FINAL
MARE ISLAND NAVAL SHIPYARD
Restoration Advisory Board (RAB) Meeting Minutes

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HELD THURSDAY, March 24, 2016

The Restoration Advisory Board (RAB) for former Mare Island Naval Shipyard (MINS) held its regular meeting on Thursday, March 24, 2016, at the Mare Island Conference Center, 375 G Street, Vallejo, California. The meeting started at 7:07 p.m. and adjourned at 8:45 p.m. These minutes contain a transcript of the discussions and presentations from the RAB Meeting.

RAB Community Members in Attendance:

- Myrna Hayes (Community Co-Chair)

RAB Navy, Developers, Regulatory, and Other Agency Members in Attendance:

- Janet Lear (Navy Co-Chair)
- Dwight Gemar (Weston Solutions, Inc.)
- Valerie Harris (Navy Lead Remedial Project Manager)
- Patrick Hsieh [Department of Toxic Substances Control (DTSC)]
- Erin Hanford (City of Vallejo)
- Neal Siler (Lennar Mare Island)
- Elizabeth Wells [California Regional Water Quality Control Board (Water Board)]
- Adam Hill [Navy Remedial Project Manager (RPM)]
- Nick Shih (Contract Navy RPM)
- Steve Farley

Community Guests in Attendance:

None present

RAB Support from Construction Engineering Services, LLC, in Attendance:

- Emily Siegel
- Doris Bailey (Stenographer)
- Wally Neville (Audio/Visual Support)

I. WELCOME AND INTRODUCTIONS (Myrna Hayes [Community Co-Chair] and Janet Lear [Navy Co-Chair])

CO-CHAIR LEAR: All right. Welcome, everyone, to the Mare Island Restoration Advisory Board meeting. We'll go ahead and get started. We start with introductions. My name is Janet Lear, and I'm the Navy co-chair.

CO-CHAIR HAYES: And I'm Myrna Hayes, and I'm the community co-chair. And I think I'm the only community member here tonight, huh?

MR. GEMAR: Private showing.

MS. HARRIS: I'm Valerie Harris, I'm the lead remedial project manager for the Navy.

MR. GEMAR: Dwight Gemar with Weston Solutions.

MR. SILER: Neal Siler, Lennar Mare Island.

MS. WELLS: Elizabeth Wells with the Water Board.

MR. HSIEH: Patrick Hsieh, Department of Toxic Substances Control.

MS. HANFORD: Erin Hanford with the city of Vallejo.

MR. SHIH: Nicholas Shih, contractor support for the Navy.

MR. FARLEY: Steve Farley with OTIE.

MR. HILL: Adam Hill, RPM for the Navy.

MS. SIEGEL: Emily Siegel, CES.

CO- CHAIR LEAR: Okay. Well, before I introduce the first presentation, I just wanted to let everyone know that we have a new remedial project manager, Adam Hill over here. So he's taking over some of the projects. I believe last time we were up here Alex was with us. Alex moved to a different base. Adam has a lot of experience from working on other Navy projects outside of BRAC. So we're excited to have him.

CO-CHAIR HAYES: I forgot to get a birthday cake, but April 14th, 1994 was our first Restoration Advisory Board meeting, so this will be 22 years this meeting. And Paula and I are still RAB members from that day forward.

CO-CHAIR LEAR: Okay. So we'll go ahead and get started with our first presentation. This will be given by Nicholas Shih with the Navy. He's going to talk about the paint waste area and vicinity, remedial investigation overview.

II. PRESENTATION (Nicholas Shih [Navy]) *Paint Waste Area and Vicinity Remedial Investigation Results*

MR. SHIH: Good evening, everyone. My name is Nicholas Shih. Tonight I will be presenting the results of the Paint Waste Area and Vicinity Remedial Investigation.

Tonight we will be discussing the following topics:

- Paint Waste Area and Vicinity location. Where is the site on Mare Island and what does it currently look like?
- Site history. Why are we investigating this area? Why is it called the Paint Waste Area?
- Remedial Investigation objectives and methods. What were the Remedial Investigation objectives and methods that we used?
- Current status of the project.
- And the schedule for the next steps in the CERCLA process.

The paint waste area is approximately 5-acre site located on the northwest portion of Mare Island, west of G Street—which is right here—and Azuar Drive, in the open space area south of Building 505 where the current USGS office trailers are.

As you can see, the site is located in the area of Mare Island that was historically used as a dredge fill area. And the site has remained primarily as open space and was never developed with structures.

As you may have gathered from the name, the nature of the contaminants in the area were associated with paint waste.

Paint waste was first discovered during a visual survey of the area in 2002. The survey found a significant amount of miscellaneous paint debris on the ground surface of the area adjacent to the access road.

The Navy has deduced that the presence of paint debris was most likely the result of dumping of material by the shipyard personnel from the nearby paint manufacturing facility at Building 503, northeast of the site — which on this picture would be down in this direction.

The nearby paint manufacturing facility was constructed in the early 1940's and operated to the mid-1950s.

This aerial photograph was taken in 1949. You can see the paint waste area looks a lot different from the surrounding area, and has indications that it looks disturbed, and that it may even look topographically higher than the surrounding area.

The reason why it may look like this is that the area could have been built up by deposition of material creating an upland area. It is also important to note that at the time when the photograph was taken in the late 1940's, the site landfill was in its initial stages of use; so it could be deduced that the site appears overgrown with vegetation because waste was no longer being deposited at the site as the landfill site became available.

Based on the findings in 2002, the Navy initiated site activities in 2003 to investigate and remove chemical contamination in the area associated with paint waste. As the project advanced through those initial efforts of investigation, removal, and further assessment, by 2007 the extent of the paint waste impact in the subsurface was found to be significantly more than originally thought, and a Time-Critical Removal Action was performed.

During the Removal Action, routine radiation checks detected elevated radiological readings which were later confirmed to be low level radiological items.

To complicate matters further, a munitions item was also discovered on the ground surface. These findings were unexpected, and resulted in work stoppage and revisions to planning documents for the removal action so that it could be in compliance with the proper munitions program and radiological policy removal requirements. The Removal Action was resumed in 2009.

This slide shows site details of the Removal Action which occurred between 2009 and 2012. The site area was divided into survey units, SUs, with each unit covering an approximate 0.5-acre area. The establishment of survey units is in accordance with radiological survey methods, but was also incorporated into the geophysical investigation approach to look for metallic anomalies indicative of buried munitions.

At each survey unit the Removal Action process consisted of radiological surveys, geophysical mapping and investigation, anomaly excavation, soil sampling, and excavation in 1-foot lifts until the removal action goals were met.

You can see the first initial survey units one through six were set up to assess and remove the main portion of the site first.

You can then see how survey unit one boundary was expanded to the west.

And SU7 and SU8 were established on the east and to the south to confirm the boundaries of the radiological items, munitions items, and impacted soil.

Because additional radiological items were discovered in 2011 in the northwestern portion of survey unit seven, additional survey units nine and ten were established to the north to see if there were any indications of additional material to the north.

As a result, more radiological munitions items were discovered and the Removal Action was expanded to the north. This expansion was designated as survey unit 9A, where the Removal Action process for each survey unit was repeated.

You will also notice that there are two isolated areas, survey unit six, that are not contiguous with the main area. These excavations were performed as a result of elevated metals detected from soil borings in those areas conducted during previous site investigation activity.

The slide also has a tally of the number of low level radiological items and munitions items that were discovered, as well as the number of cubic yards of soil that were removed with the removal action.

The Final Time-Critical Removal Action Completion Report was submitted in December 2013 and received concurrence from the agencies.

The completion report was followed by unrestricted release for radiological impacts from the California Department of Public Health in 2014, and the concurrence for no further investigation for munitions by the Naval Ordnance Safety and Security Activity in 2015.

This figure shows all the munitions and radiological items recovered during the removal action. You can see the concentration of material in the northern portion of the site adjacent to the roads. Based on the findings in the northern perimeter, the Remedial Investigation work was prompted to assess areas further to the north to determine the nature and extent of radiological and munitions impacts, chemical contamination, and also to conduct a risk assessment for the entire site in order to assess human and ecological risk.

For your visual aid, this slide shows a typical low level radiological item, a button, that was recovered, and some recovered munitions items that were documented as safe.

CO-CHAIR HAYES: You know, Nicholas —

MR. SHIH: Yes.

CO-CHAIR HAYES: — could you just, for the record, explain a little bit what a radiological button is? It's not a glow in the dark Halloween outfit item; right?

MR. SHIH: No. No, button as in —

CO-CHAIR HAYES: I mean, I know, but there are people who read these minutes, I guess, and maybe someone here wouldn't know what a radiological button is.

MR. SHIH: Sure. Radiological buttons or deck markers that are approximately one inch in size were primarily used for low level illumination on ship decks.

This slide shows two aerial photographs of the site that you've seen on previous slides.

The aerial photo on the left shows the removal action area in red.

And the one on the right is a historical area photograph taken in 1949. You can see how the removal resulted in an excavation area that is consistent with the disturbed upland area historical photo that you see on the right, confirming the site model info that suggested that the paint waste dumping was concentrated in this area bordered by these access roads. The Remedial Investigation was conducted to confirm further extent.

In March, 2014 the work plan for the Remedial Investigation was finalized, and the Remedial Investigation objectives were to:

- verify that the Removal Action excavation reached the extent of the paint waste, radiological items, and munitions and explosives of concern;
- characterize the nature and extent of radiological and munitions items, and radiological chemical contamination in surface soil, subsurface soil, and groundwater;
- update the conceptual site model;
- characterize the potential risk from exposure to radiological contamination and munitions and explosives of concern, if present;
- conduct a baseline human health risk assessment and screening level ecological risk assessment to evaluate risk from exposure to chemical contamination in soil and groundwater; and
- provide recommendations for future work, including the development of Remedial Action Objectives for the Feasibility Study.

The Remedial Investigation approach employed a combination of methods for collecting data to accomplish those objectives.

Vegetative cover was cut manually, and exclusionary fencing was installed with biological monitoring for salt marsh harvest mouse avoidance.

Surface surveys were performed for radiological items and munitions. All confirmed anomalies were excavated.

Surface soil sampling were collected from thirty locations and analyzed for radioactivity. Additional surface and subsurface soil samples were collected from ten locations and analyzed for chemicals of concern.

Eight trenches measuring three feet wide by four feet deep were excavated to a max depth of four feet below ground surface. In each trench radiological and geophysical surveys were performed at one foot intervals, and excavated soil was screened for radiological and munitions items. Additional sample collection of residual paint waste was discovered in the trenches.

Four groundwater wells were installed, and groundwater samples were analyzed for chemicals of concern and radioactivity.

And we performed baseline human health and screening level ecological risk assessments using the chemical concentrations from the Remedial Investigation data and from the Removal Action.

This next slide shows a figure of the site investigation methods that were implemented in the summer of 2014.

And at this point it's important to discuss that the Paint Waste Area has been defined as an area associated with the Removal Action, this area that's depicted in kind of this orangish-yellow.

In the vicinity you can find this area to the north where the Remedial Investigation has been expanded, the area in purple or blue to the north.

The Paint Waste Area and Vicinity represents the entire site. On this slide you can see where units eleven and twelve were added to the east and west, and the existing survey units nine and ten were up here on the north.

In the Vicinity Area you can see the eight trench locations, 30 radiological soil sampling locations, ten chemical soil sampling locations, and the entire area. There are the four monitoring well locations. One, two, three, and four.

The figure also shows the Removal Action soil sample locations represented by black dots that — where the data was used by the Remedial Investigation risk assessment.

I've included this slide which shows pictures of the geophysical and radiological survey equipment so you can have a perspective of what the survey equipment looks like. You can see the GPS instrumentation mounted to the top of the carts that help collect locational data that's incorporated into these figures.

So what were the results of the investigation? First the radiological results.

No radiological items were encountered during the radiological scoping survey and in the subsurface survey trenches in 2014.

Although red areas in the figure depicted exceedances of the radiological investigation limit—these right here—soil samples from these areas confirm that the soil contained naturally occurring radioactive elements, in this case potassium isotope K40.

For further confirmation, thirty surface soil samples were collected and analyzed for radium and strontium.

Radioactive elements were not detected above the project action limit in any of the samples.

SU9 and SU10 are colored in blue because those results are from 2011 when the first step-out surveys were conducted, and those results are shown on this next slide.

This slide again shows the survey results from SU9 and SU10 that were not shown on the previous slide, and confirm the lack of findings in SU9 and SU10 except for the previously recovered items from SU9A, which was excavated.

Digital geophysical mapping (DGM) information shows us survey results from metallic anomalies in the ground that may indicate the presence of buried munitions. After metallic anomalies discovered by the survey and in the trenches were excavated and investigated, no munitions or materials designated as safe were recovered during the Remedial Investigation in the Vicinity Area. All anomalies investigated were scrap metal debris.

Again, SU9 and SU10 are on the next slide since they are from a previous event.

This slide shows the results from SU9 and SU10, where SU9A was excavated during the Removal Action.

Soil sampling results. From the 10 locations where soil samples were collected from the surface and subsurface in the Vicinity Area, there were 3 soil samples with metals concentrations exceeding ambient levels.

Surface soil samples. Only lead and zinc concentrations exceeded the Mare Island ambient concentrations in the same sample, number 31—which is down here in the lower left or southwest if you have your eleven by seventeen figures.

Aluminum exceeded its corresponding ambient concentration in one soil sample, number 50.

Copper, lead, manganese, and zinc each exceeded their corresponding ambient concentrations in one soil sample, number 32.

This figure also displays data from previous Time-Critical Removal Action soil samples where elevated concentrations remain in survey unit six—down here in the southeast—that met removal action cleanup goals but still exceed ambient levels.

Trench investigation results. No munitions or material designated as safe were encountered in the eight trenches.

No radiological items were encountered in the eight trenches. And radiation survey measurements within the eight trenches were below the investigation level.

Residual paint waste was observed in trench one, trench eight, and two anomaly excavation potholes, at depths ranging from one feet to three feet below ground surface.

Paint waste and soil at deeper depths below the paint was sampled and analyzed for chemicals of concern.

These are photographs of the residual paint waste in the subsurface of the two trenches. You can see the residual material approximately 1 to 2 feet below ground surface in the trenches.

This slide shows the result of volatile organic compound analysis of the paint waste samples. Only detected concentrations of volatile organic compounds are shown.

There were detections of volatile organic compounds in each of the 12 paint waste soil samples, however the concentrations are relatively low.

You can probably see them better on your 11 by 17 figures than on my slide up here.

None of the twelve paint waste soil samples had detected concentrations of semivolatile organic compounds, total petroleum hydrocarbons, pesticides, polychlorinated biphenyls, or organotins. This next slide shows the concentrations of metals detected in the paint waste samples that exceeded Mare Island ambient levels.

As you can see, metals concentrations are elevated. Of most concern in relation to human and ecological risk is lead.

You can also see somewhat of a pattern that the concentrations of metals decrease at deeper soil sample depths, and that there are less metals detected at concentrations above ambient levels in the deeper samples.

Groundwater sampling results. This slide shows the detected concentrations of volatile organic compounds in the four groundwater samples that were collected from the four groundwater monitoring wells. The only detected concentrations of volatile organic compounds were acetone

and carbon disulfide, which can be commonly detected as laboratory contaminants and are not likely be site related.

None of the four groundwater samples had detected concentrations of semi-volatile organic compounds, pesticides, polychlorinated biphenyls, explosives, total petroleum hydrocarbons, or radium.

Metals were detected in multiple groundwater samples, however none of the concentrations of metals exceeded the Mare Island ambient groundwater concentrations.

Depth to the water in the area is approximately 6 feet below ground surface.

Human health risk assessment. The Remedial Investigation chemical results data were used as input for the human health risk assessment, along with soil data from the removal action.

The risk assessment factored in the current site use as open space, and future use designated as open space according to the Mare Island specific plan.

Even though future use is designated as open space, multiple receptor scenarios were still assessed under a conservative approach and for comparison purposes.

Multiple sources of impacted media that receptors could be exposed to were also taken into account; surface soil, subsurface soil, and groundwater.

Risk also had to be assessed separately for subsurface soil in the survey unit six areas as they were not contiguous with the main site area.

This slide shows a conceptual site model and identifies the complete exposure pathways that connect the contaminant source on the left, the receptor categories on the right.

Complete pathways for all its receptors were incidental soil ingestion, dermal contact with soil, and inhalation of dust and vapors and ambient air.

In addition, the construction worker was evaluated for dermal contact with groundwater, and the hypothetical resident was evaluated for use of groundwater as a potable water supply.

The complete exposure pathways are depicted in the solid black dots. This slide summarizes the risk results for soil. Risk to typical recreational receptors from exposure to surface soil was considered acceptable. Recreational assumptions were based on site use by wildlife managers or recreational activity like trail hiking and wildlife viewing.

Risk to commercial/industrial receptors, construction workers, and hypothetical residents exceeded the total cancer risk and non-cancer hazard index criteria for both surface and subsurface soil. However, risk is overestimated because metals concentrations that were driving risk were lower than ambient levels.

Lead concentrations in surface and subsurface soil are estimated to pose a potential risk to the construction worker and the hypothetical future resident.

Lead concentrations in subsurface soil at the SU6 non-contiguous areas also pose a potential risk to the commercial/industrial worker, construction worker, and the hypothetical future resident.

This slide summarizes the risk results for groundwater. Groundwater total cancer risk and non-cancer hazard risk exceed criteria for hypothetical residents using groundwater as potable water. However, risk is overestimated because metals concentrations, primarily arsenic and chromium, detected in groundwater are consistent with ambient concentrations.

The Navy has determined that the shallow groundwater beneath the site meets the criteria for an exception to the state sources of drinking water policy based on high concentrations of total dissolved solids.

The Regional Water Board concurred with this determination in May, 2015.

Domestic water on Mare Island is supplied by the City of Vallejo.

Ingestion of shallow groundwater is not considered a complete exposure pathway.

The major result of the human health risk assessment is that metals present in the surface and subsurface soil and groundwater pose a potential risk to humans under certain exposure scenarios, construction worker, hypothetical resident, and commercial/industrial worker. However, these particular scenarios are not anticipated in the future open space use scenario.

The next phase of the risk assessment was a screening level ecological risk assessment. The screening level ecological risk assessment was conducted to evaluate risk to plants, birds, and mammals native to non-tidal wetland habitat.

Exposure pathways were soil ingestion, inhalation, and direct contact and uptake by terrestrial vegetation from soil.

Receptors that were evaluated were the mallard, killdeer, great blue heron, and salt marsh harvest mouse, chosen as representative of non-tidal wetland habitat receptors for food chain analysis to evaluate risks to waterfowl, shore birds, wading birds, and small mammals.

Screening level ecological risk assessments results. Chemicals of potential ecological concern in surface soil at the paint waste area and vicinity pose a negligible risk to avian or mammalian receptors.

Chemicals of potential ecological concern in shallow soil, defined as zero to two feet below ground surface, at the Paint Waste Area and Vicinity pose a risk to killdeer and heron bird species. However, exposure to shallow soil is unlikely.

The metals results driving risk, the paint waste samples, were detected below one foot below ground surface and in isolated areas. Bird species would most likely not be exposed on a population level since they will not visit those areas frequently.

Radiological risk assessment and munitions and explosives of concern hazard assessment. The residual radioactive materials model, RESRAD, was used to calculate the total potential cancer risk from residual activity at the paint waste area.

The model used maximum residual concentrations of radium and strontium, and calculated a total potential cancer risk of 9.52 times ten to the negative six, which is within the U.S. EPA risk management range.

None of the radiological soil samples collected from the Paint Waste Area and Vicinity had concentrations exceeding the project action limits defined in the work plan.

The munitions and explosives of concern (MEC) hazard assessment for the Paint Waste Area was prepared using the munitions investigation results, and according to EPA guidance using the munitions hazard assessment workbook model.

The munitions hazard assessment resulted in a hazard level category four designation. Hazard level category four is the lowest possible hazard level category for a site with a history of munitions contamination, and takes into account No Further Action with Land Use Controls.

Implementation of land use controls would be adequate to safely support the planned reuse as open space/non-tidal wetlands.

The next step in the CERCLA process after the Remedial Investigation is the Feasibility Study.

The Feasibility Study will evaluate remedial alternatives for the Paint Waste Area and Vicinity to prevent unacceptable risk to humans from potential exposure to munitions and explosives of concern as recommended by the results of the MEC hazard—munitions hazard assessment; Potential exposure of future construction workers and hypothetical future residential receptors to lead in surface and subsurface soil as indicated by the results of the risk assessment;

And potential exposure of future commercial/industrial and future construction workers and hypothetical future residential receptors to lead in the non-contiguous areas in SU6.

The Navy is currently in the process of finalizing the Remedial Investigation Report. We're currently responding to agency comments.

We anticipate that the Final Remedial Investigation Report will be completed in May 2016.

We anticipate completing a Feasibility Study Report in November 2016.

The proposed plan by February 2017.

And ultimately a Record of Decision/Remedial Action Plan in September 2017.

In summary, this evening we've covered:

- The Paint Waste Area and Vicinity location;
- The site history of the Paint Waste Area and Vicinity;
- The Remedial Investigation objectives and methods that were used;
- The results of the Remedial Investigation;
- And the current project status and schedule.

The last slide is a summary of the acronyms that may have been used in the slides.

And that concludes the presentation. Does anybody have any questions or comments?

CO-CHAIR HAYES: On slide 26, could you go over bullet two; what does that mean again? "However risk is overestimated because the metal concentrations that were driving the risk were lower than the ambient levels or ambient levels?"

I guess when I was looking at these numbers on figure—maybe I'm looking at the wrong amount, but I'm not a scientist here—I'm a citizen scientist—compared to the ambient, some of these numbers look really high. And so how do you conclude that, or how does your report conclude that, whatever that language was on page 26, that it's—I didn't understand what it meant.

MR. SHIH: So there are a couple of things about that question.

So ambient levels are essentially levels of metals that exist on Mare Island that have been established by a study that was previously conducted by a consultant.

CO-CHAIR HAYES: Yeah, I know that.

MR. SHIH: I believe in 2000.

CO-CHAIR HAYES: So I'm looking at those numbers —

MR. SHIH: Okay. So —

CO-CHAIR HAYES: — and I'm comparing some of your —

MR. SHIH: If you're looking at the paint waste — are you looking at the paint waste sample results?

CO-CHAIR HAYES: I'm looking at your figure that's called paint waste samples with concentrations of metals greater than Mare Island ambient.

MR. SHIH: Right. Okay. So the paint waste samples are a little bit different because they were the results that were collected from the paint waste that was discovered in the trenches. Those samples weren't essentially included in the risk assessment as they were going to be evaluated potentially for removal or for the fact that humans wouldn't be exposed to those paint waste in the subsurface.

CO-CHAIR HAYES: So which is it, are they going to be removed or are they going to not be considered because humans aren't —

MR. SHIH: That is something that we would evaluate in the Feasibility Study whether or not removal is something that we would be doing.

CO-CHAIR HAYES: Oh, okay. So this is just the Feasibility Study?

MR. SHIH: The feasibility study is next.

CO-CHAIR HAYES: I mean so this is just the RI, the Remedial Investigation?

MR. SHIH: Correct.

CO-CHAIR HAYES: Okay. And can someone tell me whether this property is in or out of the state lands transfer or this will be transferred directly to the city or will this — is this east of the joy survey line?

CO-CHAIR LEAR: It is planned to be transferred to the city.

MR. SHIH: I think its 16, parcel 16.

MR. GEMAR: But it is east of the joy survey line.

CO-CHAIR HAYES: Can the city representative just tell us what that rather broad use category in the specific plan would actually look like in day-to-day functioning, day-to-day life? I mean, it's so close to Azuar Drive. Do you have some other potential use in mind sometime, or is this just going to kind of remain like it is now forever?

MS. HANFORD: Myrna, that's a great question. I'd have to look at the specific plan. I was trying to focus in on how you were evaluating this cause it said open space, and that was my first question, well, what does that mean?

CO-CHAIR HAYES: Uh-huh.

MS. HANFORD: '—The Feasibility Study is where a lot of the decisions are going to be made. So after this when I go back to my office I'll take a look at that.

But I haven't heard of discussions of commercial building or anything like that.

CO-CHAIR LEAR: This is all salt marsh harvest mouse habitat, so it would be open space as just set aside for habitat.

MS. HANFORD: Okay. Well, like I said, I'll just double check.

CO-CHAIR HAYES: I guess the reason that that's coming up in my mind is these are vast open areas that while you, the Navy, are regulated under, you know, various laws that, and you have documentation of salt marsh harvest mice, okay, '— I don't quite understand when these properties get transferred to the city of Vallejo or to the State of California and then back through the grant to the city of Vallejo, how this property gets managed for an endangered species like the salt marsh harvest mouse or whatever some of those other, you know. I kind of get the picture when it's full of rain water.

But the reason I'm asking this is because we have some very enthusiastic drone users who are using these upland refugia areas — that's what they're technically called if they aren't actually active habitat, they can still provide storm upland protection area for those endangered species or those various protected species. And we have some people who are using these areas, even though we've kindly asked them not to about 200 times. And so it seems sort of vague.

I mean, you don't want to try to fence. I mean, we've already been through this with the landfill area, we don't want to just try to fence people out of these areas. But they're perceived by the public, I think, as accessible areas, but yet you're saying they're protected areas.

So I think there's an opportunity for public education — that isn't necessarily what the RAB's role is, I was going on the record as saying that — that these areas, while you do the environmental work and turn them over, which is your mission on BRAC bases, they present a bit of a management challenge, I think, because they do harbor endangered species, yet they kind of look like the Berkeley marina, like you could just go out and cavort with the butterflies.

So I'm just kind of trying to look ahead and see how you envision managing this and, to be protective of those species. While it sounds like you're probably going to be pretty protective of construction workers, because I don't know if they're going to need to dig except for maybe they may be exposed in this concrete corridor, this high voltage corridor, underground corridor.

But those are just comments I have just having kind of worked on this kind of property in some other parts of the island. So I express my concern about that.

MR. SHIH: Okay. Thank you.

CO-CHAIR LEAR: No other questions?

(No response.)

CO-CHAIR LEAR: Okay. Next presentation, this comes from Neal Siler, world traveler, who is going to be discussing Building 866, commercial to residential reuse, Investigation Area C2, remaining work to be performed.

III. PRESENTATION (Neil Siler [Lennar Mare Island]): – *Building 866 Area Commercial to Residential Reuse Investigation Area C1 Remaining Work*

MR. SILER: Okay. So when we last talked about the Building 866 area site was back in May of 2013. And at that time we had done some additional remediation to convert it from commercial to unrestricted land use or residential use. Tonight I'm going to talk to you about where we are today and what else we have to do as we move forward.

So, as I usually do, I'm just going to give you some background about what the site looks like, what it was used for.

Some of the historical investigations and remedial activities that took place from the 1980s up until 2013.

I'm going to talk to you about implementation of remedial activities at the last remaining site, which is underground storage tank M57, and a small segment of fuel oil pipeline segment E3/VAR/M57.

Going to lead you through how the site was left in 2008.

How it was left in 2012.

Talk about some additional work that the regulatory agencies requested that we do.

We actually did some additional monitoring work.

We'll talk about the path forward.

And if you have any questions, feel free to ask them while we're doing the presentation or at the end.

And one thing you should have because there's going to be some pictures that you're not going to be able to see, there's some eleven by seventeens you should get — if somebody doesn't have them I can hand them out to you. If not, you should be okay.

The Building 866 area site covers about 6.3 acres. It was the site of the former Building 866 which was a five-story, 386,000 square foot building that was used as an electrical shop when it was constructed in 1955 to when it closed in 1994. That land use was commercial/industrial.

When the property was transferred in the original plan it was anticipated that it would be reused for commercial/industrial, but when we started developing the site, seen what was going around that area, people came to the realization that it would be probably better if we converted that to residential reuse, and that's what we're doing moving forward.

So this was a very complicated site. There were 40 individual specialized work areas within the facility, in the electronics facility.

There were nine polychlorinated biphenyl or PCB sites, nine fuel oil pipeline segments, four USTs.

And then the electrical shop itself was considered an IR site or industrial restoration program site, and it was called IR-11 Building 866 area.

So the location of the facility is in the southwestern portion that kind of sticks out by itself of investigation area C2, which you can see right here. Here's the area right here we're talking about. This is the remainder of Investigation Area C2.

As you can see, it was a striking building. It was the largest building that I came across on the facility since I've been here the last 11 years. It's a five-story building, had very few windows on it. A lot of work areas that you could look into.

So this gives you an idea of the number of sites that were at the facility.

Here's cistern M7. UST M122. This 866 was another underground storage tank.

This is our underground storage tank that we're talking about, and a portion of the segment of this E3/VAR/M57 fuel oil pipeline.

A number of fuel oil pipelines went into the system.

There were a number of PCB sites. This is a sump site. A number of them were on the first, second, and third floors of the building. Before we demolished the building, in 2007, 2008 we removed all those PCB sites that were on the upper floors, and the sites that were on the ground floors themselves.

So as I mentioned, in 2007, 2008, as we were contemplating converting the land use in this facility from commercial/industrial to residential, Building 866 was demolished. So these are photographs of it being demolished.

And because of all the sites that were there, the 40 potential specialized areas, a number of investigations took place within the 20th and 21st century starting in 1981.

Numerous assessment investigations, sampling and analysis programs to figure out what was remaining.

There were nine PCB sites that were remediated between 2003 and 2006.

Again, the building was demolished between 2007, 2008.

2008 there was a contaminated soil removal action at UST M57.

That cistern M7, which was on the northern portion of the facility, there was some groundwater work that had to be done there, so we did additional investigations there, and we were able to close that out with unrestricted land use.

In 2010, because all the investigations up to that point had been for commercial/industrial reuse, there's a difference when you do the investigations for commercial/industrial to residential, have a much, much smaller grid that you work on when you're characterizing the site; so we went back, looked at all the facilities, the 23 environmental sites, PCB, fuel oil pipeline, underground storage tank, advanced 37 borings, dug 2 trenches, and we characterized the site for unrestricted land use.

And then the only two sites that we came up, where we had to do additional work was at Building 866 PCB sump site, and then this underground storage tank M57, and a portion of FOPL segment E3/VAR/M57.

So I'm not going to talk about the PCB site because we have closure for that site. There's nothing left to do there.

But this was the — how the site was left after 2008 when they did the excavation. And then they also installed five monitoring wells around the site. There's one right here in the middle of it, and then five monitoring wells around it.

So they had cleaned up the soil to commercial/industrial land use criteria. Installed the wells. These four wells along the outside did not show any contamination. They're within about 30 feet of this one well in the center here.

And this well fluctuated above and below the cleanup level for total petroleum hydrocarbons as diesel which is 5,000 micrograms per liter. And strangely enough, the commercial/industrial cleanup goal and the unrestricted land use, or residential cleanup goal is both — in groundwater is 5,000 micrograms per liter. So this one fluctuated above and below.

So when we converted the — or wanted to further remediate this site, we went back in 2012, did eight additional excavations to remove petroleum hydrocarbons above the residential Tier 2 screening levels.

We encountered some green sand in one portion of the excavation, removed that.

Collected verification samples.

Disposed of the materials off-site.

Backfilled the excavation.

We collected soil vapor samples.

And then we went and requested No Further Action for Unrestricted Land Area.

So this right here shows you some photographs of when we were doing that work in 2012. We were excavating around the area.

Here they're actually surveying a site using a global positioning system.

And there's the area backfilled.

So what this slide shows is the soil conditions after we had done those eight additional excavations in 2012 and this had all been cleaned up to unrestricted land use level.

But what happened was, because the last time I think we had collected a sample in groundwater was around 2009, and it was seeming to fluctuate above and below the cleanup goal of 5,000 micrograms per liter for diesel, the Water Board requested that we go back in and resample that area for groundwater.

And because this is Mare Island — and nothing is ever easy on Mare Island when you weigh in the Mare Island factor — we advanced that boring, took that reconnaissance sample, total petroleum hydrocarbons as diesel was 19,000 micrograms per liter. So the cleanup goal, as I had mentioned, is 5,000 micrograms per liter.

So we were a little bit flummoxed by that. So we wanted to see if maybe we had found some things that were entrained in the suspended portion of it and not the dissolved portion. Went back in, installed a groundwater monitoring well, and implemented a groundwater monitoring program.

And from when we first sampled that well in December of 2014 it was still above the cleanup goal, and today that well is still above the cleanup goal.

So it's gone down from 19,000 down to about 8,400, but that still doesn't get to us what our goal is.

CO-CHAIR HAYES: Can you just explain in lay terms what you did to drop that number, to get that number to drop?

MR. SILER: We didn't do anything. We just basically went back in and just kept collecting groundwater samples.

The petroleum hydrocarbons will break down naturally. I think we were a little bit shocked that it was actually so high above the cleanup goal, because everything we had seen in the past was very, very near the cleanup goal, just fluctuating above and below it.

So, you know, why that was so high I couldn't tell you, but it was, and so we had to deal with it.

There was no other source. We had taken everything out, you know. The original excavation was down to 20 feet, so we were actually below the groundwater in that.

We took all the areas around the periphery of that excavation down to unrestricted land use levels, so there was nothing else we could do as far as the source in the area. So we just were with this — with this high number, and it still had that high number here.

But what we did was we went back in and said, well, let's take a look, cause we'd installed this well very close to where that original well was that had been in there before, then we went back and installed the four wells around the periphery where those four wells that were previously there before. And in the next slide we'll show you that.

But in those wells you can see the total petroleum hydrocarbons as diesel ranges from, you know, non-detect, which is below 50 micrograms per liter, to only 340 micrograms per liter. So this is a very localized condition, very localized in that area.

Now, you can probably make — build the case that these wells out here and this slide shows you, and you have an eleven by seventeen figure, you know, this is the original well right here. The ones with the X's are the original wells that were from the 2007-2008 work that we did, 2010.

Put wells real close to the other four wells around the corners. These wells are within 30 feet of this. This is a very localized condition. We can probably get closure for it, but because we're going to be putting single-family homes on this we don't want to chance anything.

So what we're going to do is go back and develop a corrective action plan. We're going to be injecting some compounds, either oxygen releasing, or depending on how aggressive we want to get, just to go ahead and destroy it through chemical oxidation.

Continue groundwater monitoring. Do that for a year.

And then after a year evaluate those conditions, see if we've got the concentrations down by implementing that cap, and see if we can get closure for unrestricted land use as warranted.

If not, we'll go back, do some reinjections, see if we can get it down to below the level that we need to do.

So there's really not a lot to do at this site; just, as always with the Mare Island factor, nothing is ever easy, never takes, you know, the amount of time that you think it will, always takes longer. So if anybody has any additional questions, I'd be glad to answer them right now.

CO-CHAIR HAYES: I actually had written myself a note to ask you what you what type of housing you intend there, single-family.

The property is already, unlike your other properties, where you did quite a bit of fill to get it up to the grade that it is now. This property seems like it's already at grade and yet it's pretty industrially — you'll end up with unrestricted, I know, before you set about making single-family houses, but what will you do to try to — I mean, I guess I'm not a developer, I don't know exactly how you'll address the soils issue, you know. I mean, it looks real industrial, how are you going — are you going to remove soil and import clean, different soil or what?

MR. SILER: I'm sure, yeah, they'll be doing a re-grading in there. And, you know, how they're going to do that, I couldn't tell you. That will obviously be in with their plans for putting in the homes.

But I'm sure that there's going to be some grading that will go on in there to, you know, treat the soils to make sure that they're appropriate for putting the type of construction that they're planning to put on there.

CO-CHAIR HAYES: That's actually not a fill area, is it? It's native soil.

MR. SILER: I think you're in native material right there, I think you're correct, Myrna.

Any other questions?

(No response.)

MR. SILER: Okay. Thank you very much.

CO-CHAIR LEAR: Thank you, Neal.

Okay. We're at our first public comment period.

CO-CHAIR HAYES: I actually do want to make a comment. I was contacted today by a woman via Facebook asking whether it would be appropriate for her to attend this meeting to talk about her plans, kind of passion she has, obsession a little bit, I guess, I don't know, kind of very, very interested in the first lighthouse on Mare Island, and wanting to do some type of a replica of that lighthouse or — that's what she's often referred to. So — and she wanted to bring that topic here as well as learn what the status was of the housing area.

And I kind of explained that the Restoration Advisory Board doesn't really deal with those kinds of proposals, more focused on environmental cleanup.

But just for the record I did want to make a note that I was contacted regarding those — that — those particular issues by a resident of this community.

CO-CHAIR LEAR: Okay. We're at ten minute break.

(Thereupon there was a brief recess.)

IV. ADMINISTRATIVE BUSINESS (Myrna Hayes [Community Co-Chair] and Janet Lear [Navy Co-Chair])

CO-CHAIR LEAR: All right. So we're at administrative business and announcements.

If you have any comments on the meeting minutes, please get those to Myrna or myself.

CO-CHAIR HAYES: I know Elizabeth just commented that we needed to hustle up some new members, and so I'll announce that Chris Rasmussen has resigned. He's been looking for some new members, but —

And then just to save you the weight and trouble of carrying this around, Kenn Browne from the Solano Sierra Club, I think he resigned about 5 years ago and moved to New York City. So, we can probably not bring this anymore.

And then I guess that's a really good point. I don't know whose job it is to hustle up new members of the Restoration Advisory Board. I think it has a valuable role. I know that a lot of people read the minutes because they tease me about them. They say that I say funny things sometimes. Kind of the good side of or the bad side of having recorted minutes. But I take credit for that, I guess.

But anyway, we do know that people do care, that they are reading these minutes even though they may not be attending.

However, something that I've always said about this particular Restoration Advisory Board, I think it's friendly and collegial, and people have commented on that, how it sounds like we really work well together, and quite different than some reports of some RABs which are no longer even in existence due to their bad behavior. So I think we should take credit as Co-chairs and as members for working together, for our partnership.

My easiest way to talk from being a member of the community about why we don't have community members here is because I feel that when a contaminant doesn't flow in mother's breast milk, it's sort of difficult to make it seem of concern. And so I think that's really legitimate, are contaminants, the way they are sequestered on Mare Island, clay soils, whatever, they aren't — and we aren't drinking the groundwater, you know, it's just hard to get people's attention.

And I don't know what efforts the Navy has been making, or Lennar as the EETP — is that it? — you know, transferee and the city of Vallejo, I mean those — you're kind of the responsible parties. I'm not a responsible party, I'm an interested party. And I'm certainly willing to be cooperative.

I don't know if you've used Facebook or other social media, or if you have other examples of it having been used in other locations, but I feel like it might be worthwhile to explore. I just don't know what your public outreach plan is.

I know we've — we met some time ago with, I think the state was here, and I know you go through some formalities regarding it, but how robustly, you know, you work on public engagement, I don't really know. I haven't a feel for that. This is not about blaming or anything like that, I'm just stating. I really don't know.

So I'm just offering that, be willing to try to help. I know that my own experience in this town is that, I hate to say it, but our good fathers and mothers at city hall, they are always throwing us very, very, very interesting approaches to land uses, and that kind of keeps some of the people who might be really great participants here, in my opinion, preoccupied with like breathing and, you know, getting to the hospital with 88-car trains blocking their way to the ER, things like that, on other projects off Mare Island.

So it's difficult to ask those people who have so little time and they have such pressing concerns that they have to prioritize to, you know, come and talk about something that seems a little bit arcane, and a little bit not directly impacting their lives, when other projects that have been presented to the city they are in the process of making decisions about our, appear to be very

concerning and very impacting to their health and welfare. So I'm offering an excuse for my community.

I had imagined, and I think that the Mare Island residents who participated in the RAB initially, I mean when there became a community, a built community, I think they had a — I had an expectation that they would be most interested.

And I think I'll go back to Dwight many, many years ago, his notion of the concentric circle communication style, that we communicate or attempt to work most closely with the people who actually live and work on the island.

I don't know. I haven't seen a report lately on how you're doing on going door-to-door, you know, with the flyers to invite people to participate, but I can see that that would — that we don't have any new members. So maybe they just don't know about the opportunity. I don't know.

But I think that the other thing that people believe that they're going to get to do by serving on the Restoration Advisory Board is to directly impact land use decisions. And that's confusing to them. Because that seems like a lot more fun, I think, than when they come to a meeting or two of these things.

And so again, not blaming, not saying there's anything that you should do differently, but it might be useful to circle back around and find out what you are doing and maybe what could be done.

I know we, Weston put a lot of work, the Navy's put a lot of work in the past, I'm not quite sure what Lennar's done, I don't know, to at one time keep our website, a website up and current and easy to use. And I don't know what the status of that is, but I am thinking just, you know, this social media thing might be a way to attract people. And I would, you know, be happy to help co-administer something like that.

V. FOCUS GROUP REPORTS

CO-CHAIR LEAR: All right. Focus groups. Let's see, we'll jump down to city report.

MS. HANFORD: I do not have anything to report at this time. Hopefully I will soon.

CO-CHAIR LEAR: Okay. Neal, you're up.

a) Lennar Update (Neal Siler [Lennar Mare Island])

MR. SILER: Okay. You should have this eleven by seventeen figure right here.

One photograph there is of some waste, solid and liquid, from Building 746 where we've been doing some cleanup in that building at two PCB sites.

CO-CHAIR HAYES: What solid and liquid?

MR. SILER: What solid and liquid?

CO-CHAIR HAYES: Waste, what is it?

MR. SILER: Well, the solid waste is concrete that we've been scabbling on the floor, and the liquid waste, there were two pits in there and they were full of water and sludge, and so we removed that material also. Okay.

So a couple of the documents that we've submitted and they're in final, hopefully, review, and we'd be able to get concurrence for them, are the implementation reports for Investigation Area B.2-2 and the implementation report for Investigation Area H-2.

And those are these two green areas right here, you can see right by D.1.

And we actually submitted those reports on St. Patrick's Day. And so I know we don't want to change the green to blue on St. Patrick's Day, but hopefully that will occur here in the near future.

And then hopefully in the near future we'll be able to submit the implementation report for Investigation Area C3, because all we really have to get through there are a number of land use covenant documents, and those are in agency review or we have received the comments back on those, trying to move that along.

But once we get Investigation Area B.2-2, H-2, and C3, we will have received no further action concurrence from the regulatory agencies on 75 percent of the property. The only ones we'll have left are the heavily industrialized areas of Investigation Areas C1 and C2.

CO-CHAIR HAYES: Maybe you can explain, did you just talk about D1.3?

MR. SILER: I didn't talk about that. On that one, hopefully we will be able to get the small area, the southern portion. But Building 84 is a ways off to be able to get closure on that.

CO-CHAIR HAYES: This — they're both the same number but they're kind of quite separate?

MR. SILER: Yeah. We call — originally we had it broken up into three areas; D1.3 north was the success center; and then D1.3 central, that was the Building 84 area; and then D1.3 south is that former western shoreline area that you can see right down by D1.1.

CO-CHAIR HAYES: Can you tell us a little bit about building 84? I understand that there was some — maybe you were at the meeting of the Architectural Heritage Commission?

MR. SILER: No, I wasn't there, but they had recommended that, take some samples of some of the building materials, caulk and paint and potentially some of the brick. And so I think we've received proposals to do that. So they're evaluating which one looks best and potentially implementing that in the near future.

CO-CHAIR HAYES: And will you be willing to give us a presentation on that investigation?

MR. SILER: You'd have to talk to — I can talk to Sheila about it, she would be in charge of that, but I think we would be willing to do that —

CO-CHAIR HAYES: Thank you.

MR. SILER: — in the near future.

CO-CHAIR HAYES: Continue with your report, please.

MR. SILER: Okay. And so fieldwork that we're going to get up, we've performed actually this month. Again, I talked about Building 746, 746A.

We were hoping to get Buildings 87, 91, and 225 started next week, but it looks like that's going to move up into April, the first week in April. We just had a small glitch in scheduling there.

But we're also going to get going on Building 121 to finish that work up; Building 688 site UL-01; and then finishing up 746, which will take place in the near future; and then 742 UL-02 which are two elevators in Building 742.

And then we're also going to be looking into doing work at the oil houses and cisterns that are right outside of the museum, at least get moving on those so that they can start prepping to put the sale in that area.

So that's it for my presentation. If anybody has any questions?

(No response.)

MR. SILER: Okay.

CO-CHAIR LEAR: Dwight.

b) Weston Update (Dwight Gemar [Weston Solutions, Inc.])

MR. GEMAR: Well, as usual the Weston report is quite pithy this month.

We did submit two compliance reports, the Western Early Transfer Parcel annual report, and the Investigation Area H-1 annual report.

And we have two reports that are in review, one by the agencies, the Record of Decision for the Investigation Restoration Site 05, Dredge Pond Seven South, and the Western Magazine Area, which are down at the south end of the island; and then also the remedial design report for those sites is being reviewed by the Navy.

Regarding Investigation Area H-1, which Weston has ongoing operations and maintenance support for, the quarterly — groundwater sampling was done for 24 of the monitoring wells there in March, and we continue to operate the perimeter groundwater extraction system for the landfill. And again, that's running uneventfully.

And we also completed our quarterly inspection of the trail, and that was looking good for the month.

And other than that it's looking very green and very nice out there this time of year.

Any questions?

(No response.)

c) Regulatory Agency Update (Patrick Hsieh [Department of Toxic Substances Control], and Elizabeth Wells [Regional Water Quality Control Board])

CO-CHAIR LEAR: Regulatory update.

MS. WELLS: Okay. We took to heart Myrna's comment last time and we have stuff to report. I actually have quite a few things.

The first thing I wanted to say, and I didn't mention this before, but quite a few months ago — I work in a Department of Defense section actually at the Regional Water Board, and quite a few months ago actually two Department of Defense staff positions were taken away from us and

sent to another regional board. So we're actually down some staff. But we heard this week that we might actually get one position back. So that's good news.

And then in terms of Mare Island specifically, so while Patrick went on vacation — he has been working diligently while not on vacation. So together we've been working on going through bunches of documents. The Navy is trying to bury us with paper.

But in the two-month period since the last meeting we looked at the paint waste area remedial investigation and radiological scoping survey report that was a draft document, and provided comments.

We looked at the Defense Reutilization and Marketing Office (DRMO) Record of Decision .

We are looking at right now the South Shoreline Area. There's a draft action memorandum that we're going through.

And then the Crane Test Area north and the Defense Reutilization and Marketing Office South. Those are two sites that have remedial investigation reports, and we are working on getting through comments and responses to comments.

And there's one or two others, I won't go into every single one. So we're actually trying to get through all these documents that we've been given.

I also actually work on some Lennar sites, it's a little secret. I'm not the primary Lennar project manager but I kept a couple of sites. And so we meet with Neal and Sheila, I think every month, to go through scheduling and trying to get some of the projects through.

So I'll be working on the IA-H2 report to try and get that site closed. And then Adriana Constantinescu — do you want me to spell that?

MS. HARRIS: Can you?

MS. WELLS: I think C-O-N-S-T-A-N constan, tin, T-I-N, escu, E-S-C-U.

MR. SILER: That's it.

MR. GEMAR: Can you use it in a sentence?

MS. WELLS: I don't think so. I don't think so. But anyway, she's going to be focusing with the DTSC project manager, who's not Patrick, on B.2-2.

And then the — a couple of other things I'm going to bring up — I'm going to do a report that will cover the rest of the year so I never have to report again.

CO-CHAIR HAYES: Oh, okay.

MS. WELLS: So there's a couple things. One is, when Neal was talking about the site where the well had the high hydrocarbons, one of the things that can also happen is when you put a well in, when you do just a boring and collect a grab, a groundwater sample, you can get a lot of sediment in it, a lot of soil in it. So when you put a well in, a lot of times you expect there won't be as much soil because it's not just a grab sample, you didn't just poke a hole in.

But when you're actually doing the drilling of the well and putting all that stuff in, you can disturb the formation a lot. So you can, a lot of times you'll see in a well — I think you've seen this, and Valerie, probably at your sites you've seen it there — there's a lot of sites where you can actually get higher concentrations, and then as time goes on and the well stabilizes and you

reach equilibrium, the concentrations will reduce and come to some sort of equilibrium. So that could be another explanation for why that has happened.

And then the last thing is — and you can tell me to stop if you already know all of this — but petroleum hydrocarbons are sort of a wacky thing — that's a technical term. And when you go out and you collect a sample for diesel, you say I'm going to collect a water sample for diesel, and you analyze it, the laboratory is comparing the result to fresh diesel. So they have a fresh diesel sample that goes through an analysis, and there's a picture of it. And then they take the sample from the field and they compare it.

But the diesel that we're detecting out here is not fresh diesel anymore, it's been out there a long time, and it's been degraded and all that. So there's a lot of discussion on how to deal with the petroleum hydrocarbons that are out here.

And in some cases you can actually have naturally occurring compounds that show up as diesel. So if you have a lot of pine tar or even if you're, you know, you're in a forest with pine trees or something or something like that. So the diesel and the petroleum hydrocarbons present sort of an interesting conundrum, not just at Mare Island but at a lot of sites.

So that is my report.

CO-CHAIR HAYES: Good.

MS. WELLS: Do you have any questions?

CO-CHAIR HAYES: No. Good.

MR. HSIEH: Kind of hard to follow up on that one.

So in addition to a lot of the things that Elizabeth has talked about, I'll talk about some of the things that I have been working on that — as the lead agency.

So as the lead agency when we approve a project we have, we are required by the California Environmental Quality Act to make sure that we adequately consider the impacts of this project to the environment. So I'm not sure how aware you are of this, what we call the CEQA process, everyone calls it CEQA, right. But it can be pretty onerous.

CO-CHAIR HAYES: Sorry, I'm doing this because tonight my brain does not like those bright lights.

MS. WELLS: We can turn one of them off.

CO-CHAIR HAYES: So I'm just looking rather silly, but —

MS. WELLS: Is that better?

CO-CHAIR HAYES: Yeah, that's a lot better. Thank you.

MS. WELLS: Thank you.

MR. HSIEH: For CEQA there are several levels to ensure our compliance with it. And the lowest level is if we think a project is small enough it can be exempt. And there are some statutory exemptions. And we actually have a group in our agency that specializes in CEQA, and so we consult with them.

And so I've been consulting with the CEQA group on a couple of sites that we're working on. First is the Installation Restoration Site 5 project. And the other is the Installation Restoration Site 17 Building 503 area.

CO-CHAIR HAYES: Can you tell us what five is? I can't remember.

MR. HSIEH: It's near the Western Magazine Area and

Dredge Pond 7S.

CO-CHAIR HAYES: And you have that in a record, I mean in a track to go end up with a RAP/ROD?

MR. HSIEH: Right. So it's in the Record of Decision phase. And so before we can actually concur with the Record of Decision, we need to ensure that we are compliant with CEQA. So that's usually when this happens.

And so with the IR 05, our CEQA group has agreed that this meets an exemption. And so we are getting ready to file a notice of exemption, and the CEQA group will then forward that to the state clearinghouse.

With IR17, unfortunately it's a much bigger project and so I had to prepare an initial study. So a lot more detail makes, you know, it has a list of factors that we have to take into account; whether there is an impact to, you know, things as diverse as agricultural resources, historical resources, sound, pollution.

So I finished the draft one, it too goes to the CEQA group for review. And then they come back with review and comments. It's kind of like what we do with the Navy except internally. And I'm hoping to get that finished pretty soon.

And then once that's ready, then it will also go to the state clearinghouse and get us ready for the record of decision.

MS. WELLS: I wanted to say one other thing. So the notice of exemption is a pretty simple process, I don't know if it's one or two pages or a checklist or something like that. But the initial study is actually a big report, and what is kind of ironic is there's a CEQA group within the Department of Toxic Substances Control, but they don't do the report. So Patrick had to do the report, and then he gives it to the group and they review it. So while he's preparing that, he actually isn't doing the review of some of the Navy's actual documents. So sort of a crazy state system.

CO-CHAIR HAYES: On the other hand, I see the Navy representative jumping for joy back there because it has, the word's out, it sounds good. So it's not a terrible thing that he's working.

MS. WELLS: No, it's a good thing. It's a very good thing.

CO-CHAIR HAYES: Yeah, in the big scheme of things you'd like to see the load shared by those who might know. But I guess they consider him to know more about the site than they do; right?

MR. HSIEH: Exactly.

MS. WELLS: So that's why I asked the question doesn't the CEQA group do the CEQA work and —

CO-CHAIR LEAR: I just want to say, Patrick, I sure hope you don't get 28 pages of comments on your document.

MR. HSIEH: That would be justice, wouldn't it?

VI. CO-CHAIR REPORT (Myrna Hayes [Community Co-Chair] and Janet Lear [Navy Co-Chair])

CO-CHAIR LEAR: Okay. So we are at the co-chair's report. Unfortunately we — the Navy does not have our little page, monthly progress report. I guess the change of date caused a little snafu on that production of that report.

But I know that Nick has been doing some PCB work with his contractor, and he's going to give us a few minute update.

MR. SHIH: Sure. We also actually recently received a closure letter from one of the PCB sites. So out of the nine remaining PCB sites that we were working on in this most recent field effort, five have been closed, so we have four remaining. Those are at, for Buildings A-142, A-266, A-17, and A-71.

And actually recently within the past month we conducted, I would say, our fourth mobilization of some remediation work that was conducted in some of the PCB buildings which included concrete removal, what we call scabbling, and some soil removal of some PCB-impacted soil. So we're anticipating getting those results back and hopefully not have to go out for a fifth mobilization.

CO-CHAIR LEAR: Okay. And, of course, we continue to ship much paper off to Elizabeth and Patrick. And we've gotten quite a few comments back over the past month as well.

So things are moving and continue to push forward. Did you —

CO-CHAIR HAYES: I was just curious if maybe this was something related to one of your other departments maybe, but I happened to be at the preserve today, because we are open every day for spring break through April 3, and there were three truckloads with three trucks that zipped through our — kind of quickly — through our trailhead, and they were loaded with blue bags or blue things of some sort. And I went up and checked in our preserve because it seemed to have lots of people managing it now, not just us, and they weren't in our preserve. So I assume they were on Navy property. But I was just curious what they might have been doing today. So you may not have an answer today.

But then we do have an Easter event for our eighth year this Saturday, the golf ball hunt and egg exchange. Kind of get the picture. We have a few thousand golf balls we've gotten, done things like hit me in the leg or hit my car window and broken it, but people gather them by the many thousands, and we toss them out in the field, and children come and gather golf balls, which proves to me that they're just about the gathering, they don't really care whether it's candy or not. Because they actually help us put them back out, you know. They come and bring us bags and bags and put them in these containers, and then we go out with wagons and we put more out and they help, and then they gather them back. So it's a lot of fun. So we'll be doing that on Saturday at 2:00 if any of you wish to know that.

And this is sort of tragic news, but the dog is recovering. For the first time in going on 9 years we did have a rattlesnake bite in the preserve on Friday of a dog, a rattlesnake bit a dog.

And we credit our signage, our information awareness we try to cultivate for that not having occurred before now. The golf course, on the other hand, has kind of quite a few bites from eager people going into the brush looking for their lost golf ball.

So — but Katie is recovering, she's a Taiwanese Mountain dog, and she was cared for at UC Davis, and probably — I'm sure there's a fund being taken up about now. I think rattlesnake bites are very expensive to treat.

And then the last thing I wanted to mention is a tremendously interesting, the kinds of things that happen at the preserve being on the island in real time.

Two things. We had a letter from a gentleman who, his first job out of high school at the Naval Ammunition Depot, at the time in 1975 referred to as the annex of the Concord Naval Weapons Station, which is why all the buildings in the Naval Ammunition Depot have the letter A in front of them, A for annex, not for ammunition.

And if anybody's interested in seeing this four page very interesting recollection, autobiography, I'd be happy to send it. It's written from the perspective of a 17-year-old, and also from the time they were loading munitions for Vietnam at Port Chicago as well as doing some repairs at Mare Island.

And then lastly, I was very honored today to welcome back to the Mare Island Preserve Dr. Robert Allen, retired from Cal Berkeley from the African American Studies — and ooh, I don't know if I'm going to get this right — the Ethnic and African American Studies Department.

He first visited the preserve in, at the 64th anniversary of the Port Chicago mutiny and was a guest speaker at our commemorative service on berth 24. And he is the author of "The Port Chicago Mutiny," a very, very interesting book that I highly recommend you finding and reading.

But he's moved to Vallejo three weeks ago from Oakland, so we'll be very honored to have a very well respected historian as part of our community now.

CO-CHAIR LEAR: Okay. We have one more public comment period.

(No response.)

CO-CHAIR LEAR: All right. I guess we're done for the evening. Thanks, everyone, for coming. Drive safe.

(Thereupon the proceedings ended at 8:45 p.m.)

List of Handouts:

- Presentation Handout – Paint Waste Area and Vicinity Remedial Investigation Overview
- Presentation Handout – Building 866 Area Commercial to Residential Reuse Remaining Work to be Performed Investigation Area C2
- Weston Solutions Mare Island Update
- Lennar Mare Island March 2016 RAB Update

Attachment 1. Presentation Handout – Paint Waste Area and Vicinity Remedial Investigation Overview

PAINT WASTE AREA AND VICINITY REMEDIAL INVESTIGATION OVERVIEW

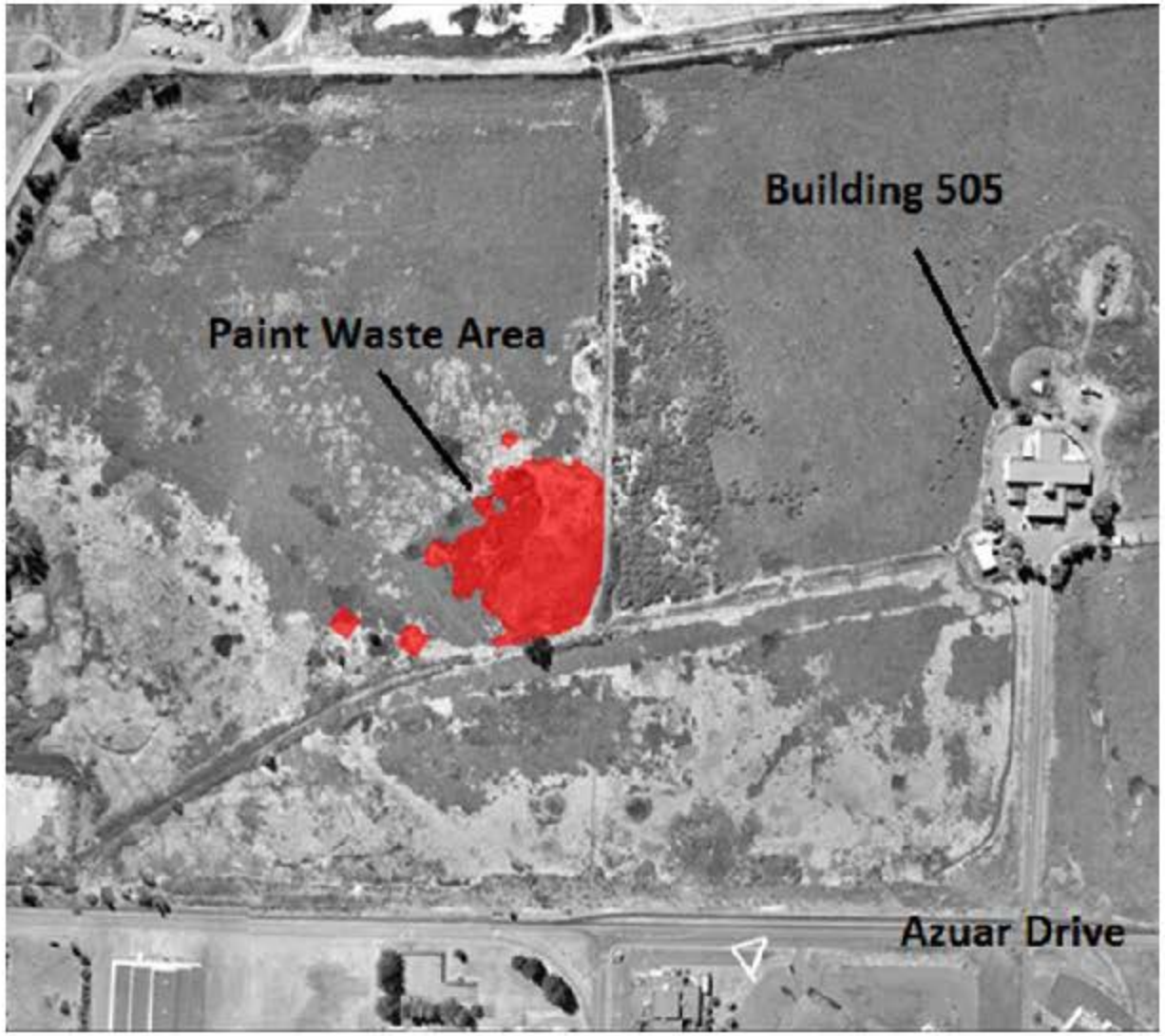
Restoration Advisory Board Meeting

March 24, 2016

Presentation Overview

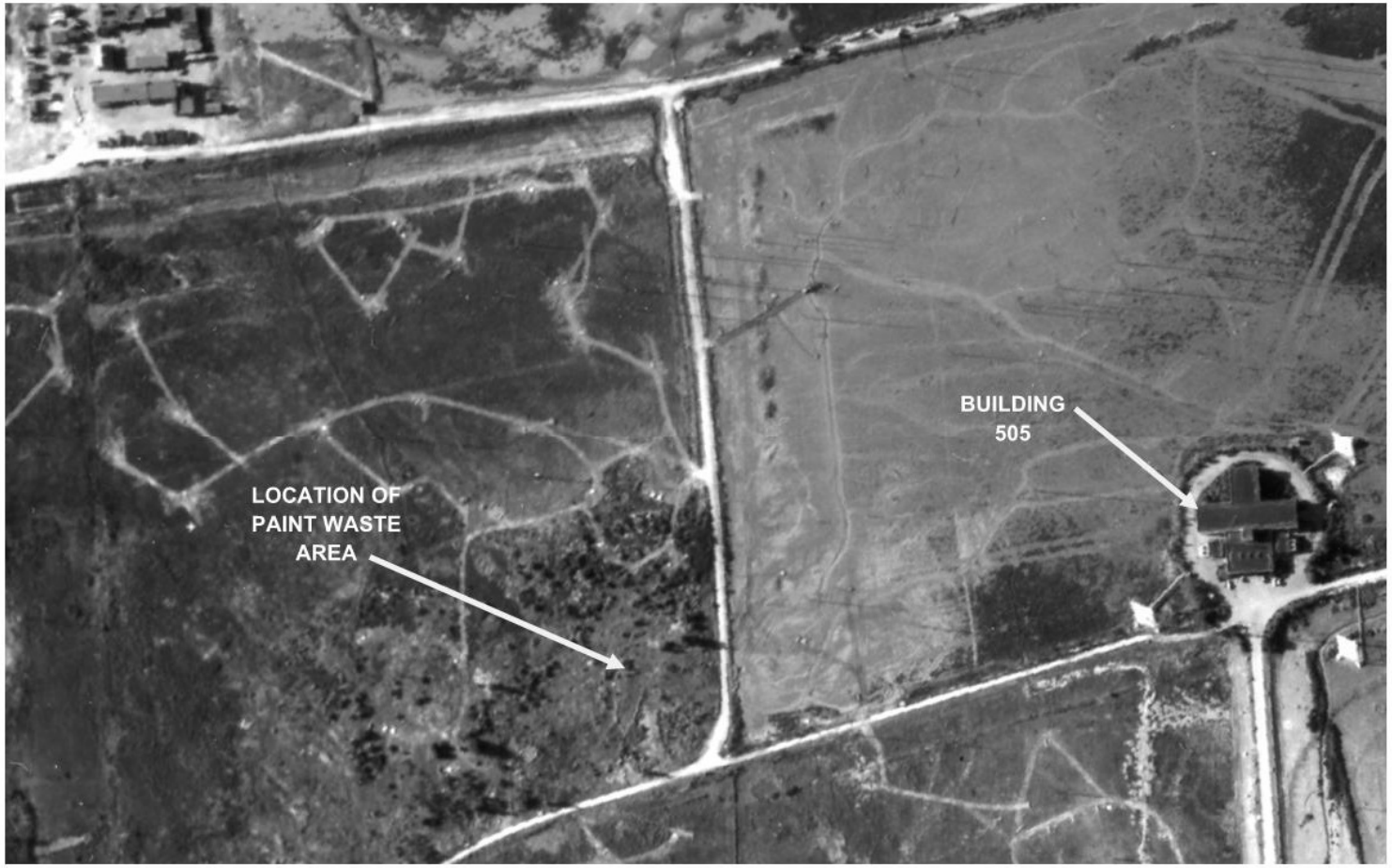
- Paint Waste Area and Vicinity Location
- Site History
- Remedial Investigation Objectives and Methods
- Remedial Investigation Results
- Project Status and Schedule

Paint Waste Area and Vicinity Location and History



Paint Waste Area and Vicinity History

- 2002 US Fish and Wildlife Service survey led to discovery of paint waste area
- Paint waste area most likely a result from dumping by shipyard personnel from nearby paint manufacturing facility (Building 503)
- 1949 aerial photograph shows disturbed/upland area
- Landfill opened in the late 1940s



Paint Waste Area and Vicinity History (Continued)

- 2002 – Site discovery during US Fish and Wildlife Service surveys at Transfer Parcel XVI
- 2003 – Initial surveys in June estimated approximately 90 cubic yards of paint waste debris and impacted soil. In October, approximately 520 cubic yards of paint waste and impacted soil were removed.
- 2004 – Preliminary Site Assessment / Site Investigation to assess the nature and extent of any remaining contamination
- 2007 – Time Critical Removal Action (TCRA) for chemical contamination in soil. Subsequent discovery of low-level radiological items and munitions and explosives of concern led to work stoppage and modification of work plans.
- 2009 – Time Critical Removal Action resumed

Paint Waste Area and Vicinity History (Continued)

2009 – 2012 PWA Time Critical Removal Action:

- **2009 – 2012**

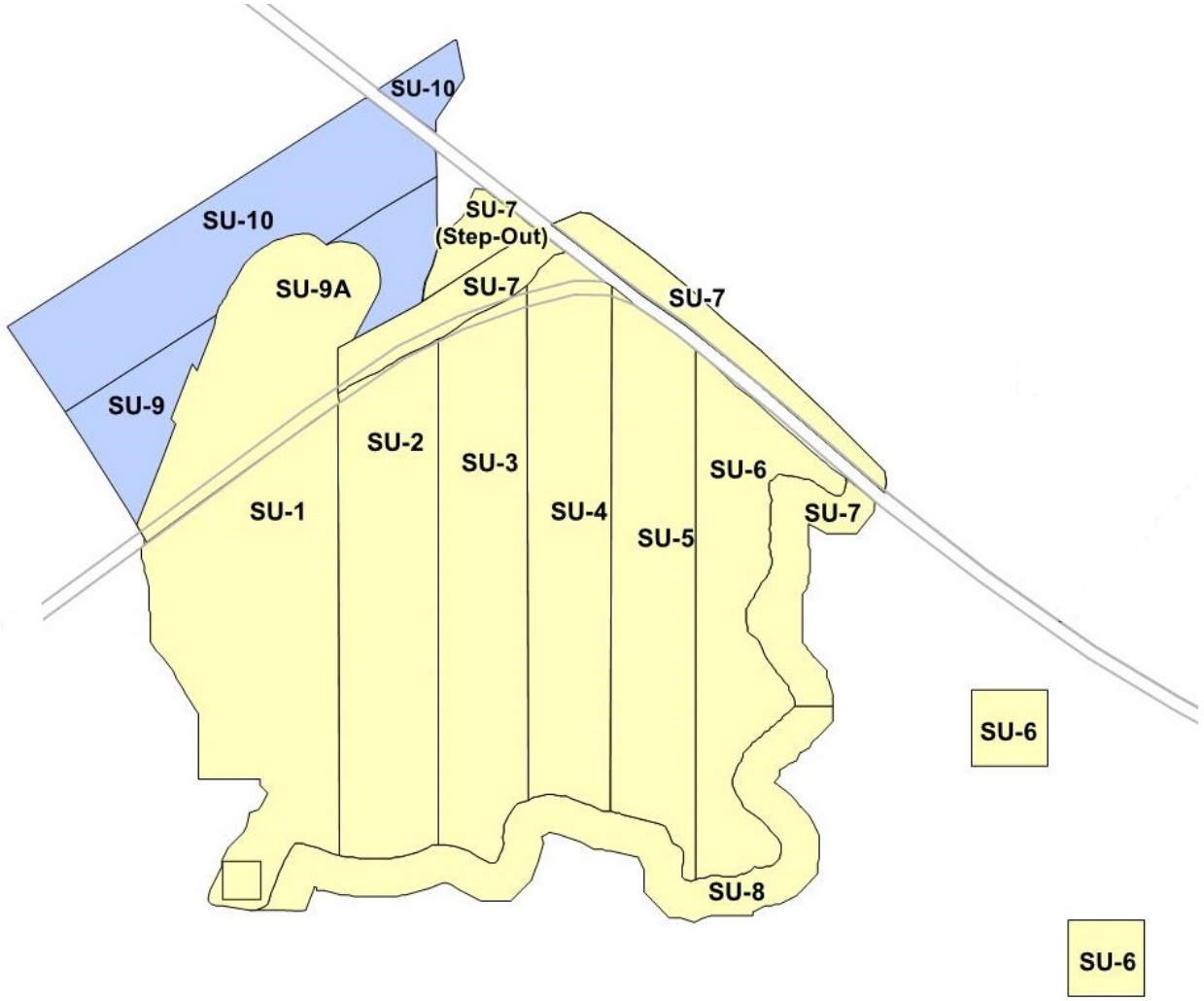
Investigation of metallic and radiological anomalies within survey units (SUs) 1 through 8 resulted in removal of 1,187 low-level radiological items and 17 munitions items.

  – 29,450 cubic yards of soil removed
  – Maximum depth of 8 feet bgs

- **2011 – 2012**

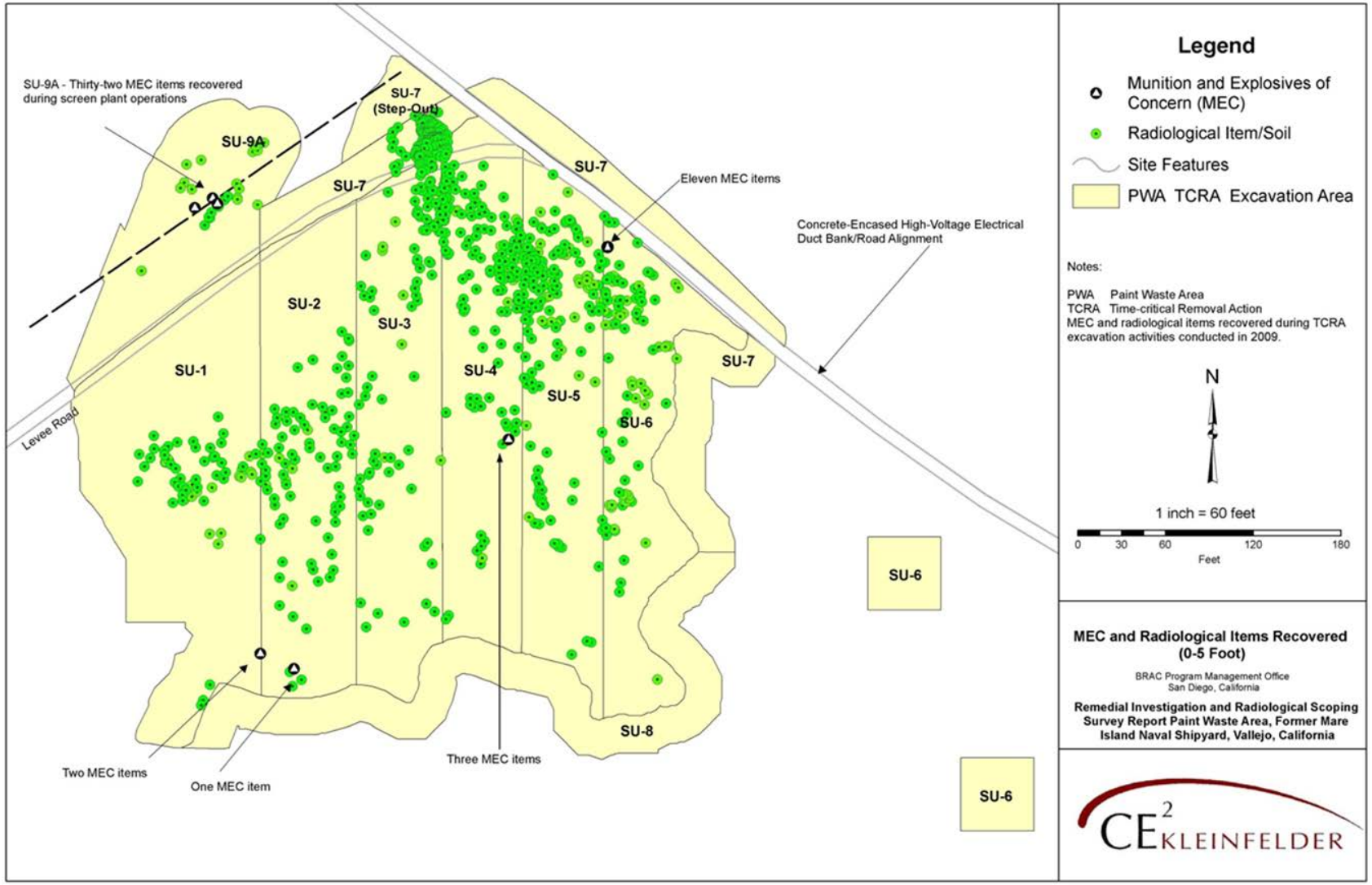
Surface investigation of metallic and radiological anomalies in SUs 9 and 10. TCRA expanded to SU 9A and resulted in the recovery of an additional 14 low-level radiological items and 35 munitions items.

  – 2,200 cubic yards of soil removed



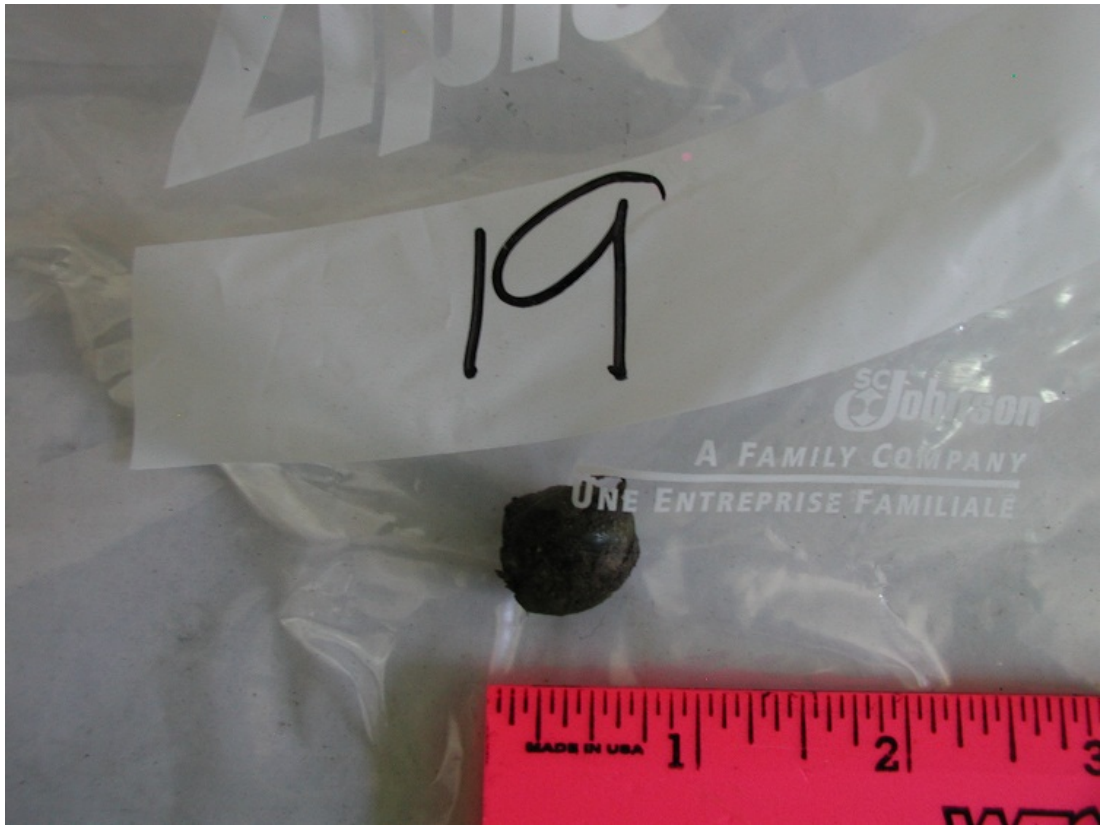
Paint Waste Area and Vicinity History (Continued)

- 2013 – Final Time Critical Removal Action Completion Report Concurrence
- 2014 – Unrestricted radiological release from the California Department of Public Health
- 2015 – Concurrence for no further investigation for munitions and explosives of concern by the Naval Ordnance Safety and Security Activity

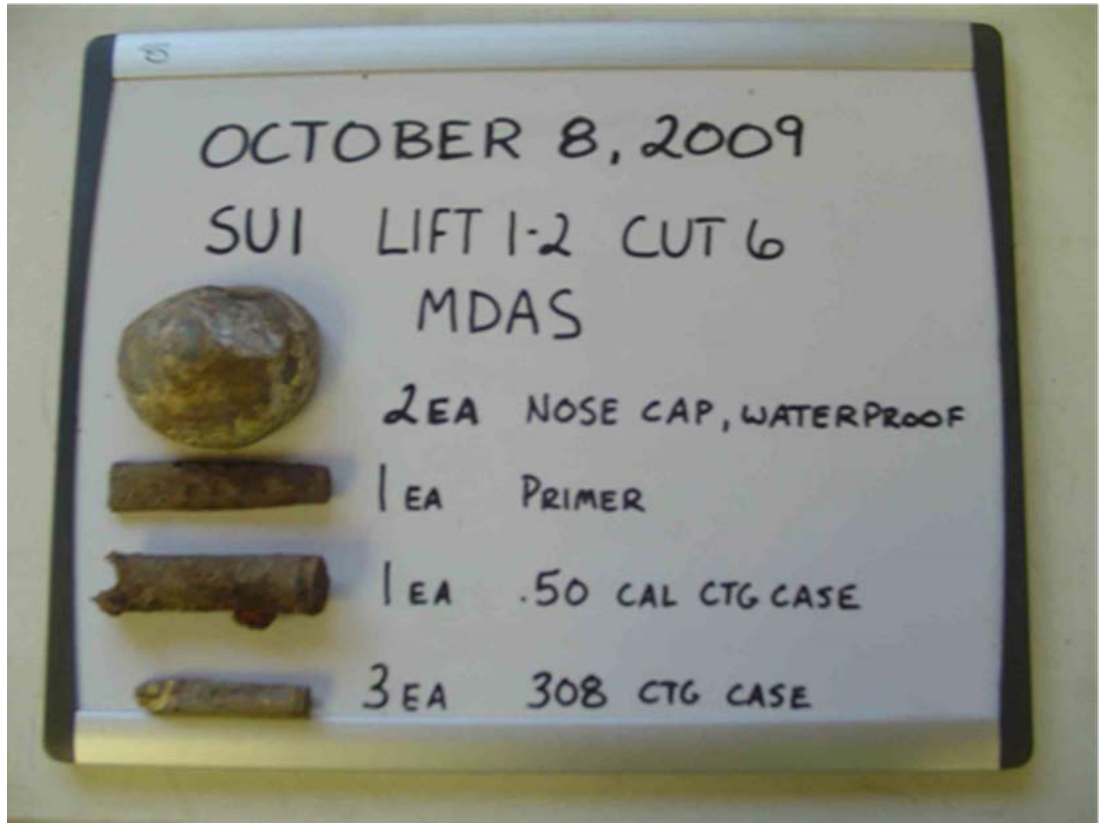


Paint Waste Area and Vicinity History (Continued)

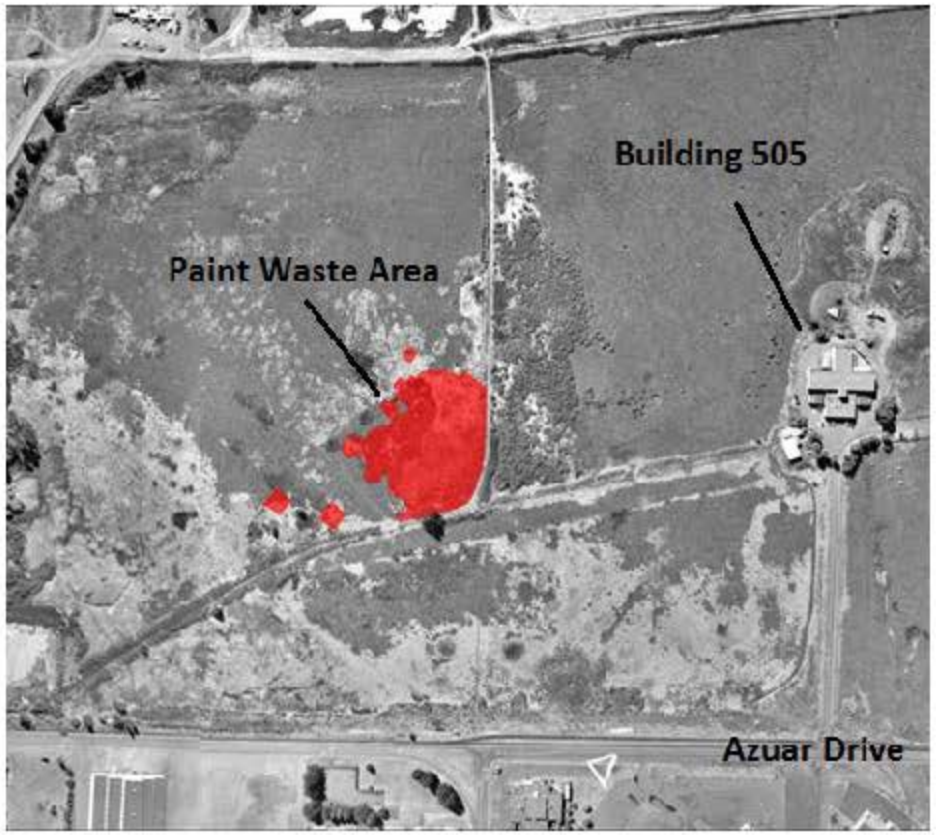
Typical Low-Level Radiological Item Recovered

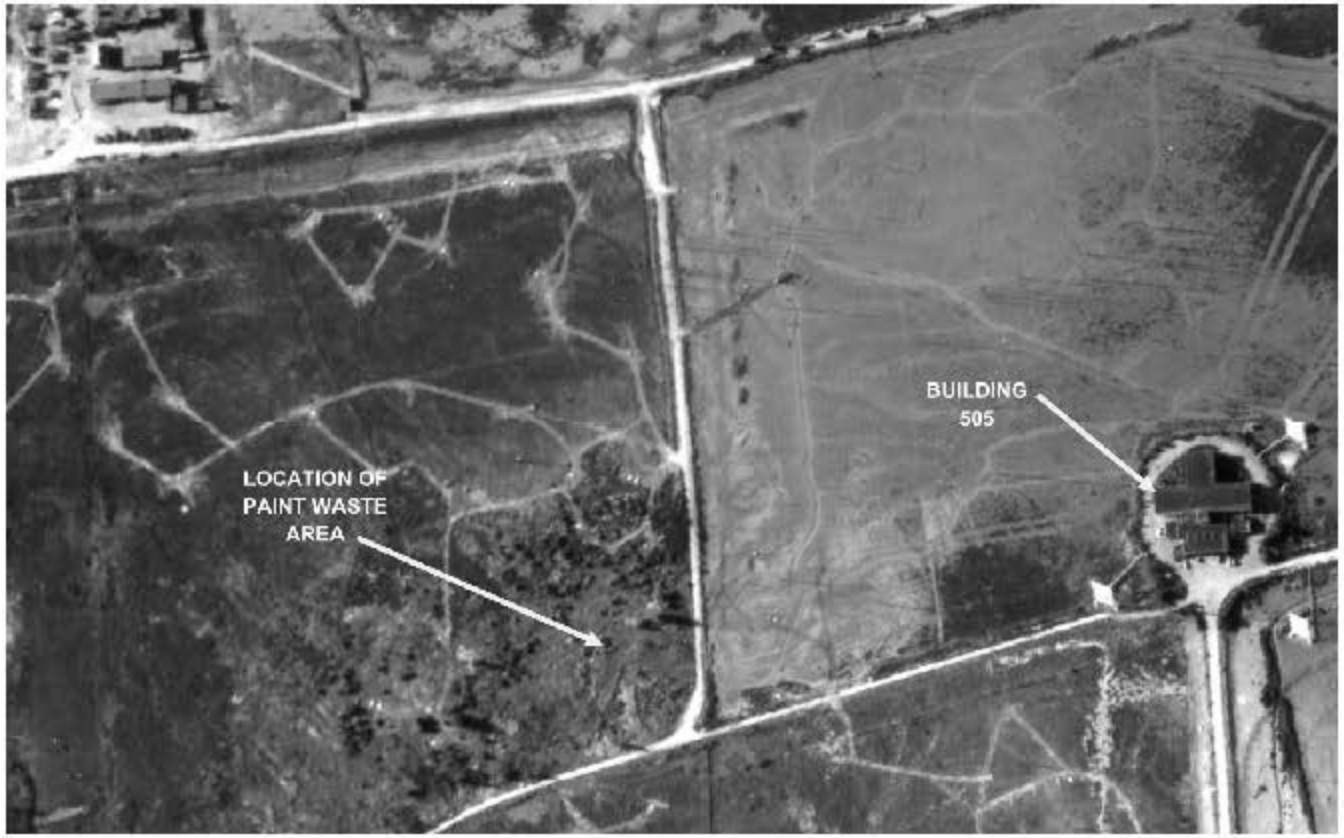


Recovered Material Documented As Safe



Paint Waste Area and Vicinity History (Continued)





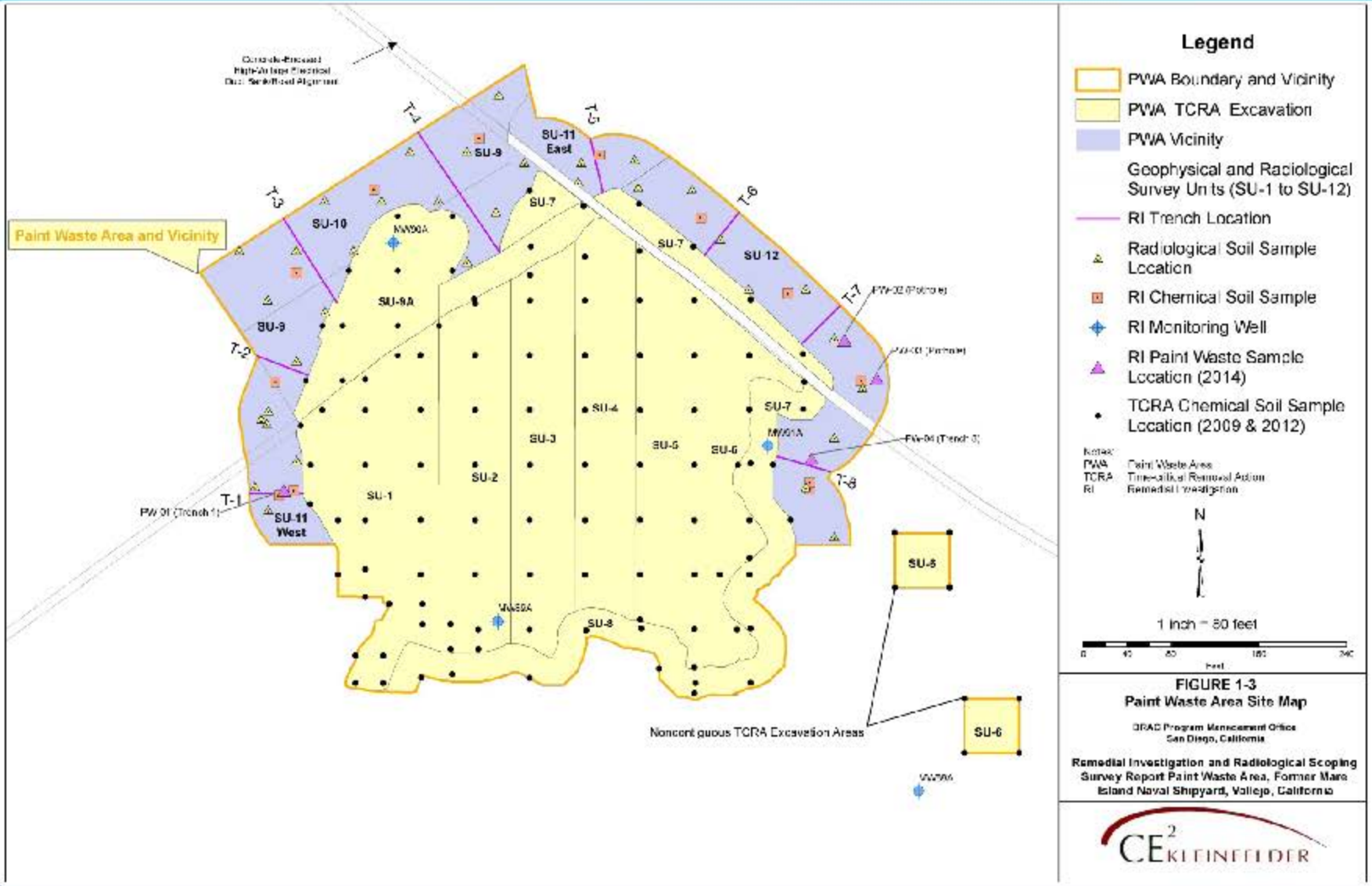
Remedial Investigation Objectives

- The Remedial Investigation objectives were to:
- (1) verify that the TCRA excavation reached the extent of the paint waste, radiological items and munitions and explosives of concern;
- (2) characterize the nature and extent of radiological and munitions items, and radiological/chemical contamination in surface soil, subsurface soil, and groundwater;
- (3) update the conceptual site model
- (4) characterize the potential risk from exposure to radiological contamination and munitions and explosives of concern, if present;
- (5) conduct a baseline human health risk assessment and screening level ecological risk assessment to evaluate risk from exposure to chemical contamination in the soil and groundwater; and
- (6) provide recommendations for future work including the development of remedial action objectives for the feasibility study.

Remedial Investigation Methods

1. SITE PREPARATION: Vegetative cover was cut manually and exclusionary fencing was installed with biological monitoring for salt marsh harvest mouse avoidance.
2. SURVEYS: Surface surveys were performed for radiological items and munitions; all confirmed anomalies were excavated.
3. SOIL SAMPLING: Surface (0-0.5 ft) soil samples were collected from 30 locations and analyzed for radioactivity; Additional surface and subsurface (2-4 ft) soil samples were collected from 10 locations and analyzed for chemicals of concern.
4. TRENCHING: 8 trenches, measuring 3 ft wide by 4 ft deep, were excavated to a max depth of 4 feet bgs. In each trench, radiological and geophysical surveys were performed at 1 ft intervals and excavated soil was screened for radiological and munitions items. Additional sample collection of residual paint waste that was discovered in the trenches.
5. MONITORING WELLS: 4 groundwater wells were installed and groundwater samples were collected/analyzed for chemical of concern and radioactivity.
6. RISK ASSESSMENTS: Performed baseline human health and screening level ecological risk assessments using chemical concentrations from remedial investigation and Time Critical Removal Action data.

Remedial Investigation Methods



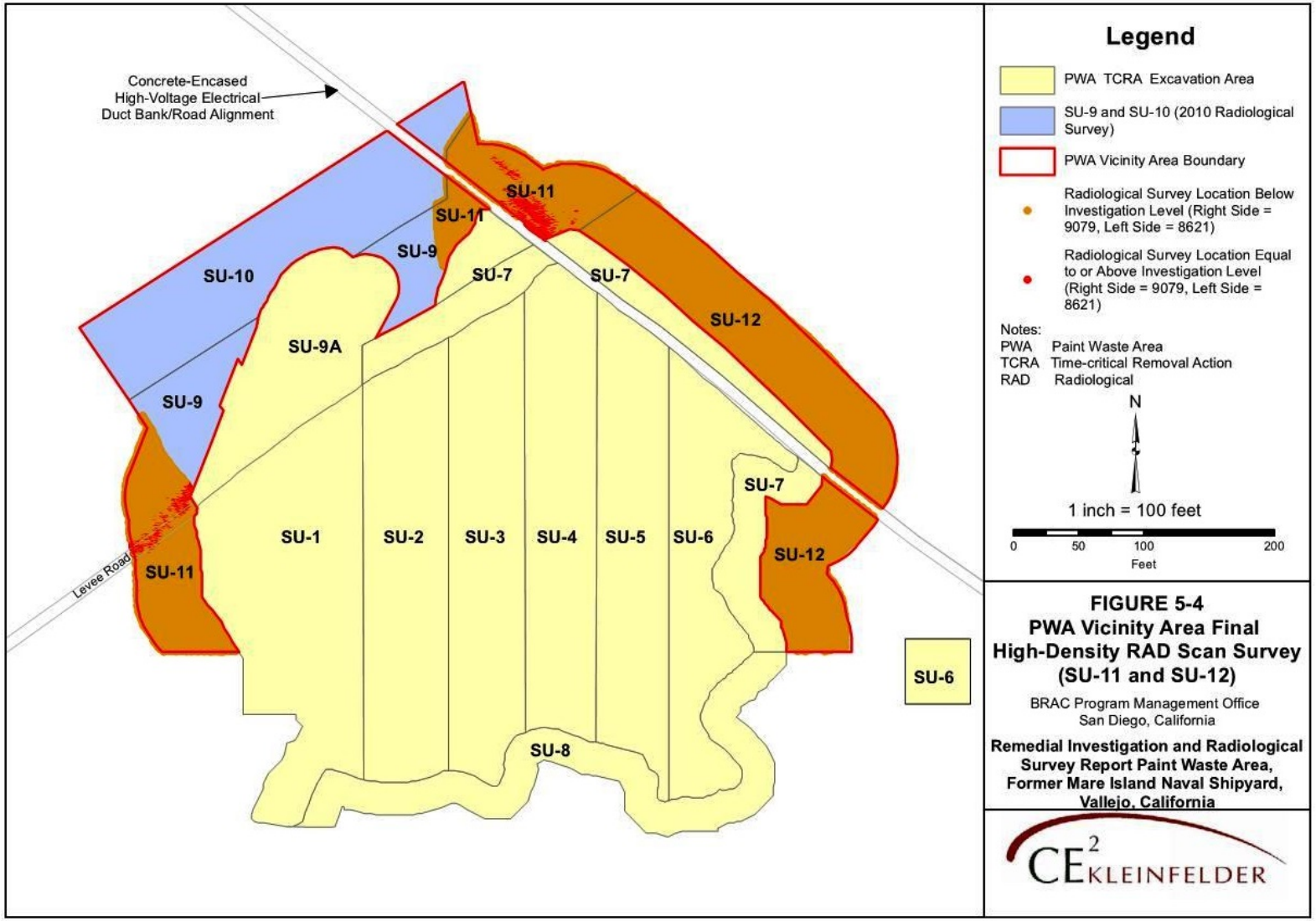
Remedial Investigation Methods

Geophysical Survey Equipment

Radiological Survey Equipment

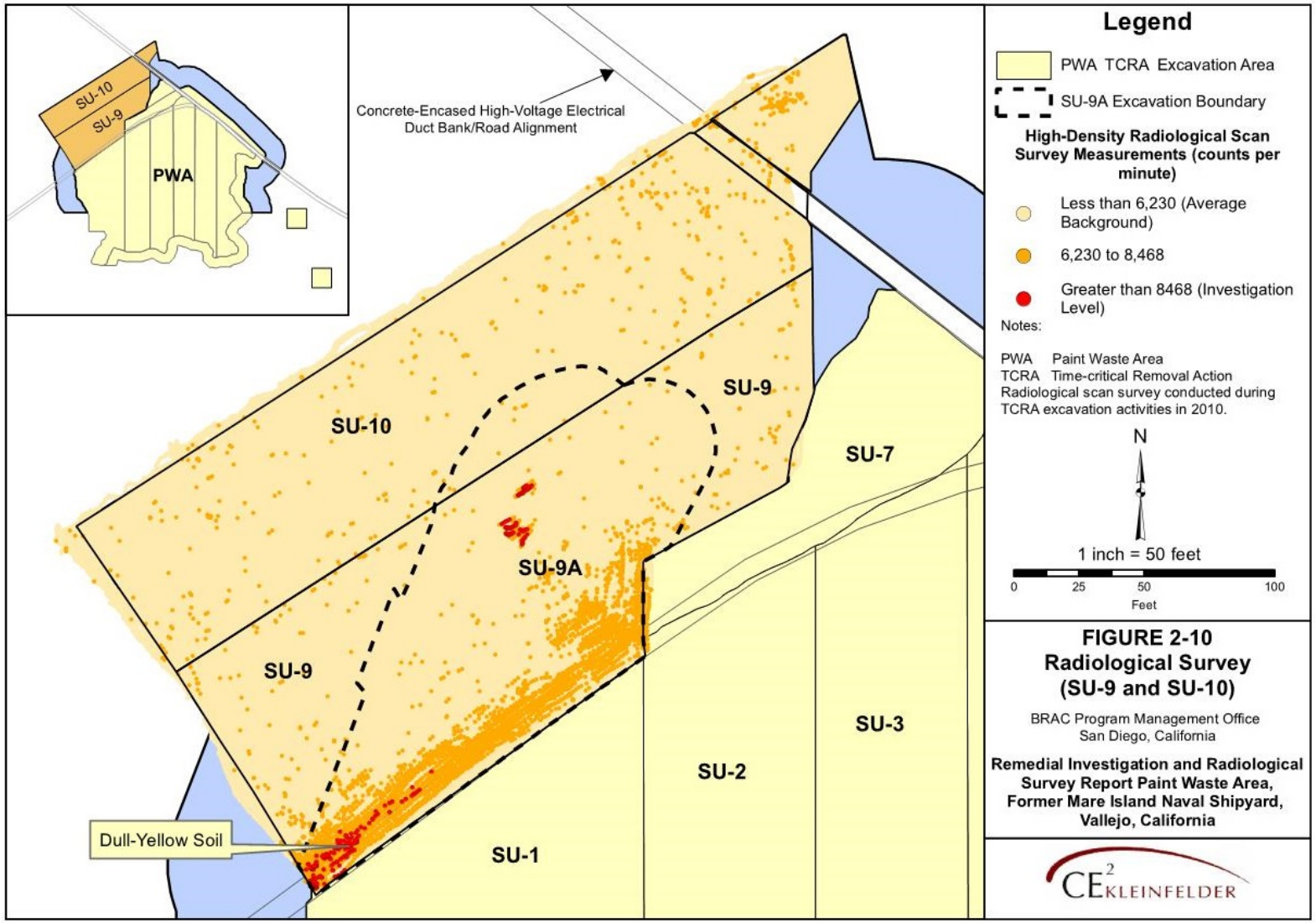
Radiological Scoping Survey Findings

- No radiological items were encountered in survey units 11 and 12 or in the subsurface trenches
- Radiation survey measurements in the subsurface trenches were below the investigation level
- Naturally occurring potassium isotope K40 is present
- Radioactive elements were not detected above the project action limit in any of the 30 soil samples



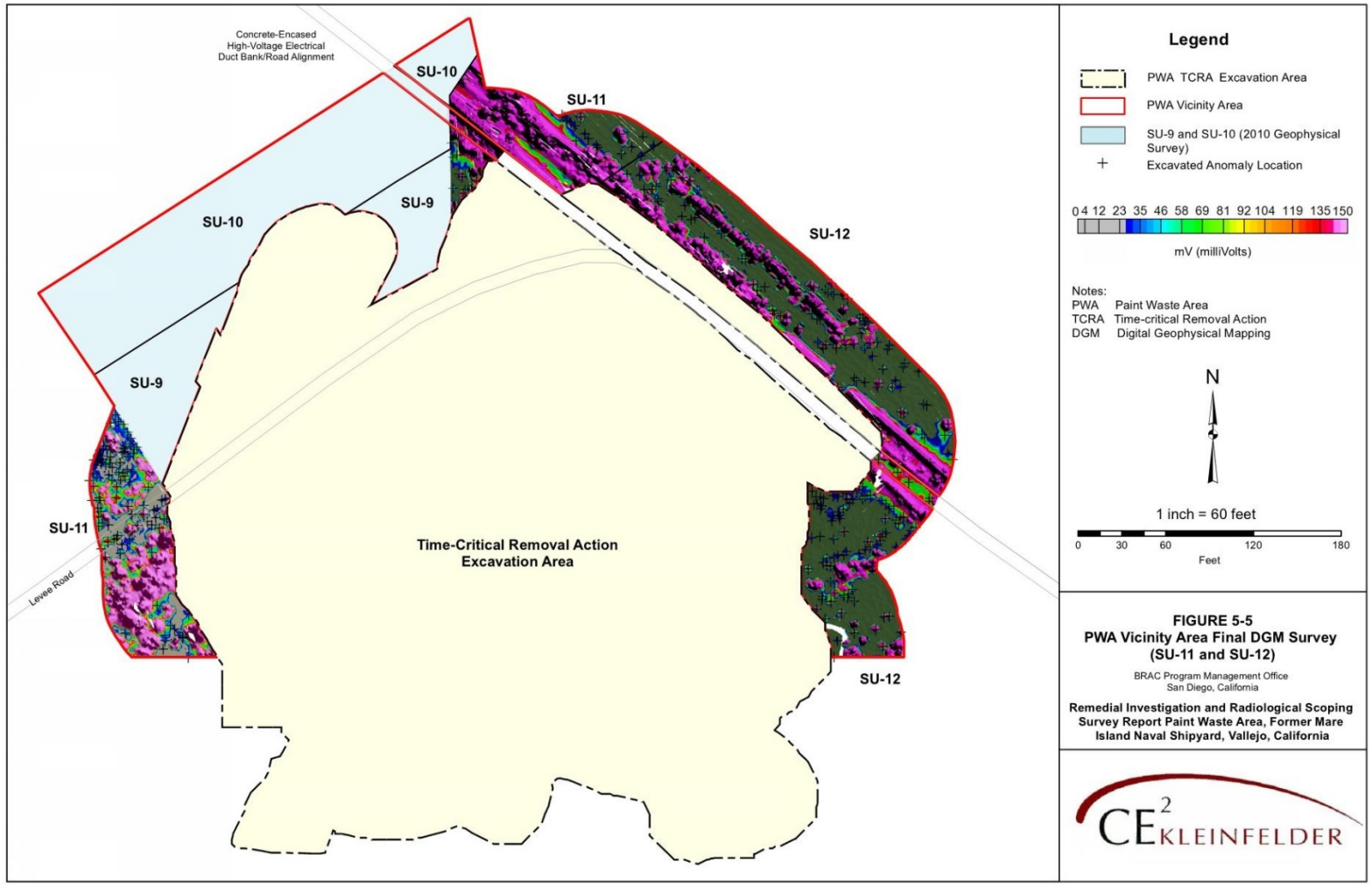
Radiological Scoping Survey Findings

- RI Results supplement previous results from survey units 9 and 10 where no radiological items were recovered (except for SU-9A)



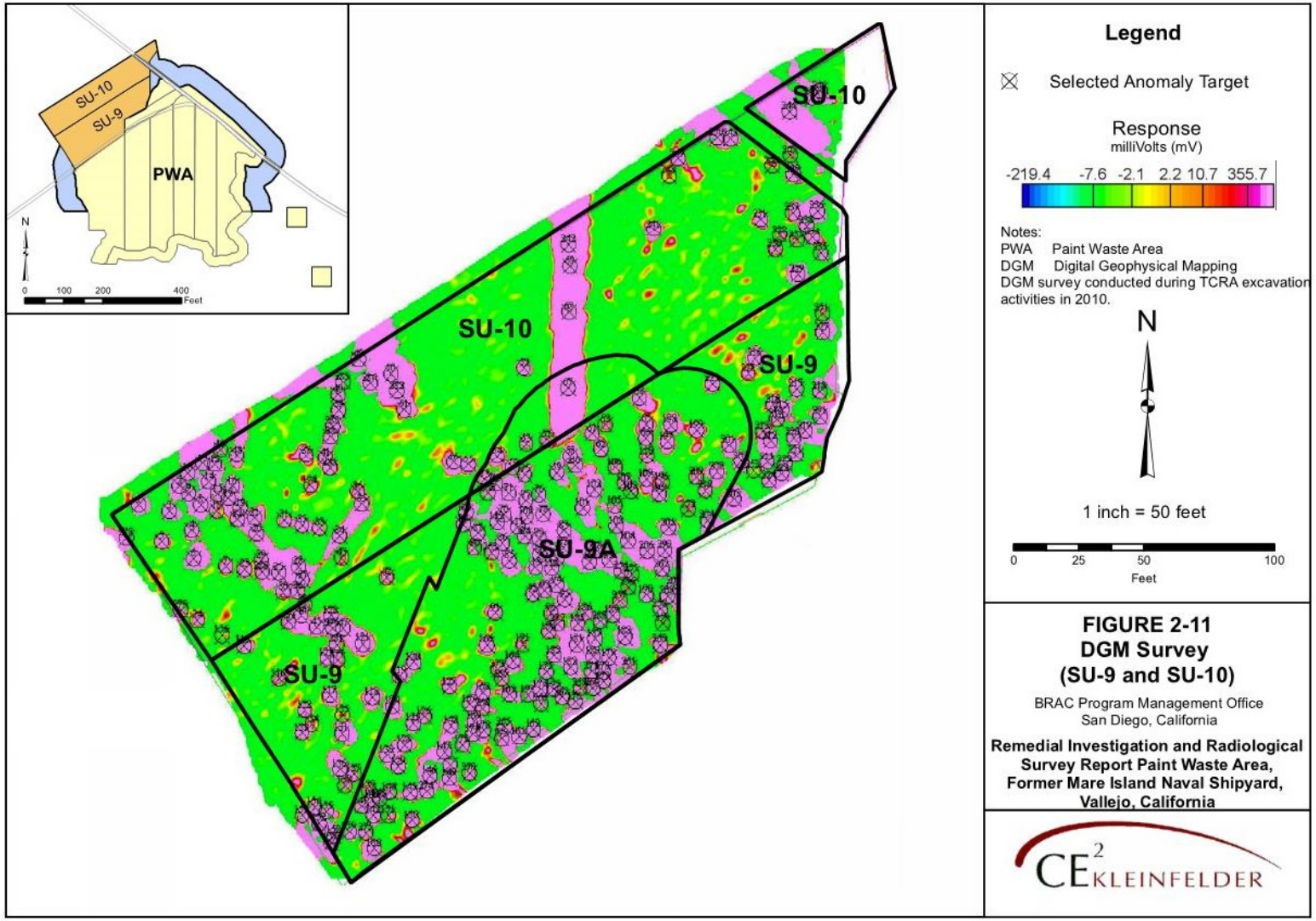
Digital Geophysical Mapping Survey Findings

- No munitions and explosives of concern or material designated as safe were recovered in survey units 11 and 12 or in the subsurface trenches
- All anomalies investigated as a result of the digital geophysical mapping survey results were scrap metal debris (nuts, bolts, wire, nails)

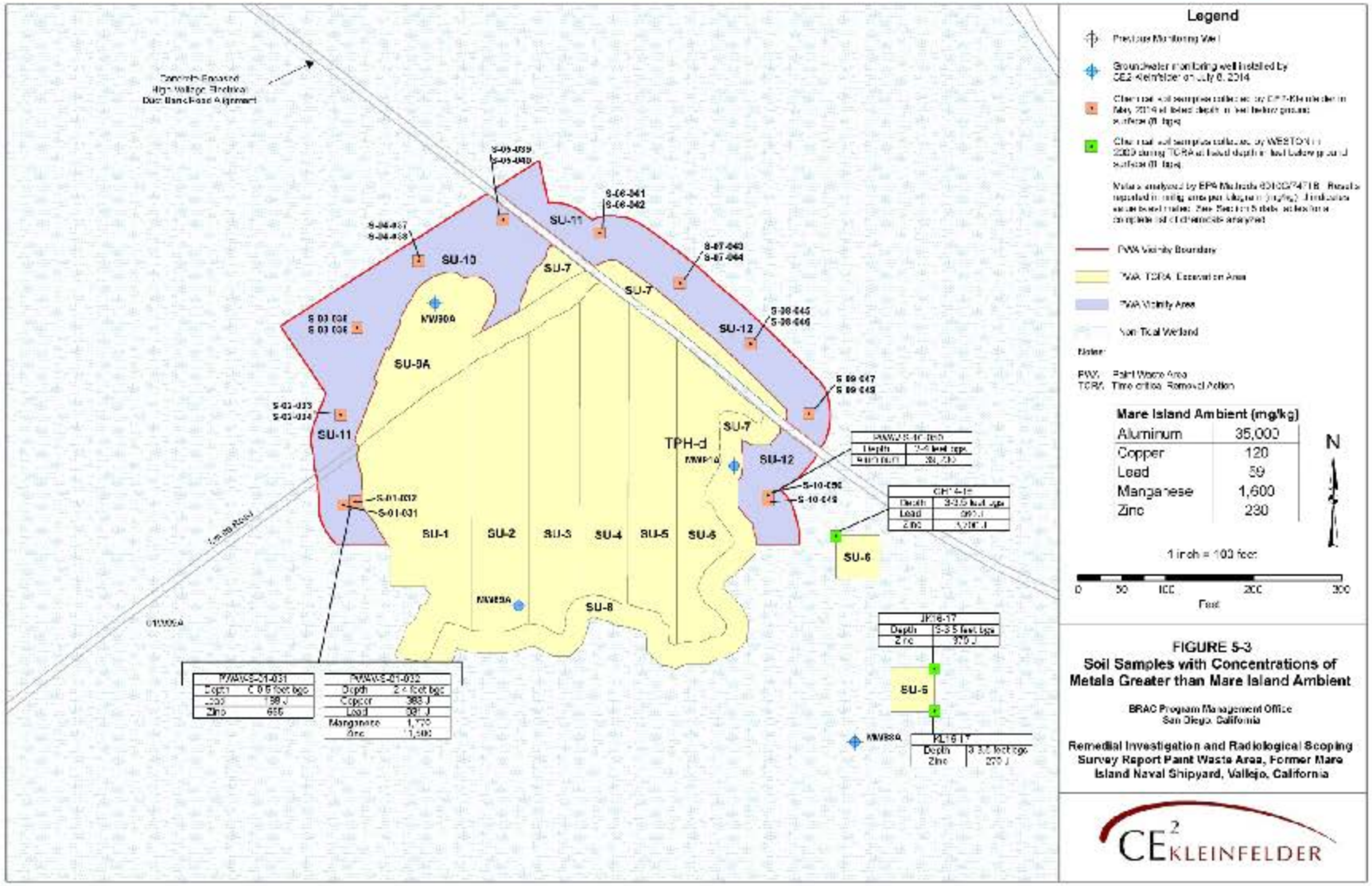


Digital Geophysical Mapping Survey Findings

- RI results support previous 2010 findings from survey units 9 and 10 where no MEC items were recovered (except for SU-9A)



Soil Sampling Results

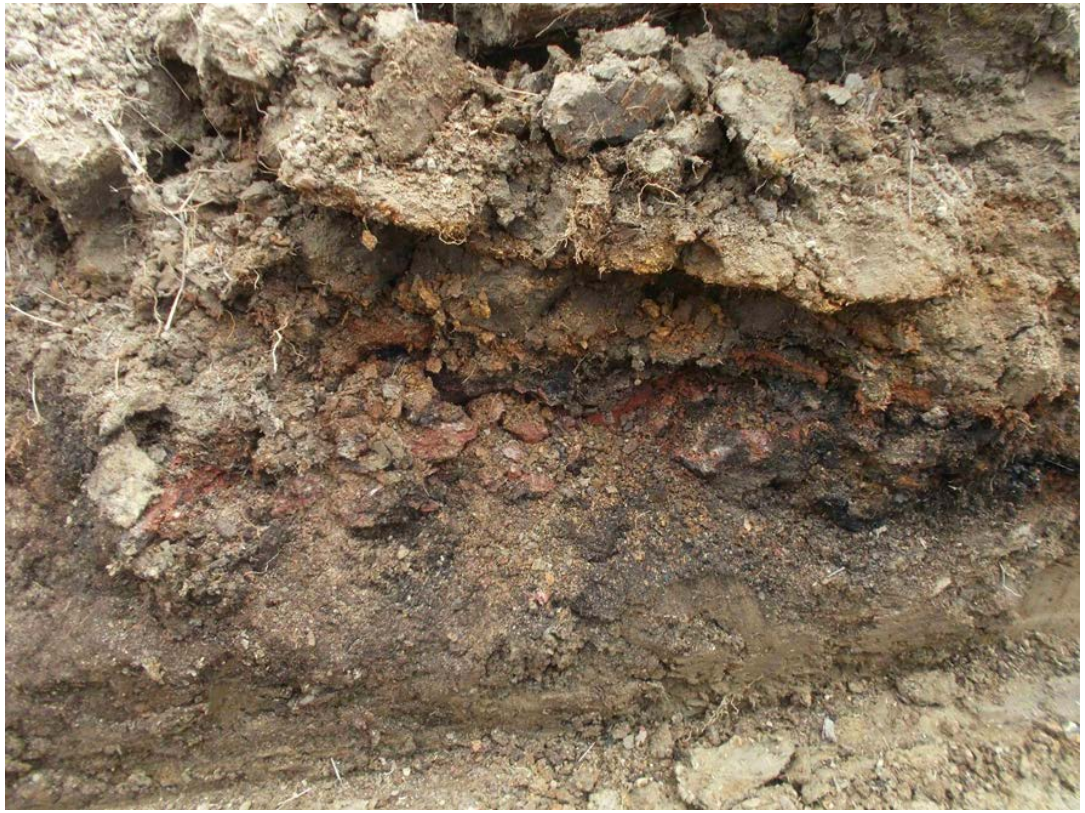


Trench Investigation Results

- No munitions or material designated as safe were encountered in the eight trenches
- No radiological items were encountered in the eight trenches and radiation survey measurements within the trenches were below the investigation level
- Residual paint waste was observed in Trench 1, Trench 8, and two anomaly excavation potholes at depths ranging between one to three feet below ground surface.
- Paint waste and soil at deeper depths below the paint waste was sampled and analyzed for chemicals of concern.

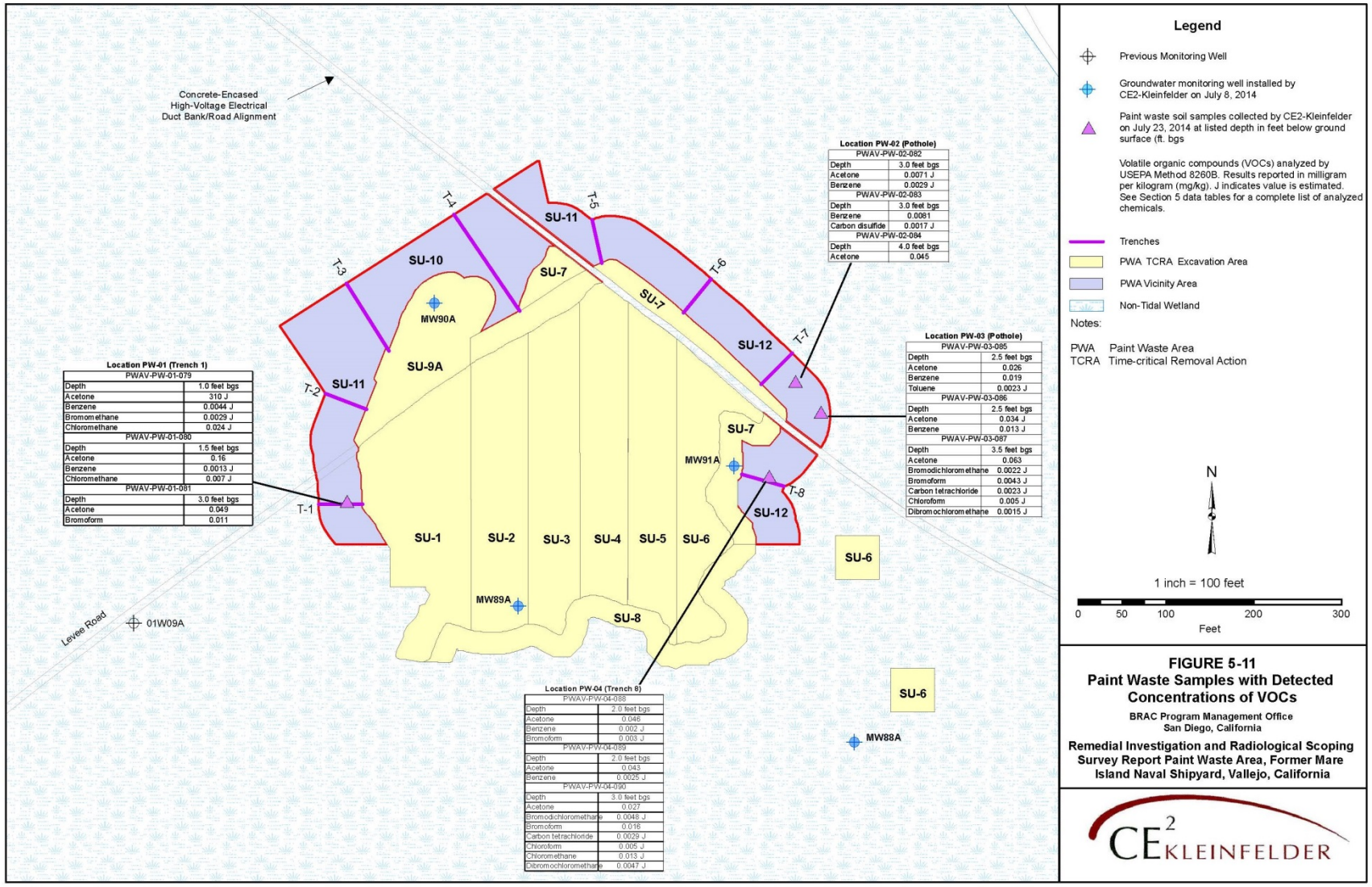
Trench Investigation Results (continued)

Paint waste observed in Trench 1

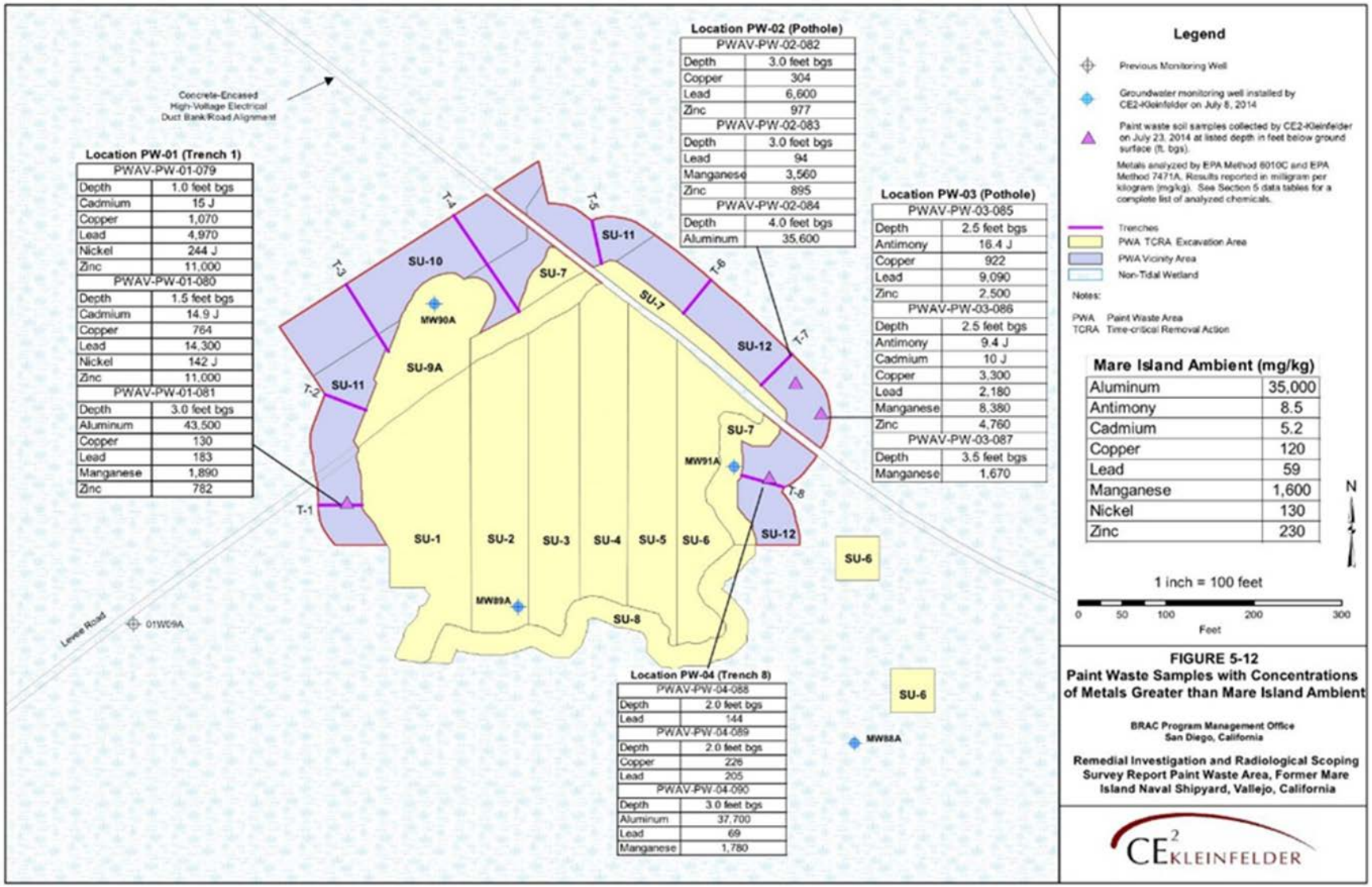


Paint waste observed in Trench 8

Trench Investigation Results (continued)
Paint Waste Sample Results



Trench Investigation Results (continued)
Paint Waste Sample Results



Location PW-01 (Trench 1)

PWAV-PW-01-079	
Depth	1.0 feet bgs
Cadmium	15 J
Copper	1,070
Lead	4,970
Nickel	244 J
Zinc	11,000
PWAV-PW-01-080	
Depth	1.5 feet bgs
Cadmium	14.9 J
Copper	764
Lead	14,300
Nickel	142 J
Zinc	11,000
PWAV-PW-01-081	
Depth	3.0 feet bgs
Aluminum	43,500
Copper	130
Lead	183
Manganese	1,890
Zinc	782

Location PW-02 (Pothole)

PWAV-PW-02-082	
Depth	3.0 feet bgs
Copper	304
Lead	6,600
Zinc	977
PWAV-PW-02-083	
Depth	3.0 feet bgs
Lead	94
Manganese	3,560
Zinc	895
PWAV-PW-02-084	
Depth	4.0 feet bgs
Aluminum	35,600

Location PW-03 (Pothole)

PWAV-PW-03-085	
Depth	2.5 feet bgs
Antimony	16.4 J
Copper	922
Lead	9,090
Zinc	2,500
PWAV-PW-03-086	
Depth	2.5 feet bgs
Antimony	9.4 J
Cadmium	10 J
Copper	3,300
Lead	2,180
Manganese	8,380
Zinc	4,760
PWAV-PW-03-087	
Depth	3.5 feet bgs
Manganese	1,670

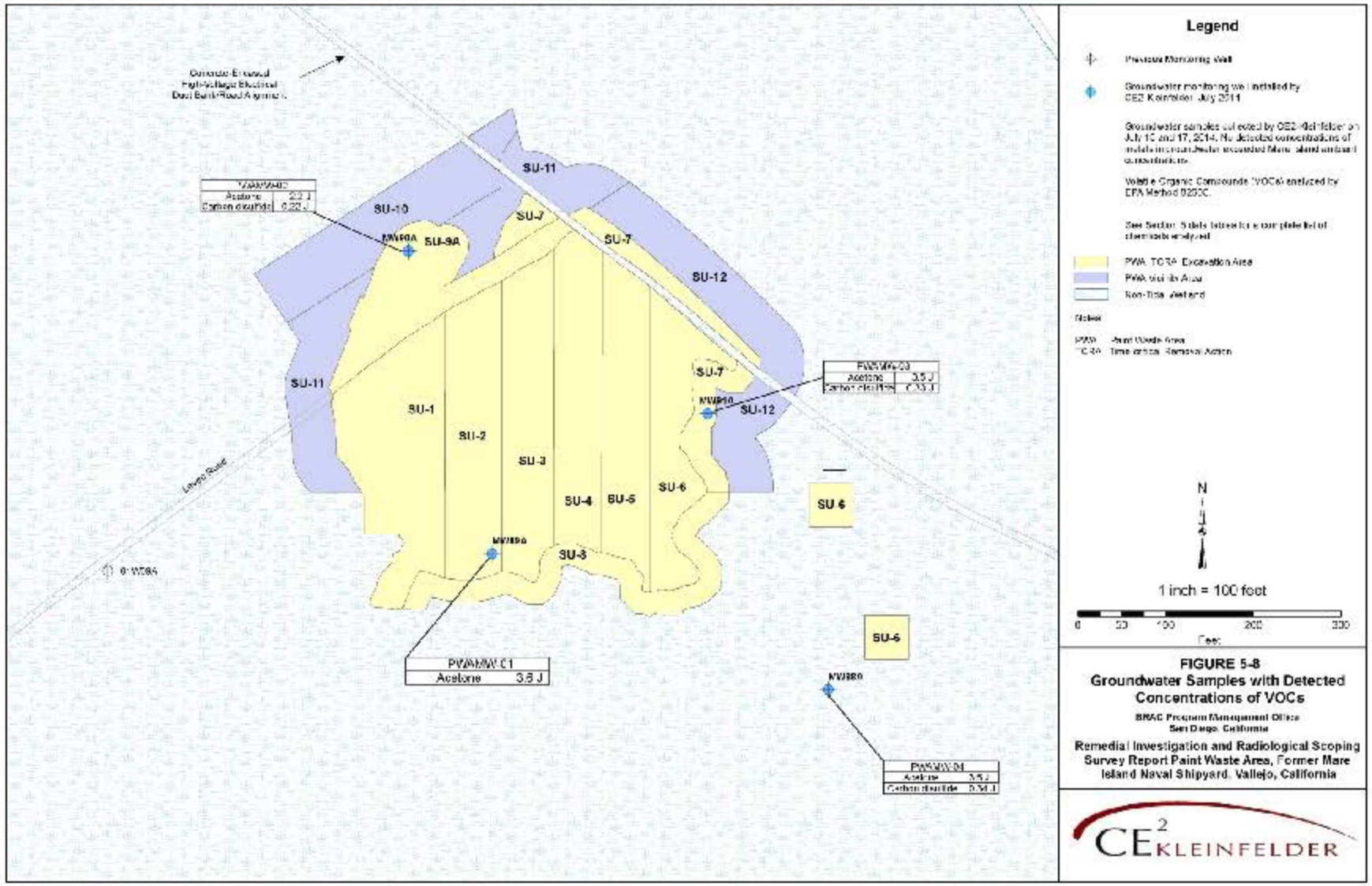
Location PW-04 (Trench 8)

PWAV-PW-04-088	
Depth	2.0 feet bgs
Lead	144
PWAV-PW-04-089	
Depth	2.0 feet bgs
Copper	226
Lead	205
PWAV-PW-04-090	
Depth	3.0 feet bgs
Aluminum	37,700
Lead	69
Manganese	1,780

Mare Island Ambient (mg/kg)

Aluminum	35,000
Antimony	8.5
Cadmium	5.2
Copper	120
Lead	59
Manganese	1,600
Nickel	130
Zinc	230

Groundwater Sampling Results

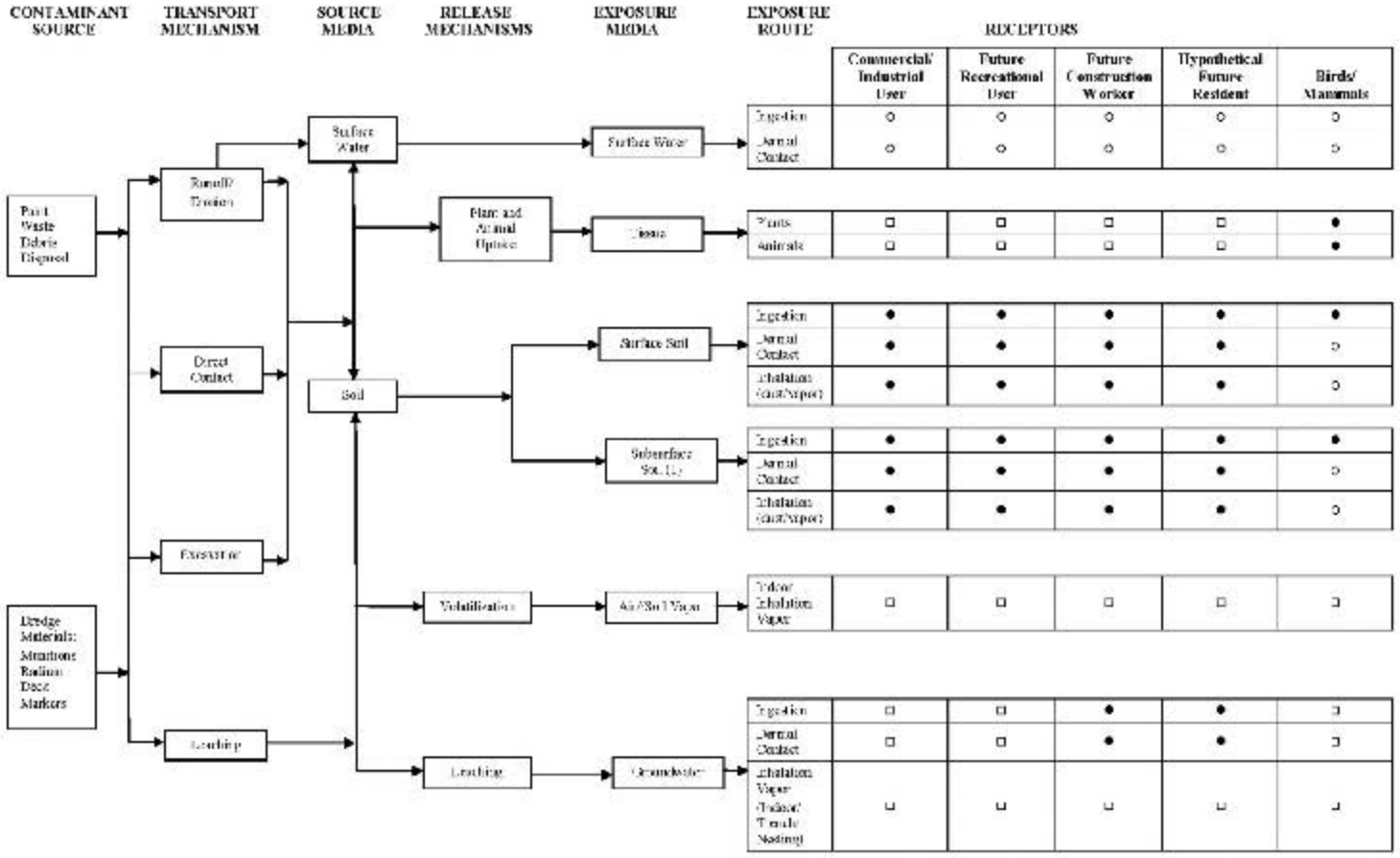


Human Health Risk Assessment

Human Health Risk Assessment Inputs:

- TCRA and RI Data
- Current and future use as open space
- Multiple receptor scenarios:
  - Commercial/industrial workers
  - Construction workers
  - Recreational users
  - Hypothetical residents
- Media: surface soil, subsurface soil, non contiguous excavation area SU-6 subsurface soil, and groundwater

Human Health Risk Assessment Results



LEGEND:

- ○ Complete exposure pathway; could not be quantified in risk assessment.
- ● Complete exposure pathway; quantified in risk assessment.
- □ Incomplete exposure pathway.
- 1 Assumes subsurface soil brought to surface under future human exposure scenario; assumes burrowing to 2 ft bgs by animals.

Human Health Risk Assessment Results

- Risk to typical recreational receptors from exposure to surface soil was considered acceptable. (recreational assumptions based on site use by wildlife managers or recreational activity like trail hiking and wildlife viewing)

- Risk to commercial/industrial receptors, construction workers, and hypothetical residents exceeded the total cancer risk and non cancer hazard index criteria for both surface and subsurface soil; however, risk is overestimated because metals concentrations that were driving the risk (maximum concentrations detected) were lower than ambient levels.

- Lead concentrations in surface and subsurface soil are estimated to pose a potential risk to the construction worker and hypothetical future resident.

- Lead concentrations in subsurface soil at the SU-6 non contiguous areas also pose a potential risk to the commercial/industrial worker, construction worker, and hypothetical future resident.

Human Health Risk Assessment Results (continued)

- Groundwater total cancer risk and non cancer risk hazard exceed criteria for hypothetical residents using groundwater as potable water; however risk is overestimated because metals concentrations (primarily arsenic and chromium) detected in groundwater are consistent with ambient concentrations.

- The Navy determined that shallow groundwater beneath the site meets the criteria for an exception to the State Sources of Drinking Water Policy based on high concentrations of total dissolved solids. The Regional Water Board concurred with this determination in May 2015. Domestic water on Mare Island is supplied by the City of Vallejo. Ingestion of shallow groundwater is not considered a complete exposure pathway.

Screening Level Ecological Risk Assessment

- Screening level ecological risk assessment was conducted to evaluate risk to plants, birds, and mammals native to non tidal wetland habitat.
- Exposure pathways: soil ingestion, inhalation, and direct contact and uptake by terrestrial vegetation from soil
- Receptors: mallard, killdeer, great blue heron, and salt marsh harvest mouse were chosen as representative of non tidal wetland habitat receptors for food chain analysis to evaluate risks to waterfowl, shorebirds, wading birds, and small mammals.

Screening Level Ecological Risk Assessment Results

- Chemicals of potential ecological concern in surface soil (0 to 0.5 foot below ground surface) at the Paint Waste Area and Vicinity pose a negligible risk to avian or mammalian receptors.
- Chemicals of potential ecological concern in shallow soil (0 to 2 feet bgs) at the Paint Waste Area and Vicinity pose a risk to killdeer and heron bird species; however, exposure to shallow soil is unlikely. Metals results driving risk (paint waste samples) were detected below 1 foot bgs and in isolated areas. Bird species most likely not exposed on a population level since they will not visit those areas frequently.

Radiological Risk Assessment and Munitions and Explosives of Concern Hazard Assessment

- The residual radioactive materials model (RESRAD) was used to calculate the total potential cancer risk from residual radioactivity at the PWA. Model used maximum residual concentrations of Ra-226 (SU-1) and Sr-90 (SU-7) and calculated a total potential cancer risk of 9.52×10^{-6} which is within the US EPA risk management range. None of the radiological soil samples collected from the PWA Vicinity Area had concentrations exceeding the project action limits defined in the Work Plan.

- The munitions and explosives of concern hazard assessment for the PWA was prepared using the munitions investigation results and according to EPA guidance using the munitions hazard assessment workbook model.

- Munitions hazard assessment resulted in a Hazard Level Category 4 designation. Hazard Level Category 4 is the lowest possible hazard level category for a site with a history of munitions contamination and takes into account No Further Action with Land Use Controls. Implementation of Land Use Controls would be adequate to safely support the planned reuse as open space/non-tidal wetlands.

Next Step: Feasibility Study

- Next step in the CERCLA process after the Remedial Investigation is the Feasibility Study
- Evaluate remedial alternatives for the Paint Waste Area and Vicinity to prevent unacceptable risk to humans from

  1) potential exposure to munitions and explosives of concern as recommended by the results of the MEC hazard assessment;

  2) potential exposure of future construction workers and hypothetical future residential receptors to lead in surface and subsurface soil as indicated by the results of the human health risk assessment and;

  3) potential exposure of future commercial/industrial, future construction worker, and hypothetical future residential receptors to lead in the non-contiguous areas of SU-6.

Current Project Status and Schedule

- Currently finalizing the Remedial Investigation Report (responding to Agency comments)
- Final Remedial Investigation Report – May 2016
- Feasibility Study Report – November 2016
- Proposed Plan – February 2017
- Record of Decision/Remedial Action Plan – September 2017

Presentation Topics Covered

- Paint Waste Area and Vicinity Location
- Site History
- Remedial Investigation Objectives and Methods
- Remedial Investigation Results
- Project Status and Schedule

Acronyms and Abbreviations

BGS	Below ground surface
CERCLA	Comprehensive Environmental Response Compensation Liability Act
COPC	chemicals of potential concern
EPA	United States Environmental Protection Agency
FT	Feet
K40	Potassium Isotope 40
MEC	munitions and explosives of concern
PWA	Paint Waste Area
RAD	radiological
Ra-226	radium 226
RI	Remedial Investigation
RESRAD	residual radioactivity
Sr-90	strontium 90
SU	survey unit
TCRA	time-critical removal action
US	United States
UXO	unexploded ordnance

Attachment 2. Presentation Handout – Building 866 Area Commercial to Residential Reuse Remaining Work to be Performed Investigation Area C2

Building 866 Area

Commercial to Residential Reuse Remaining Work to be Performed

Investigation Area C2

Presented to
Mare Island Restoration Advisory Board

March 24, 2016

Discussion Topics

- **Former Building 866 (B866) Site Description**
- **Historical Investigations and Remedial Activities**
- **Implementation of Remedial Activities**
  - Underground Storage Tank (UST) M57 and Fuel-Oil Pipeline Segment (FOPL) E3/VAR/M57
    - Groundwater Conditions Following 2008 Remedial Activities
    - Soil Conditions Following 2012 Remedial Actions
- **Additional Requested Work**
  - 2016 Groundwater Conditions
- **Additional Monitoring Work**
- **Path Forward**
- **Questions**

Site Description

- **6.3 Acres**
- **Former Building 866 (Demolished in 2007-2008)**
  - Five-Story, 386,000-Square Foot Building
  - Surrounding Asphaltic Concrete Parking Areas
- **Historic Use**
  - Constructed in 1955 – Electrical / Electronic Shop
  - Electrical / Electronic Shop Closed in 1994
- **Future Use**
  - Per 2000 Land Use Plan – Industrial / Commercial Reuse
  - In 2005 – Land Use Changed to Residential
- **Potential Source Areas**
  - 40 Individual, Specialized Work Areas Within Facility
  - Nine Polychlorinated Biphenyl (PCB) Sites
  - Nine Fuel-Oil Pipeline (FOPL) Segments
  - Four USTs

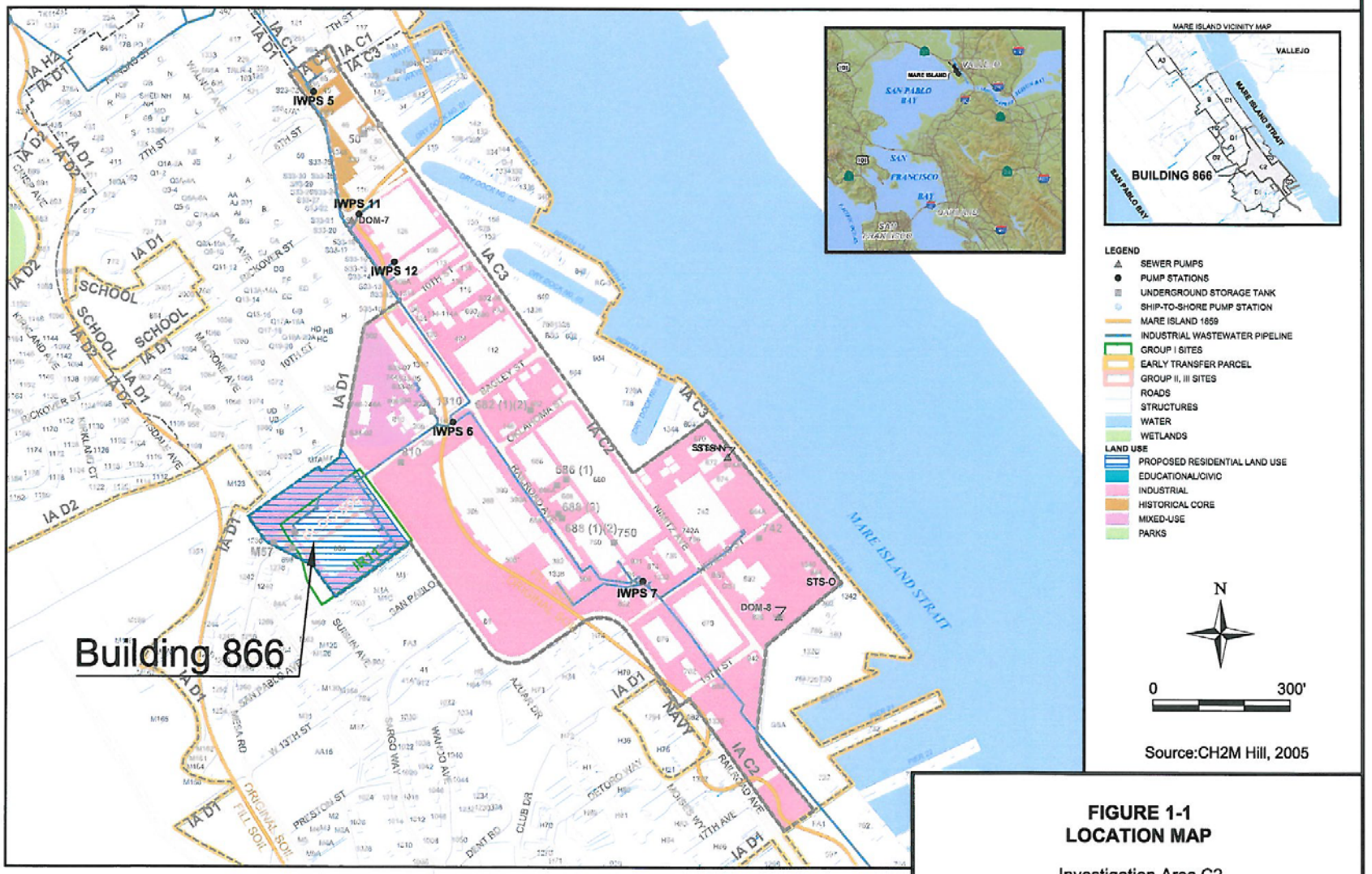


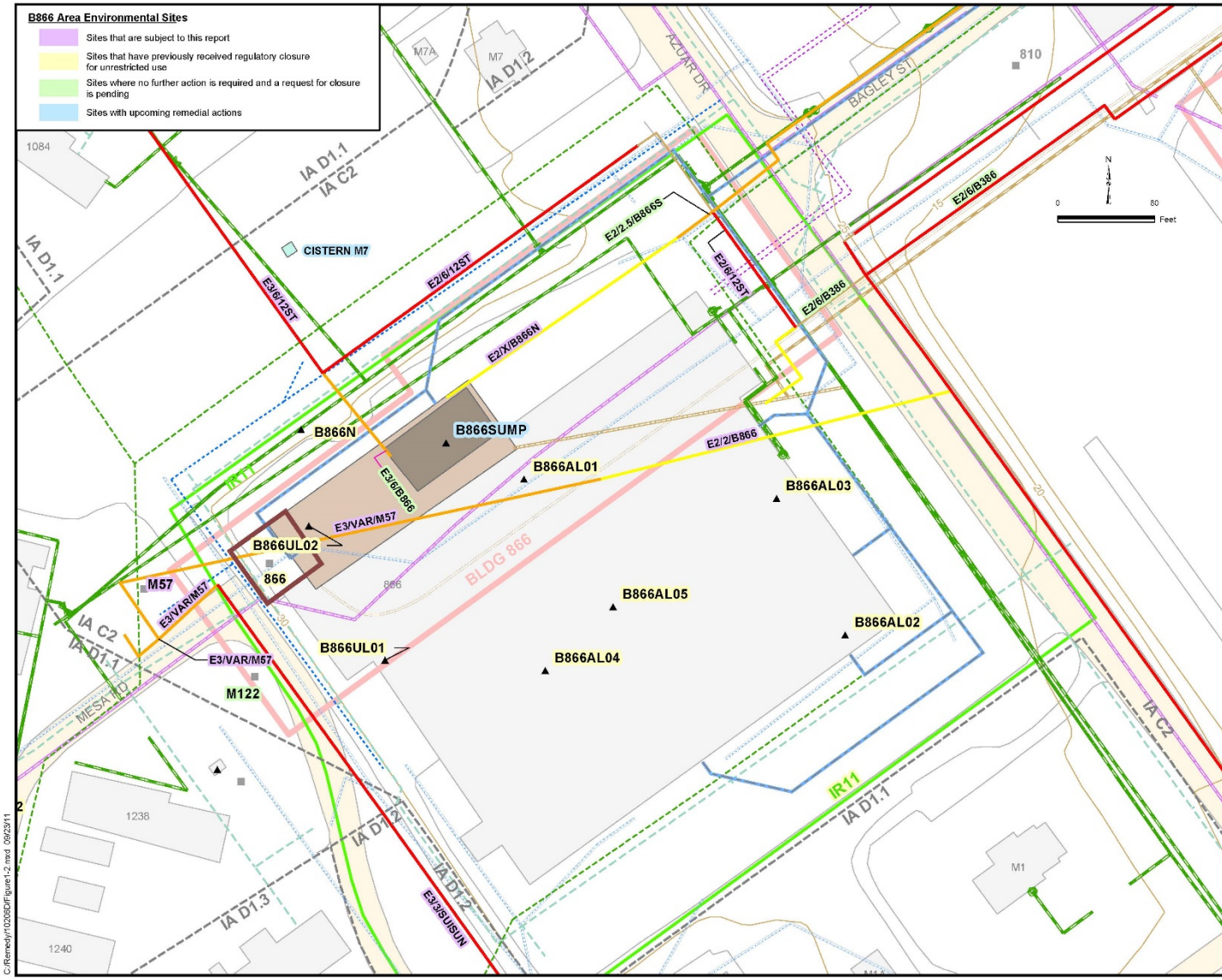
FIGURE 1-1
LOCATION MAP

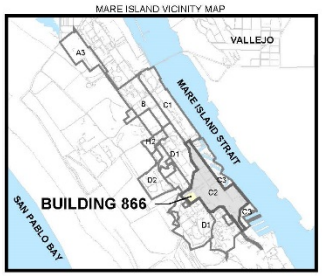
Investigation Area C2
Lennar Mare Island, Vallejo, California

REMEDY ENGINEERING, INC.

101206DFIG1.DWG

Former Building 866





LEGEND

- PCB SITE
- INVESTIGATION AREA
- CONTOURS
- ABANDONED FUEL OIL PIPELINES
- FLUSHED FUEL OIL PIPELINES
- FUEL OIL PIPELINES NOT FOUND
- REMOVED FUEL OIL PIPELINES
- UNKNOWN FUEL OIL PIPELINES
- EXISTING DREDGE PIPELINES
- EXISTING FRESHWATER PIPELINES
- UNKNOWN FUEL PIPELINES
- EXISTING FUEL PIPELINES
- REMOVED FUEL PIPELINES
- GAS PIPELINES
- INDUSTRIAL WASTEWATER PIPELINE
- OTHER WATER PIPELINES
- SALTWATER PIPELINES
- BACKBONE SEWER PIPELINES
- STORMWATER PIPELINES
- STEAM PIPELINES
- UST 866 SITE
- GROUP I SITES
- GROUP II, III SITES
- ROADS
- STRUCTURES
- CLEANING ROOM
- TRANSFORMER AND MOTOR WORK AREA
- UNDERGROUND STORAGE TANK

Source: CH2M HILL, 2005

Figure 1-2
Environmental Sites in the Building 866 Area

B866 Data Summary Report,
Investigation Area C2
Lennar Mare Island, Vallejo, California

REMEDY ENGINEERING, INC.
CIVIL AND ENVIRONMENTAL SOLUTIONS

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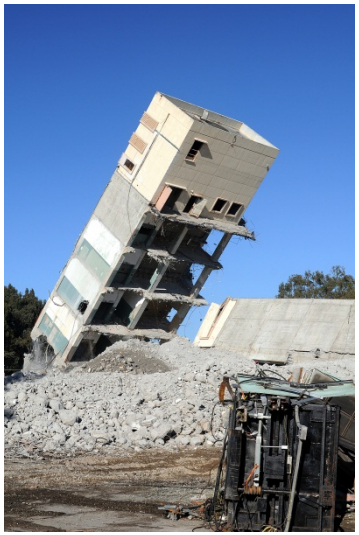
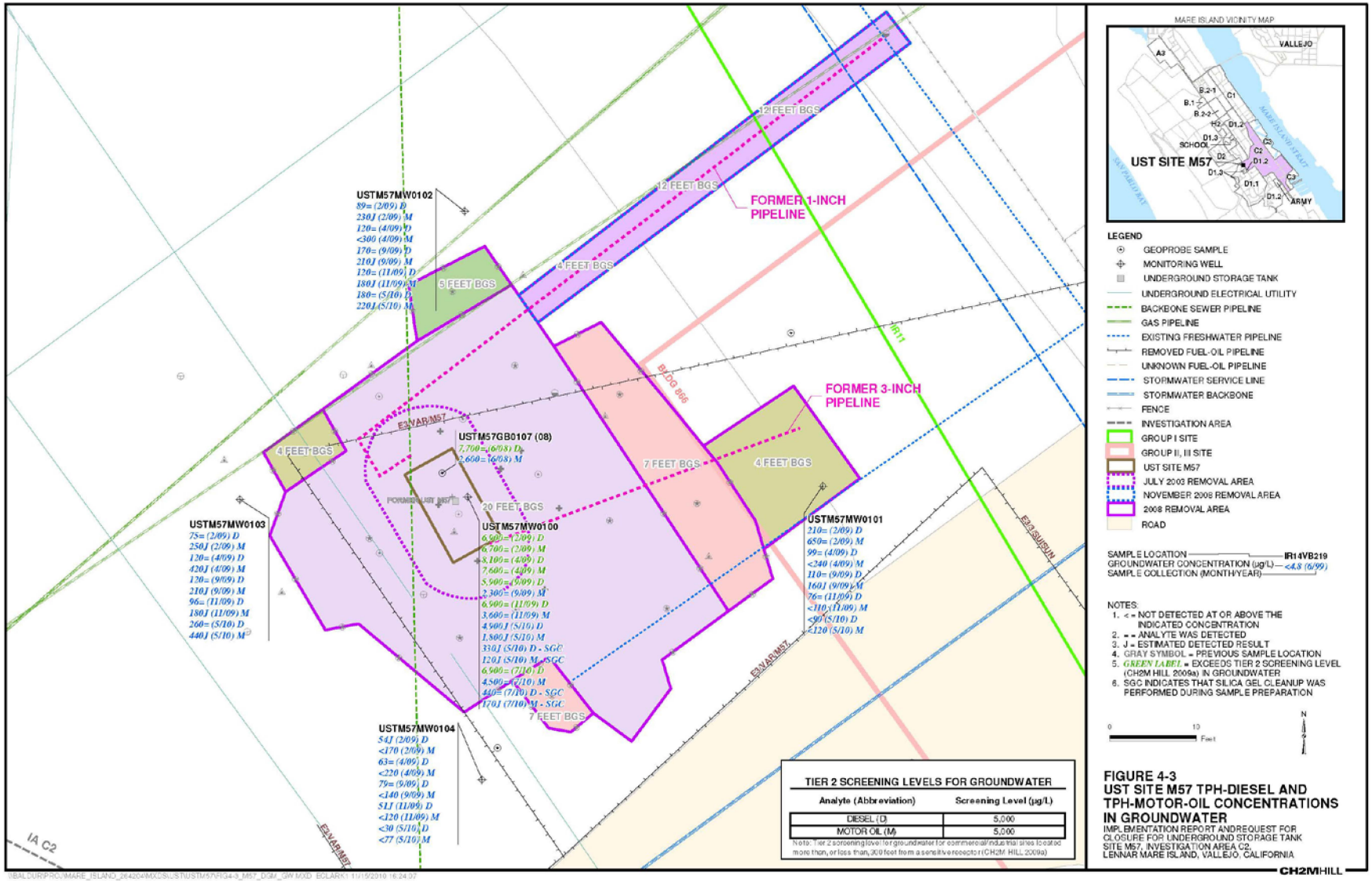
Building 866 Demolition – 2007-2008



Historic Investigations and Remedial Activities – UST M57 and FOPL E3/VAR/M57

- **The Twentieth and Twenty-First Centuries (1980s to 2013)**
  - 1981 – 1999 – Numerous Assessments and Remedial Investigations
  - 2002 – 2003 – Sampling and Analysis Plan (SAP) Implementation
  - 2003 – 2006 – Polychlorinated Biphenyl (PCB) Site Cleanup
    - Building 866 AL#01, AL#02, AL#03, AL#04, AL#05, UL#01, UL#02, Building 866 North (Unrestricted Land Use) and Building 866 PCB Sump Site (Commercial / Industrial)
  - 2007-2008 – Building Demolished
  - 2008 – UST M57 Contaminated Soil Removal Action
  - 2010 – Cistern M7
    - Unrestricted Land Use
  - 2010 – SAP to Support Unrestricted Land-Use at Building 866 Area Implemented
    - Twenty-three (23) Environmental Sites Evaluated – PCB, FOPL and UST Sites
    - Advanced Thirty-Seven (37) Soil Borings and Two (2) Trenches
    - Unrestricted Land Use for these Sites
  - 2012-2013 – Remedial Actions Implemented at Building 866 PCB Sump Site and UST M57 and FOPL Segment E3/VAR/M57

Groundwater Conditions Following 2008 Remedial Actions – UST M57 and FOPL E3/VAR/M5

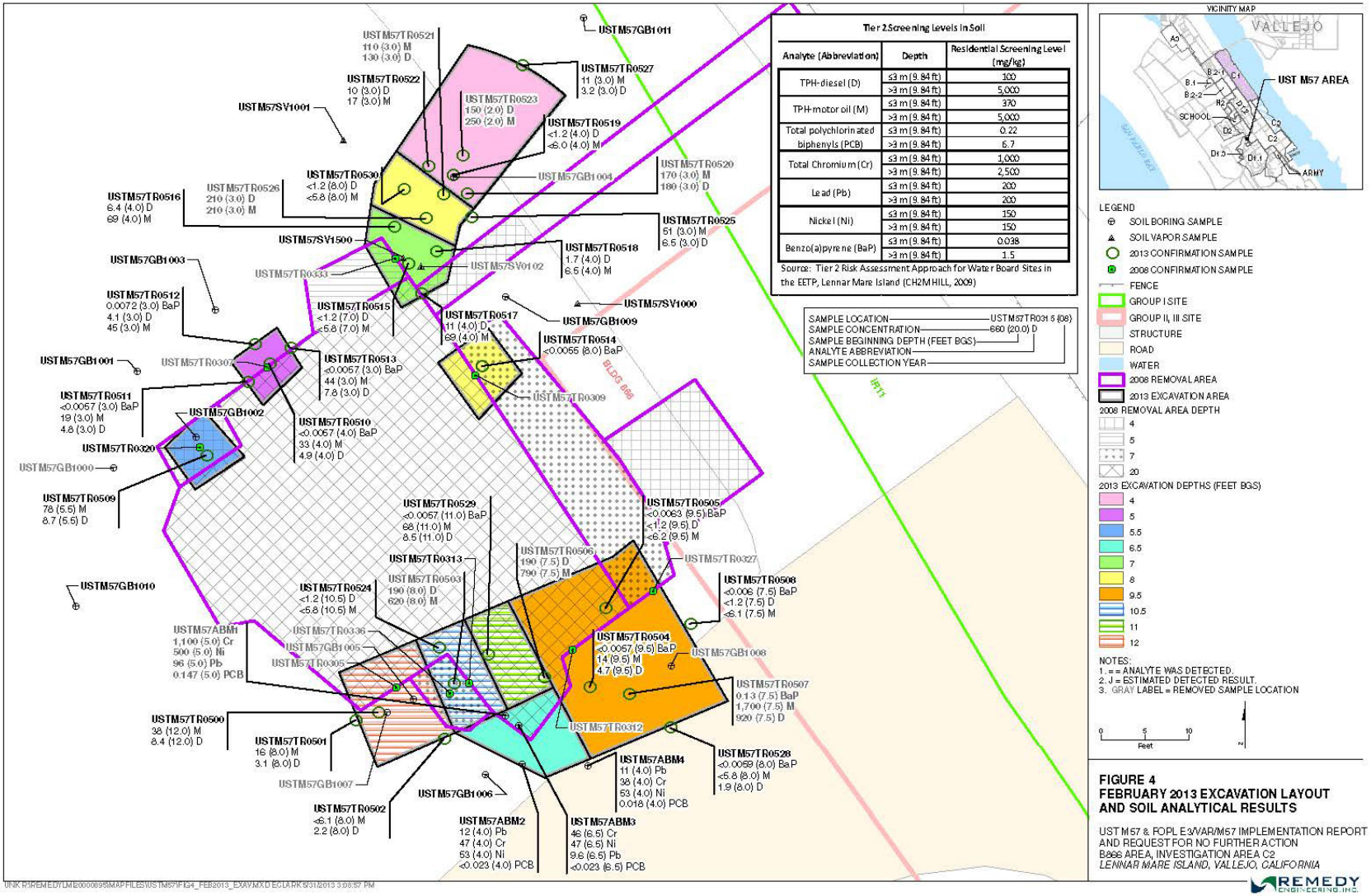


Implementation of Remediation Activities – UST M57 and FOPL E3/VAR/M57

- **Only One Site Remains with Constituents-of-Concern Above Unrestricted Land Use Criteria**
  - UST M57 and FOPL Segment E3/VAR/M57
- **2012 Remedial Activities**
  - Eight (8) Excavations to Remove Constituents-of-Concern Above Residential Tier 2 Screening Levels
  - One Unknown Condition Encountered – Green Sand in One Excavation
  - Collect Verification Samples – Soil and Soil Vapor
  - Dispose of Excavated Materials Offsite at Appropriate Disposal Facility
  - Backfill Excavations
  - Collected Soil Vapor Samples
  - Requested No Further Action – Unrestricted Land Use

UST M57 and FOPL E3/VAR/M57 – 2012 Remedial Action

Soil Conditions Following 2012 Remedial Action – UST M57



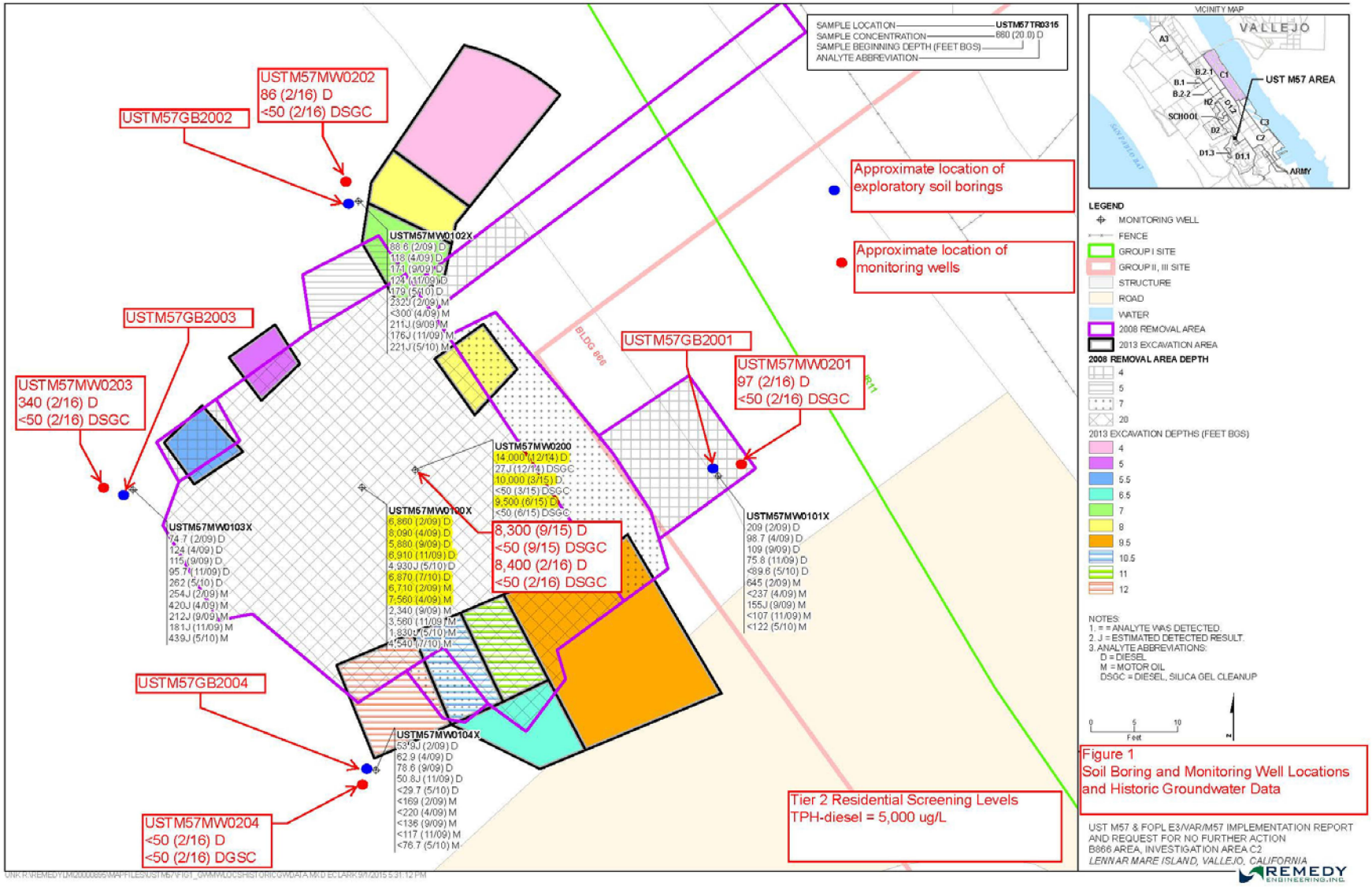
Additional Regulatory Agency Requested Work - UST M57 and FOPL E3/VAR/M57

- **Verify Groundwater Conditions at Excavation**
  - Advanced Boring and Collected "Reconnaissance" Groundwater Sample
    - Total Petroleum Hydrocarbons as Diesel (TPHd) – 19,000 micrograms per liter (µg/L)
    - TPHd Residential Tier 2 Screening Level – 5,000 µg/L
  - Installed Well and Implemented Groundwater Monitoring Program
    - TPHd Concentrations Have Declined and Stabilized
      - ✓ 14,000 µg/L in December 2014
      - ✓ 8,400 µg/L in February 2016

Additional Monitoring Work UST M57 and FOPL Segment E3/VAR/M57

- **Installed and Sampled Additional Groundwater Monitoring Wells Around Excavation**
  - Four (4) Wells Installed in January 2016 and Sampled in February 2016
  - Collected Groundwater Samples – Original Well and Newly Installed Wells
    - TPHd Concentrations in Original Well - 8,400 µg/L
    - Newly Installed Wells
      - ✓ Ranged from < 50 µg/L to 340 µg/L

2016 Groundwater Conditions – UST M57 and FOPL E3 / VAR / M57



Path Forward - UST M57 and FOPL E3/VAR/M57

- **Prepare Corrective Action Plan (CAP) for Groundwater**
  - Inject Compounds to Breakdown Petroleum Hydrocarbon Compounds
    - Oxygen Releasing Compound
    - Chemical Oxidation
  - Groundwater Monitoring Program
    - Quarterly for One-Year
    - After Year of Monitoring Evaluate Conditions
- **Implement CAP for Groundwater**
- **Request Closure as Warranted**

Questions?

Acronyms and Abbreviations

- µg/L – Micrograms per Liter
- CAP – Corrective Action Plan
- EETP - Eastern Early Transfer Parcel
- FOPL - Fuel-oil Pipeline
- IA - Investigation Area
- PCB – Polychlorinated Biphenyl
- SAP – Sampling and Analysis Plan
- TPHd – Total Petroleum Hydrocarbons as Diesel
- UST – Underground Storage Tank

Attachment 3. Weston Solutions Mare Island Update

Mare Island RAB Update

March 2016

DOCUMENT STATUS

The following documents were submitted for review:

- *Western Early Transfer Parcel 2015 Annual Report*
- *Investigation Area H1 2015 Annual Remedy Status Report*

The following document has been reviewed by the regulatory agencies and is being finalized based on responses to agency comments:

- *Record of Decision/Remedial Action Plan for Installation Restoration Site 05, Dredge Pond 7S, and the Western Magazine Area*

The following document is being reviewed by the Navy:

- *Remedial Design for Installation Restoration Site 05, Dredge Pond 7S, and the Western Magazine Area* (to address land use controls and implementation)

INVESTIGATION AREA H1

Quarterly groundwater sampling at 24 monitoring wells at IA-H1 was completed in March.

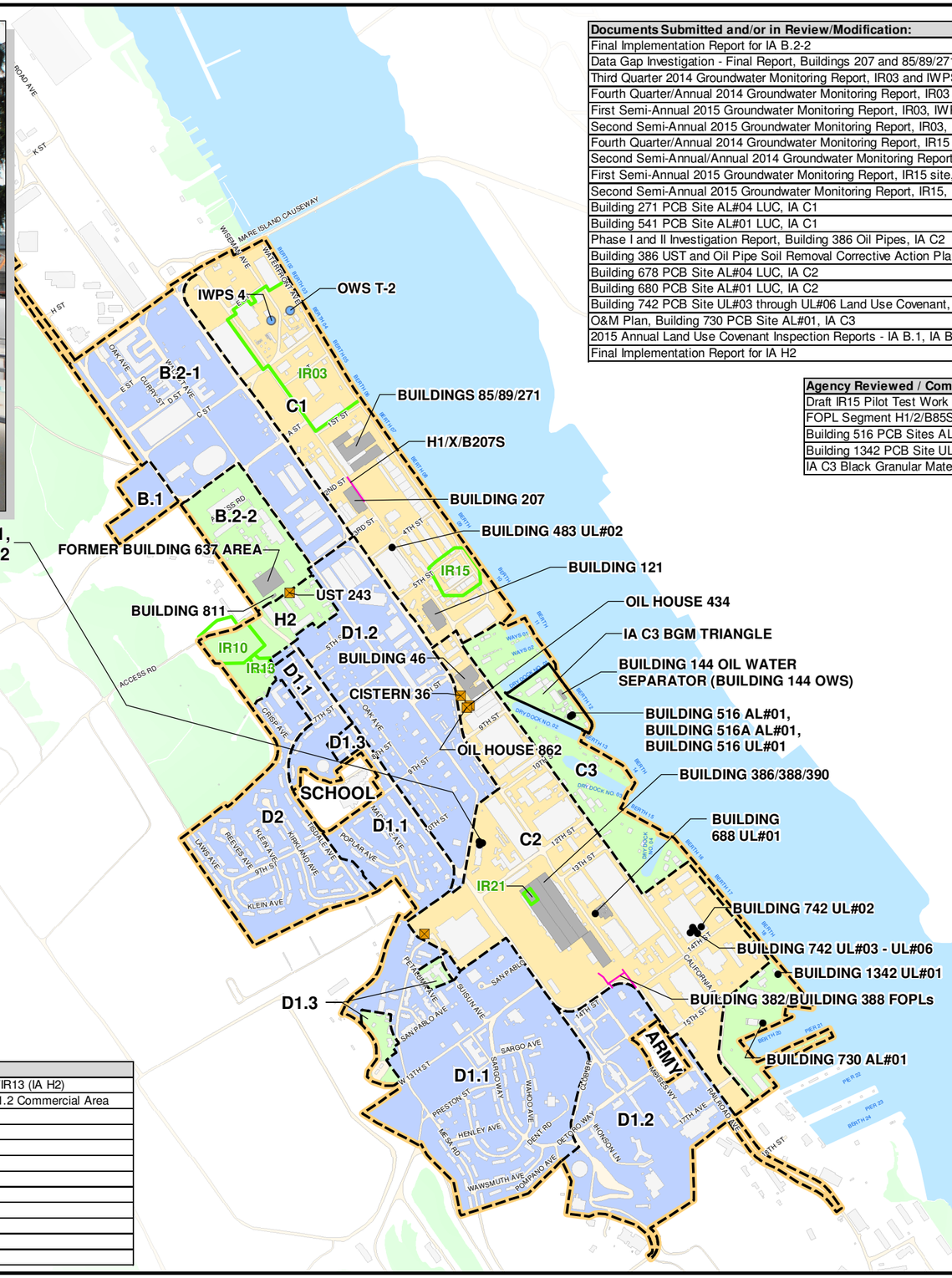
WESTON continues operations and maintenance activities of the 72-acre IA-H1 Containment Area perimeter groundwater collection trench system. The effluent flow has slowed to less than one gallon per minute due to the effectiveness of the multi-layer engineered cap which excludes infiltration of rainwater. Quarterly effluent sampling was completed in March. Since 2005, over 32 million gallons of groundwater have been removed and discharged to the Vallejo Sanitation and Flood Control District.

WESTERN EARLY TRANSFER PARCEL

Quarterly inspection of the Mare Island San Pablo Bay Trail was completed in March along with inspection of the WETP perimeter signage. No deficiencies were noted.

Attachment 4. Lennar Mare Island January 2016 RAB Update

Removal of Solid and Liquid Waste from Building 746 PCB Site UL#01, Investigation Area C2



Documents Submitted and/or in Review/Modification:
Final Implementation Report for IA B.2-2
Data Gap Investigation - Final Report, Buildings 207 and 85/89/271 Area, FOPL Summary and Groundwater Report, IA C1
Third Quarter 2014 Groundwater Monitoring Report, IR03 and IWPS4/OWS T-2 sites, IA C1
Fourth Quarter/Annual 2014 Groundwater Monitoring Report, IR03 and IWPS4/OWS T-2 sites, IA C1
First Semi-Annual 2015 Groundwater Monitoring Report, IR03, IWPS4 / OWS T-2, IA C1
Second Semi-Annual 2015 Groundwater Monitoring Report, IR03, IWPS4 / OWS T-2, IA C1
Fourth Quarter/Annual 2014 Groundwater Monitoring Report, IR15 site, IA C1
Second Semi-Annual/Annual 2014 Groundwater Monitoring Report, IR15 site, IA C1
First Semi-Annual 2015 Groundwater Monitoring Report, IR15 site, IA C1
Second Semi-Annual 2015 Groundwater Monitoring Report, IR15, IA C1
Building 271 PCB Site AL#04 LUC, IA C1
Building 541 PCB Site AL#01 LUC, IA C1
Phase I and II Investigation Report, Building 386 Oil Pipes, IA C2
Building 386 UST and Oil Pipe Soil Removal Corrective Action Plan, IA C2
Building 678 PCB Site AL#04 LUC, IA C2
Building 680 PCB Site AL#01 LUC, IA C2
Building 742 PCB Site UL#03 through UL#06 Land Use Covenant, IA C2
O&M Plan, Building 730 PCB Site AL#01, IA C3
2015 Annual Land Use Covenant Inspection Reports - IA B.1, IA B.2-1, IA C3 PCB Sites, IA D1.2 Commercial Area, IR10/IR13 (IA H2)
Final Implementation Report for IA H2

Agency Reviewed / Commented or Concurred Documents:
Draft IR15 Pilot Test Work Plan, IA C1 (Comments)
FOPL Segment H1/2/B85S Implementation Report and Request for Closure, IA C1 (Comments)
Building 516 PCB Sites AL#01 and UL#01 Final Land Use Covenant (LUC), IA C3 (Comments)
Building 1342 PCB Site UL#01 LUC, IA C3 (Comments)
IA C3 Black Granular Material Triangle LUC, IA C3 (Comments)

Field Work Performed:
Building 87 PCB Site UL#01, IA C1 (Continuation of Remediation
Building 91 PCB Site UL#01, IA C1 (Continuation of Remediation)
Building 225 PCB Site UL#01, IA C1 (Continuation of Remediation)
Building 746 UL#01 and Building 746A UL#01 PCB Site Remediation, IA C2 (Continuation of Remediation)
Upcoming Field Work:
Building 121, Rooms 101 and 103, Petroleum Hydrocarbon Remedial Actions, IA C1 (Continuation of Remediation)
FOPL Segment H1/X/B207S, Petroleum Corrective Action Plan Implementation, IA C1 (Initiation of Remediation)
Building 688 PCB Site UL#01, IA C2 (Continuation of Remediation)
Building 746 UL#01 and Building 746A UL#01 PCB Site Remediation, IA C2 (Continuation of Remediation)
Building 742 UL#02 PCB Site Remediation, IA C2 (Initiation of Remediation)

Upcoming Documents:
2016 Annual Land Use Covenant Inspection Reports - IA B.1, IA B.2-1, IA C3 PCB Sites, IA D1.2 Commercial Area, IR10/IR13 (IA H2)
2016 First and Second Five-Year Review Reports - IA B.1; IA B.2-1; Selected Sites in IAs C1, C2, C3 and D1.2; and IA D1.2 Commercial Area
Cleanup Plan / Notification, Building 116 PCB Site UL#01, IA C1
Cleanup Plan / Notification, Building 151 PCB Site AL#01, IA C1
Revised FOPL Segment H1/2/B85S Implementation Report and Request for Closure, IA C1
Final IWPS4 / OWS T-2 Pilot Test Summary Report, IA C1
Building 121 Cooling Water Loop Corrective Action Plan, IA C1
Site Characterization and Cleanup Action Summary Report, Building 688 Pits Site, IA C2
Remedial Design Work Plan, Oil Houses 434 and 862 and Cistern 36 Site, IA C2
Building 1342 PCB Site UL#01 Sampling and Analysis Plan, IA C3
Building 144 OWS Request for Closure, IA C3
Final IA D1.3 South Implementation Report, IA D1.3

FEATURES WITHIN THE EETP

MARCH 2016 RAB UPDATE
LENNAR MARE ISLAND, VALLEJO, CALIFORNIA

REMEDY ENGINEERING, INC.

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