Santa Susana Field Laboratory and Mr. Scott Hay was an advisor for that project. She explained that the USEPA was happy to see Mr. Hay involved in the Hangar 296 project and that the USEPA was looking forward to reviewing the Site Inspection (SI)/Final Status Survey (FSS) Report. Ms. Aycock noted that Mr. Smits was the RPM of Hangar 296 when the USEPA participated in a field site inspection of the hangar.

Ms. Jennifer Rich (DTSC):

Ms. Rich stated that in the eight months since the last RAB meeting, the Navy has kept the DTSC very busy. DTSC has commented and concurred on a number of documents. Ms. Rich noted that they were currently overseeing fieldwork occurring at Installation Restoration Plan (IRP) Site 3, Waste Area C1. Ms. Rich also discussed a milestone that happened in the last 8 months: DTSC concurrence on Finding of Suitability to Transfer (FOST) #8. She explained that FOST #8 comprises 40 acres of property now suitable for transfer. Ms. Rich noted that DTSC was also working on reviewing three land covenants and several project environmental review forms (PERFs).

Ms. Patricia Hannon (RWQCB)

Ms. Hannon stated that the RWQCB has reviewed the same documents as Ms. Aycock and Ms. Rich. Ms. Hannon noted that she has been working on closure documents for underground storage tank (UST) sites. Recently, the RWQCB issued closure on the sites that included the Truck Fueling Areas and Tank Farms 5 and 6. Currently, Ms. Hannon explained that she was working on the closure document for Tank Farm 555, leaving UST Site 398 as the only remaining petroleum site at Former MCAS El Toro.

Upon completion of the Regulatory Agency updates, Mr. Smits invited Mr. Guy Chammas (Navy RPM) to provide the presentation of the evening.

PRESENTATION:

Mr. Chammas introduced himself as the Navy RPM for the Hangar 296 site. He noted that he was excited to be working on Former MCAS El Toro, in particular because he was born and raised in the Orange County area and he remembers what these areas looked like in the past. He explained that the Navy recently submitted the Draft SI/FSS Report for Hangar 296 to the Regulatory Agencies for review and comment. The report summarizes the findings and conclusions from the SI/FSS and the Navy's recommendations for Hangar 296.

Hangar 296 and Associated Piping Draft Radiological Site Inspection Report, Former Marine Corps Air Station El Toro, Irvine, CA

Slide 1 – Presentation title.

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

Slides 3 and 4 – Present a site location map for Former MCAS El Toro (Slide 3) and a map of where Hangar 296 is located within the industrial portion of Former MCAS El Toro (Slide 4).

Slide 5 – Presents a brief background of Hangar 296, including history and background of the two main areas (Radium Paint Room and two additional storage areas) where radiological materials were used and/or stored. Mr. Chammas

FINAL FORMER MCAS EL TORO RAB MEETING SUMMARY – (26 April 2016)

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explained that with respect to the size of Hangar 296, activities that took place in the former Radium Paint Room were limited to the northeastern corner of the hangar. Further, he noted that Hangar 297 was used during this investigation as a background or reference area.

Slide 6 – Shows the location of the former Radium Paint Room. The figure shows two different views (one old and one more recent) of the interior of Hangar 296. He explained that activities in the former Radium Paint Room were limited to refurbishment of aircraft parts and that they occurred from about April 1949 to December 1950 (approximately 19 months).

Slide 7 – Describes regulatory oversight and guidance. Mr. Chammas explained that the Navy worked closely with the Regulatory Agencies in developing the Work Plan and Sampling and Analysis Plan for conducting surveys at Hangar 296. In addition, the Navy also received internal radiological technical support from the Radiological Affairs Support Office throughout the project. Mr. Chammas noted that the Navy followed the protocol for radiological investigations in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM).

Slide 8 – Describes the Conceptual Site Model. Mr. Chammas explained that the main radionuclide of concern was radium-226 (²²⁶Ra). Further, he noted that strontium-90 (⁹⁰Sr) was also stored in two rooms on the first floor of Hangar 296. He explained that although ⁹⁰Sr was contained and no source for this contaminant was recorded, it was still evaluated and included as a radionuclide of concern during the surveys. The slide also summarizes all the areas within Hangar 296 investigated as part of the SI/FSS.

Slides 9 and 10 – Describe Objectives #1, #2, #3, and #4. The SI and subsequent FSS investigation at Hangar 296 were conducted to meet the four objectives. Mr. Chammas invited Mr. Scott Hay (CIJV) to continue the presentation.

Slide 11 – Title page for Objective #1. The first objective of the SI/FSS investigations is to determine whether Hangar 296 is suitable for unrestricted radiological release (URR).

Slide 12 – Presents the work performed to meet Objective #1. Mr. Hay explained that three types of measurements were collected to determine the presence of radiological contaminants inside Hangar 296, specifically, scans, static measurements, and swipe samples. He explained that scans were conducted by moving radiation detector equipment slowly over a large surface. He explained that this process allowed them to investigate a large area over a short amount of time. Mr. Hay explained that static measurements were collected by holding a radiation detector stationary at specified locations over a specific period of time. Static measurements were collected at random and biased locations, the latter of which were locations where it was more likely that radiation above background was present. He explained that swipe samples were collected at the same locations where static measurements were collected to determine whether any radiological material could come off from the surface. Mr. Hay noted that all data were evaluated in consultation with the Regulatory Agencies.

Slide 13 – Presents the 52 survey units (outlined in purple) investigated in Hangar 296. Mr. Hay explained that each survey unit was treated as a separate survey and the same number of samples were collected at each survey unit.

Slide 14 – Presents a photograph showing the footprint of a former wall in the former Radium Paint Room. The dashed red lines on the photograph show the boundary of the former wall, which had previously been removed.

Slide 15 – Presents a photograph of the post-remedial floor and walls in the former Radium Paint Room. Radiologically impacted wallboard was removed. To determine the depth of the radiological impacts in the concrete floor, a thin layer (about 1/8 inch) was scabbled (scraped off). The photo shows the cut-out portion of the wall and the area on the concrete that was scabbled. He noted that all radiologically impacted materials (floor tiles, wallboard, scabbled concrete) were transported off site for disposal as low-level radioactive waste.

Slide 16 – Presents a photograph of the Three-Dimensional Indoor Survey System (3-DISS) with six detectors at its base. This instrument was used during the investigations at Hangar 296.

Slides 17 and 18 – Present photographs of another piece of equipment used for scanning in smaller areas and a close-up of the detector, respectively.

Slide 19 – Presents the conclusions and recommendations derived upon completion of the SI/FSS. The conclusions from the investigation/remediation were that residual radiation measurements were comparable to background levels found in Hangar 297, and that there were no unacceptable levels of radiation remaining on building surfaces throughout the hangar. The Navy's recommendation was no further action (NFA) and URR for the entire Hangar 296 surface.

Slide 20 – Title page for Objective #2. The second objective of the SI/FSS is to determine whether the piping from the former Radium Paint Room was connected to the sanitary sewer line (SSL) or the industrial waste pipeline (IWP).

Slide 21 – Presents a photograph of the smoke test conducted to verify whether the former piping from Hangar 296 connected to the SSL or the IWP. Mr. Hay explained that they used a video camera to visually inspect the piping at Hangar 296. In addition, smoke was pumped through the pipeline originating from Hangar 296 and it was visually confirmed that it connected to the SSL.

Slide 22 – Presents the conclusions and recommendations derived upon completion of the smoke tests and remote imaging via video camera. The tests confirm that the piping is connected to the SSL. The Navy's recommendation was to evaluate the SSL downstream of Hangar 296.

Mr. Mike Scottsdale, community member, asked where the IWP led once it left the hangar premises. Mr. Hay explained that the IWP was connected to separate wastewater treatment plant. The pipeline was connected to a more rigorous wastewater treatment before wastewater was released into the regular sanitary sewer line where greywater was typically released. Mr. Scottsdale asked if that treatment plant to which Mr. Hays was referring still exists. Mr. Hay replied that the plants are no longer in operation, but they were all investigated as part of other radiological investigations (IRP Site 12). Further, he noted that IRP Site 12 has already received URR.

Slide 23 – Title page for Objective #3. The third objective of the SI/FSS is to investigate the piping and surrounding soil and determine suitability for URR.

Slide 24 – Presents the work performed to meet Objective #3. Mr. Hay explained that work included removing and investigating the above- and belowground piping inside Hangar 296 in addition to the piping outside the hangar leading to the SSL.

Slide 25 – Presents a photograph of the fieldwork conducted to investigate the belowground pipe outside Hangar 296. Mr. Hay explained that there was residual radiation inside the piping itself. An accumulation of residual radiation was detected where the vertical pipe, originating from the second floor, connected to the horizontal pipe located on the first floor.

Slide 26 – Presents the conclusions and recommendations derived upon completing the investigation of the piping. Upon removal of piping associated with the former Radium Paint Room, measurements were comparable to background levels and no unacceptable levels of radioactivity were identified in soil samples. The Navy's recommendation was NFA and URR for subsurface soils and piping originating from Hangar 296.

Slide 27 – Title page for Objective #4. The fourth objective of the SI/FSS is to determine whether the SSL downgradient from Hangar 296 is suitable for URR.

Slides 28 and 29 – Presents the work performed to meet Objective #4 and a figure showing the layout of the manholes that were connected to Hangar 296.

Slide 30 – Presents the conclusions and recommendations. Upon completion of the fieldwork, it was determined that radiological concentrations in manholes downstream of Hangar 296 were comparable to background. Further, no unacceptable levels of ²²⁶Ra were identified in the SSL downstream of Hangar 296. The Navy's recommendation was NFA and URR for the SSL downgradient of Hangar 296.

Mr. Hay returned the presentation over to Mr. Chammas, who provided the upcoming schedule for deliverables.

Slide 31 – Presents the upcoming schedule for Hangar 296 deliverables.

Slide 32 – List of acronyms.

Ms. Falcon asked whether the dust collected from the grinder was treated as hazardous waste and properly transported for disposal. Mr. Hay replied that the dust was properly disposed of and contained by surrounding the room with a large plastic sheet. Further, a high-efficiency particulate air filtration system was in use throughout the grinding operations and personnel wore proper personal protective equipment, which included respirators. Air measurements were collected during the grinding and, throughout the field effort, there were no hazardous particulates in the working zone breathing zone. Ms. Aycock asked whether they used a FIDLER for the main instrument mounted on the cart. Mr. Hay replied that a FIDLER was not used. He noted that a FIDLER is a field instrument used to detect low energy radiation. Mr. Hay explained that inside the hangar, where they were measuring alpha and beta particles, they used primarily gas-proportional detectors.

Mr. Chris Crompton commented that he remembered when they first learned about this radiological problem at Hangar 296 and asked how long this investigation has been taking place. Mr. Smits replied that the Navy has been working on this investigation at Hangar 296 since 2013. Mr. Crompton asked whether the Navy had investigated other hangars on base. Mr. Smits replied that previous historical radiological investigations at other hangars have been conducted since 2000. Mr. Crompton commended the Navy on the level of effort put forth to address the radiological issues at these sites. Mr. Smits explained that this was the last radiological site on Former MCAS El Toro and its completion will be a big milestone for the Navy's radiological program.

Ms. Falcon asked whether the long-term monitoring and general cleanup of Former MCAS El Toro are expected to take as long as they will for Former MCAS Tustin (40 years). Mr. Smits replied that it is likely that the cleanup effort will take as long, adding that there are many former landfills at Former MCAS El Toro and the Navy is required to continue monitoring these areas for a long time. Ms. Falcon asked whether vapor intrusion (VI) from contaminated groundwater was a concern at Former MCAS El Toro. Mr. Smits explained that the main difference between the two former bases is the depth to groundwater. Groundwater at Former MCAS El Toro is approximately 80 to 90 feet below ground surface and this depth is not considered shallow enough to introduce a VI risk. He added that layers of soil that occur between the groundwater and the ground surface prevent vapors from reaching the surface and thereby reducing the VI risk. Further, he added that contaminant concentrations in groundwater at Former MCAS El Toro are relatively low and do not pose a significant risk. To augment, Ms. Aycock added that the relatively low contaminant concentrations in groundwater at Former MCAS El Toro do not pose a potential concern for VI to the surface or surface structures. Further, she explained that the Navy implements a Five-Year Review process to evaluate the potential risk of VI every five years.

MEETING EVALUATION AND SUGGESTIONS FOR FUTURE MEETING TOPICS:

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

Mr. Woodings noted that the presenters did an excellent job and presented the material well. He added that he was looking forward to seeing comments from the Regulatory Agencies.

Mr. Smits and Mr. Woodings noted that they have been fortunate to work with some good environmental contractors over the years with good support to the Navy and the Regulatory Agencies in keeping the projects and the environmental cleanup effort at Former MCAS El Toro moving forward.

Mr. Smits asked whether there were any other comments or future suggestions for meetings. He reminded the RAB that the next RAB meeting would be a site tour scheduled for 31 August 2016. He explained that the RAB would have approximately a half hour before the tour to discuss any topics of interest. Mr. Woodings reminded Mr. Smits about the RAB Co-Chair elections and the Technical Sub-committee Chairperson appointment. Mr. Smits stated that they will make sure this topic is addressed at the next meeting.

Ms. Aycock asked where the Public Meeting would be held. Mr. Smits replied that the Public Meeting to discuss the PP would take place at a location around Former MCAS El Toro, likely Irvine City Hall.

The meeting was adjourned at 7:47 p.m.

LIST OF HANDOUTS PROVIDED AT THE MEETING:

Presentation Slides:

- Hangar 296 and Associated Piping Draft Radiological Site Inspection Report, Former Marine Corps Air Station El Toro Irvine, CA
- Former MCAS El Toro RAB Meeting Agenda for 26 April 2016
- 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>

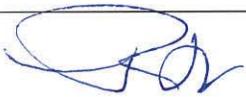
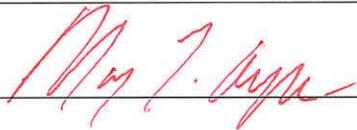
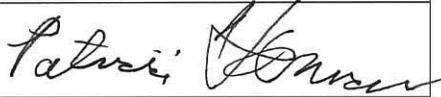
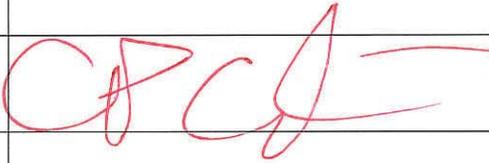
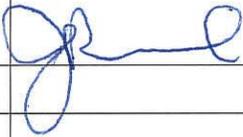
Additional Websites: Reuse and Redevelopment

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

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

**FORMER MCAS EL TORO
RESTORATION ADVISORY BOARD MEETING
AGENCY AND RAB MEMBER SIGN-IN SHEET
April 26, 2016**

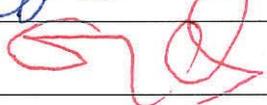
Please sign in on the appropriate line. If your address and/or phone number has recently changed, help us update our records by writing your new information on the back of the sign-in sheet. Thank you.

Name	Signature	Name	Signature
Bob Woodings, Community Co-chair		Mary Aycock, U.S. EPA	
Peter Hersh <input checked="" type="checkbox"/>		Viola Cooper, U.S. EPA	
Mary Aileen Matheis		Patricia Hannon, RWQCB	
Chris Crompton		Jennifer Rich, DTSC	
Roy Herndon <input checked="" type="checkbox"/>		Scott Warren, DTSC	
Desire' Chandler <input checked="" type="checkbox"/>			
Donald Zweifel <input checked="" type="checkbox"/>			

Excused Absence

**FORMER MCAS EL TORO
RESTORATION ADVISORY BOARD MEETING
*NAVY SIGN-IN SHEET***

April 26, 2016

Name	Signature
Marc P. Smits, BRAC Environmental Coordinator and RAB Co-chair	
Content Arnold, Lead Navy RPM	
Guy Chammas, Navy RPM	
Rich Pribyl, Navy RPM	
Alex Bollweg, Navy RPM	

**GUEST
SIGN IN**

**FORMER MCAS EL TORO
RAB MEETING- SIGN-IN SHEET
April 26, 2016**

<i>NAME</i> <u>PLEASE PRINT CLEARLY</u>	<i>AFFILIATION</i> <i>(community member/resident, elected official, agency official)</i>	<i>MAILING ADDRESS</i>	<i>PHONE EMAIL FAX</i>	<i>SHOULD WE ADD YOU TO THE MAILING LIST? (yes/no)</i>	<i>NEW TO MEETING? HOW DID YOU HEAR ABOUT THIS MEETING</i>
Peggy Falcon	Laketown				
Mark Cutler	TTEZ				
Tony Guiano	AMEC FN				
Nabby Platt	City of Irvine				
Jim Werkmeister	Five Point				
SREE AKKENAPALLY	CABRERA-INSIGHT				

**GUEST
SIGN IN**

**FORMER MCAS EL TORO
RAB MEETING- SIGN-IN SHEET**

April 26, 2016

<i>NAME</i> <u>PLEASE PRINT</u> <u>CLEARLY</u>	<i>AFFILIATION</i> <i>(community member/resident, elected official, agency official)</i>	<i>MAILING ADDRESS</i>	<i>PHONE</i> <i>EMAIL</i> <i>FAX</i>	<i>SHOULD WE ADD YOU TO THE MAILING LIST?</i> <i>(yes/no)</i>	<i>NEW TO MEETING?</i> <i>HOW DID YOU HEAR ABOUT THIS MEETING</i>
Scott Hay	Cubavera-Insight				
Rob Reitenbour	Lowe Enterprises				
Teresa Toye	AMEC wheeler Foster				
Crispin Wanyala	AECOM				



Former MCAS El Toro

Hangar 296 and Associated Piping Draft Radiological Site Inspection Report Former Marine Corps Air Station El Toro, Irvine, CA

**Guy Chammas, PG, Navy Remedial Project Manager
Scott Hay, Cabrera-Insight Joint Venture**

26 April 2016

OVERVIEW

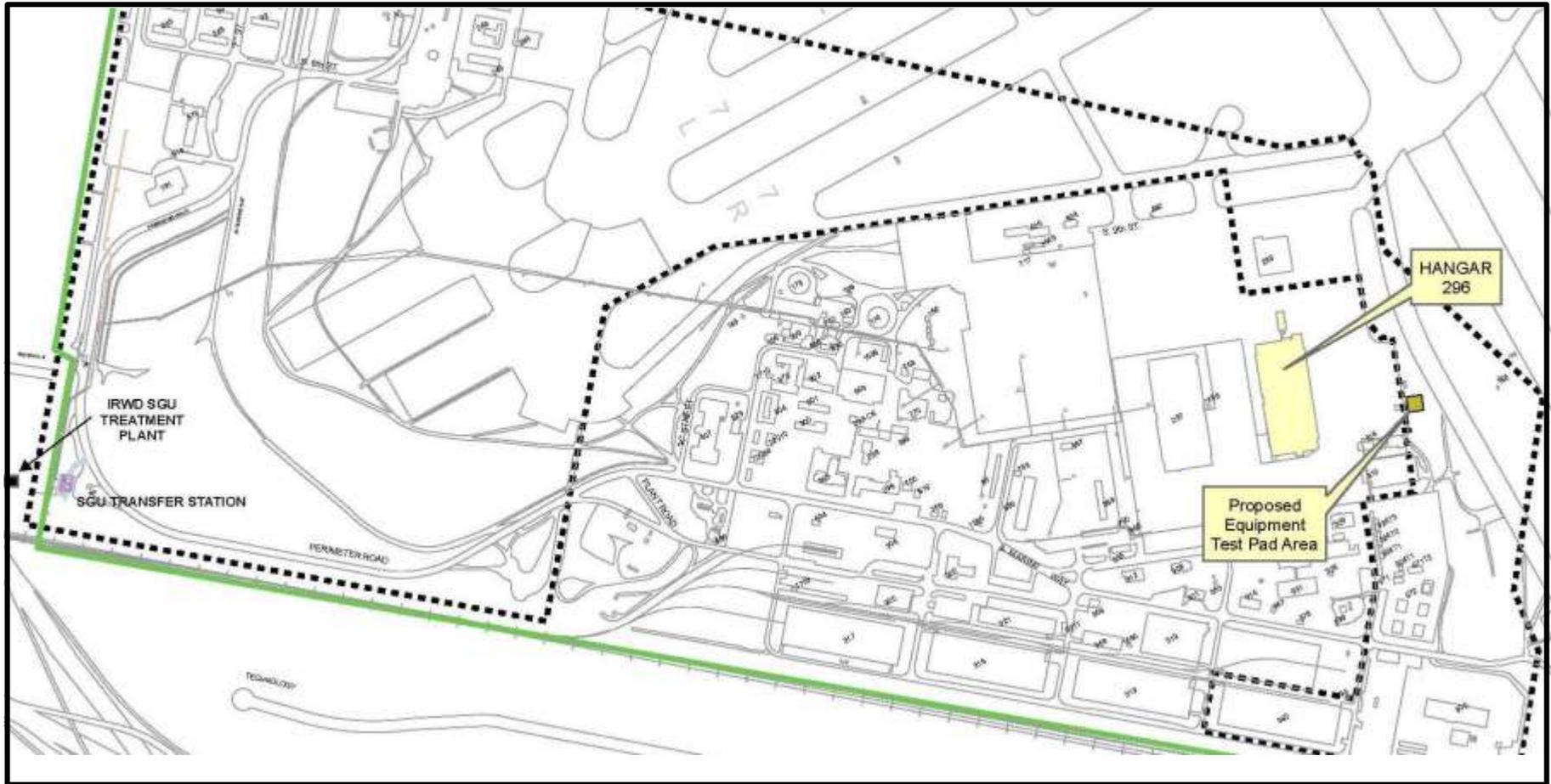


- Background
- Regulatory Oversight and Guidance
- Conceptual Site Model
- Objectives and Results
- Conclusions and Recommendations
- Schedule

BACKGROUND – Former Marine Corps Air Station El Toro Location



BACKGROUND – Hangar 296 Location

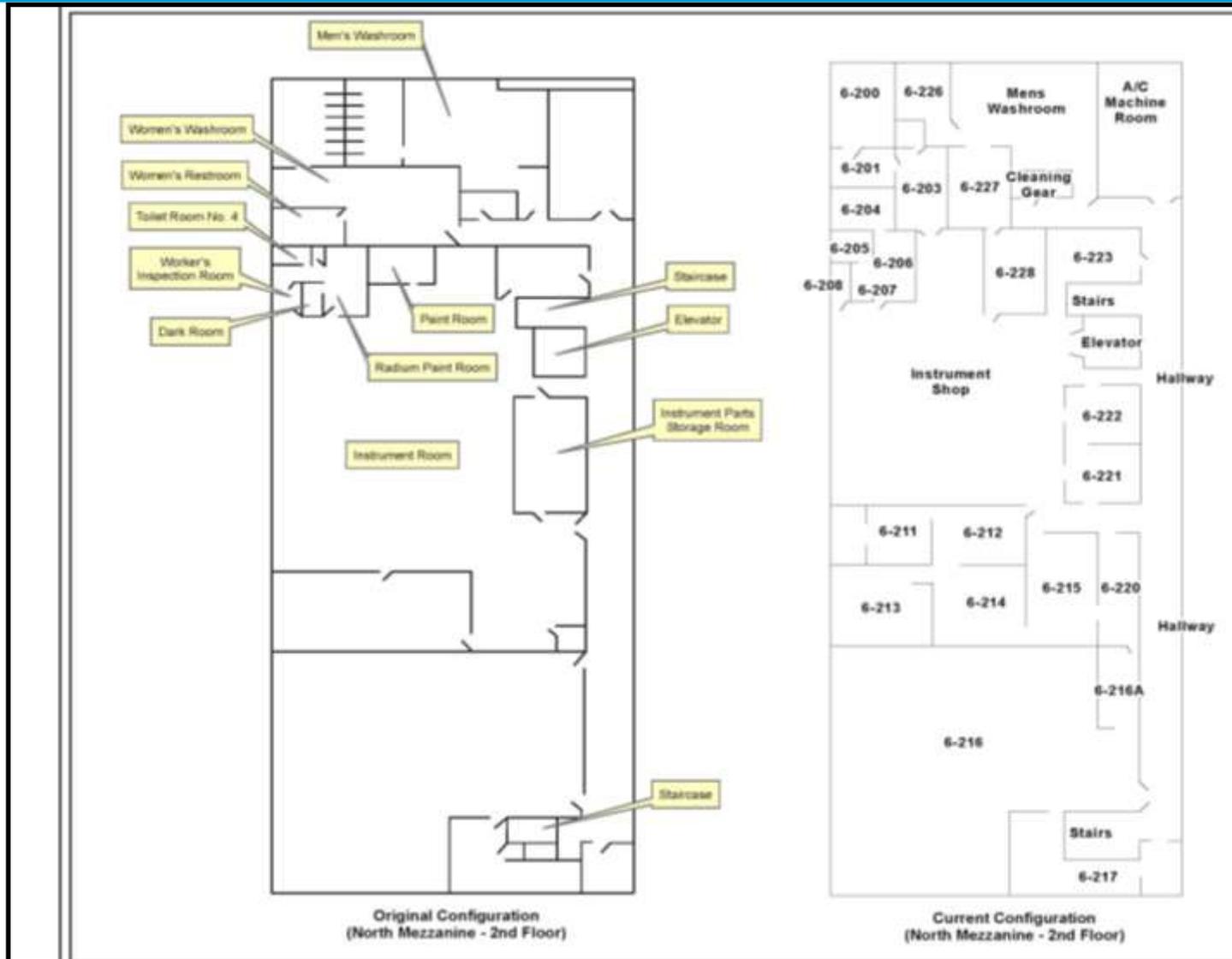


BACKGROUND – Hangar 296 History



- Hangar 296 built in late 1944 through early 1945
- Historical Radiological Assessment issued in May 2000
 - Radium Paint Room
 - Used for aircraft refurbishment operations
 - In operation from April 1949 to December 1950
 - Radionuclide of concern (ROC): Radium-226 (^{226}Ra)
 - Two Additional Storage Areas
 - Helicopter safety equipment containing sealed strontium-90 (^{90}Sr)
 - ROC: ^{90}Sr

BACKGROUND – Location of Former Radium Paint Room



- **Regulatory Agencies**

- U.S. Environmental Protection Agency (EPA)
- California Department of Toxic Substances Control
- California Regional Water Quality Control Board, Santa Ana Region

- **Radiological Technical Support**

- Naval Sea Systems Detachment/Radiological Affairs Support Office
- California Department of Public Health

- **Regulatory Guidance**

- Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (EPA et al. 2000)

CONCEPTUAL SITE MODEL



- ^{226}Ra used for short time in former Radium Paint Room
- ^{90}Sr sealed sources were stored in two rooms on first floor
- Both ROCs have potential to be found within Hangar 296
- Investigation areas
 - former Radium Paint Room (second floor, north mezzanine)
 - associated aboveground and belowground piping
 - remainder of Hangar 296
 - sanitary sewer system manholes

OBJECTIVES



- **Objective #1:** Determine if Hangar 296 building surfaces are suitable for unrestricted radiological release (URR).
- **Objective #2:** Determine if piping associated with former Radium Paint Room is connected to the sanitary sewer line (SSL) or industrial waste pipeline (IWP).

OBJECTIVES



- **Objective #3:** Determine if associated piping inside Hangar 296 requires further action or no further action (NFA) and the soil surrounding the piping is suitable for URR.
- **Objective #4:** Determine if associated piping outside Hangar 296 has been impacted and whether further action or NFA is required and URR is recommended.

OBJECTIVE #1

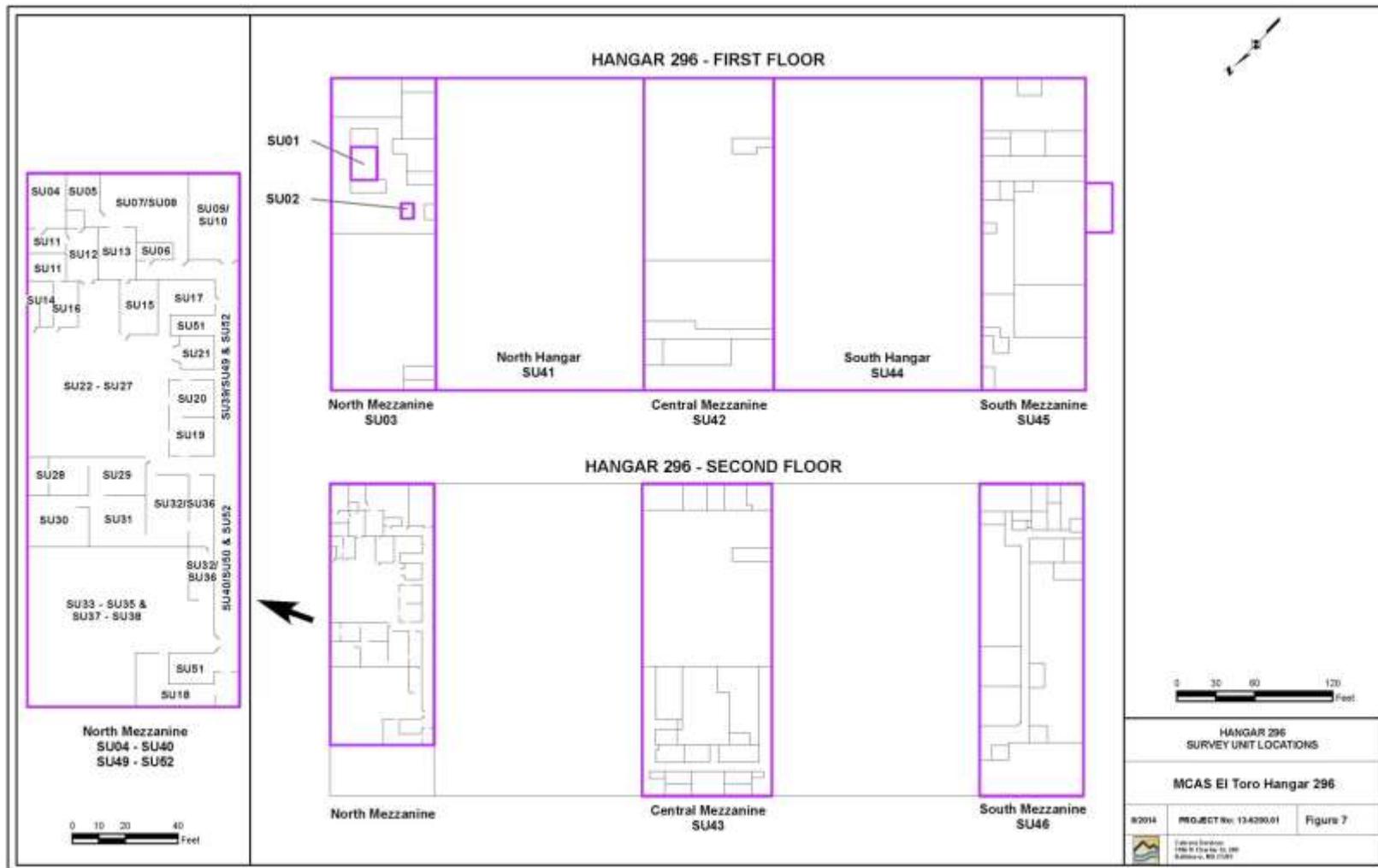
IS HANGAR 296 SUITABLE FOR URR?

WORK PERFORMED TO MEET OBJECTIVE #1



- Performed radiological measurements throughout Hangar 296
 - Scans
 - Static measurements
 - Swipe samples
- Evaluated data
- Investigated depth of residual radioactivity in concrete floor by scabbling
- Conducted Final Status Survey (FSS)

SURVEY UNIT LOCATIONS



FORMER RADIUM PAINT ROOM



POST-REMEDIAL FLOOR AND WALLS IN FORMER RADIUM PAINT ROOM



FINAL STATUS SURVEY SCANS



System 2: Three-Dimensional Indoor Survey System (3-DISS) Automated Floor Scanning System



FINAL STATUS SURVEY SCANS (cont.)



FINAL STATUS SURVEY SCANS (cont.)



CONCLUSIONS

- Limited scabbling conducted in former Radium Paint Room
- FSS measurements showed radioactivity was comparable to background
- No unacceptable levels of radiation were identified on building surfaces throughout the hangar

RECOMMENDATION

- NFA and URR are recommended for the entirety of Hangar 296 building surfaces

Objective #2

**IS THE FORMER RADIUM PAINT
ROOM PIPING CONNECTED TO THE
SSL OR IWP?**

WORK PERFORMED TO MEET OBJECTIVE #2

- Confirmed connection of lateral from former Radium Paint Room to SSL using a smoke test.



CONCLUSIONS

- The connection of the interior piping from the former Radium Paint Room to the SSL was confirmed using a video camera and visually following removal of underground piping
- The locations of manholes up- and downstream from the Hangar 296 SSL connection were confirmed by smoke testing
- Investigated and removed underground piping from the interior of the building to where the piping connects to the SSL outside of the building

RECOMMENDATION

- Evaluate the SSL downstream of the connection from Hangar 296

Objective #3

**ARE THE PIPING AND SURROUNDING
SOIL SUITABLE FOR URR?**

WORK PERFORMED TO MEET OBJECTIVE #3



- Investigated and removed aboveground piping inside Hangar 296 associated with the former Radium Paint Room
- Investigated and removed belowground piping inside Hangar 296 to the connection with the SSL
- Investigated and removed soil surrounding belowground piping inside Hangar 296 leading to the SSL

WORK PERFORMED TO MEET OBJECTIVE #3 (cont.)



- Investigated soil surrounding belowground pipe outside Hangar 296 connected to SSL



CONCLUSIONS

- No piping associated with the former Radium Paint Room remains within Hangar 296
- FSS measurements of the soil removed from the pipe trench are comparable to background
- No unacceptable levels of radioactivity were identified in any soil samples

RECOMMENDATION

- NFA and URR are recommended for subsurface soils associated with former piping from the former Radium Paint Room to the main SSL lateral connection

Objective #4

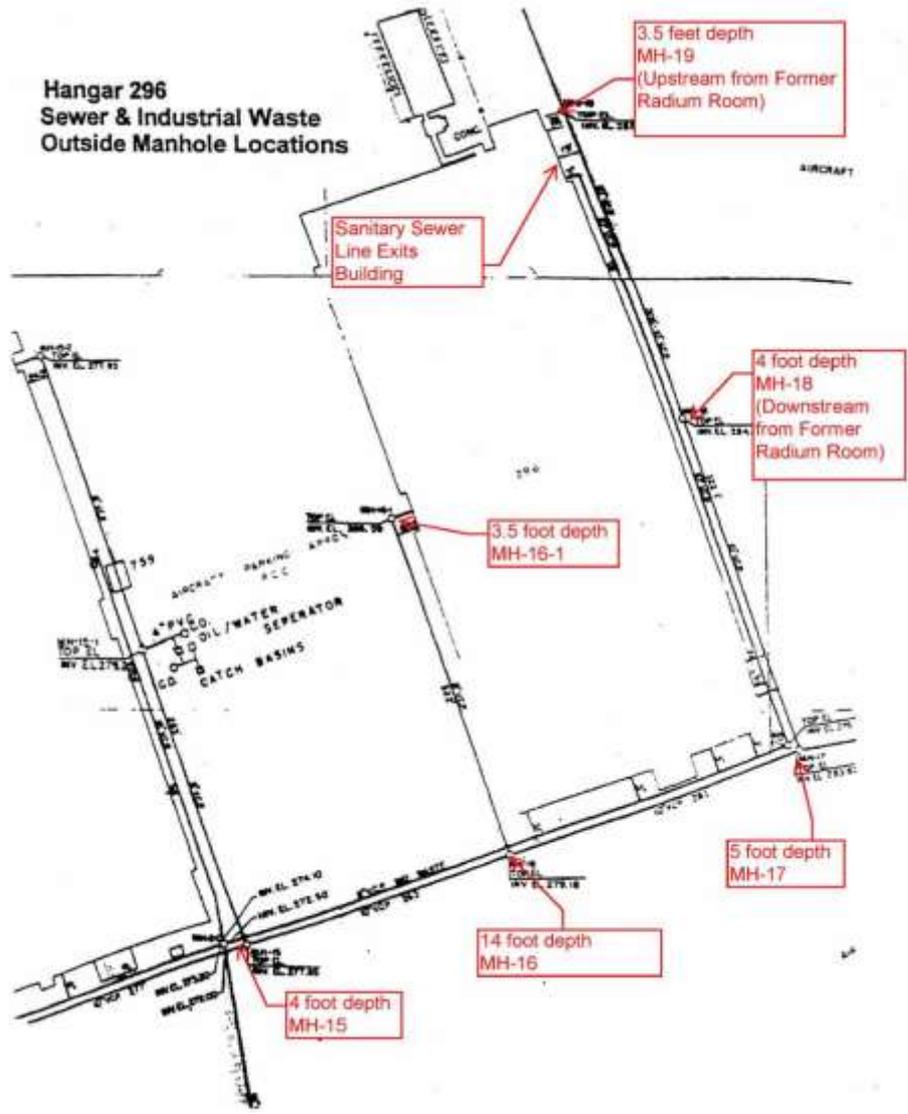
**IS THE SSL DOWNSTREAM FROM
HANGAR 296 SUITABLE FOR URR?**

WORK PERFORMED TO MEET OBJECTIVE #4



- Performed radiological surveys and collected samples from four manholes downstream from Hangar 296 SSL connection.
- Collected background measurements in manhole MH-19, located upstream of Hangar 296 SSL connection.

WORK PERFORMED TO MEET OBJECTIVE #4 (cont.)



CONCLUSIONS

- ^{226}Ra concentrations in manholes downstream from Hangar 296 were comparable to background
- No unacceptable levels of ^{226}Ra were identified in the SSL downstream of Hangar 296

RECOMMENDATION

- NFA and URR are recommended for the SSL downstream of the Hangar 296 SSL connection

SCHEDULE



Draft SI/FSS Report	19 April 2016
Regulatory Comments	20 June 2016
Draft Final SI/FSS Report	Summer 2016
Final SI/FSS Report	Fall 2016

ACRONYMS



BRAC	Base Realignment and Closure
FSS	Final Status Survey
IWP	industrial waste pipeline
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
NFA	no further action
NAVFAC	Naval Facilities Engineering Command
PG	Professional Geologist
²²⁶Ra	radium-226
ROC	radionuclide of concern
SI	site inspection
⁹⁰Sr	strontium-90
SSL	sanitary sewer line
URR	unrestricted radiological release