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

HELD THURSDAY, September 24, 2015

The Restoration Advisory Board (RAB) for former Mare Island Naval Shipyard (MINS) held its regular meeting on Thursday, September 24, 2015, at the Mare Island Conference Center, 375 G Street, Vallejo, California. The meeting started at 7:06 p.m. and adjourned at 8:44 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)
- Michael Coffey (Community Member)

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

- Janet Lear (Navy Co-Chair)
- Dwight Gemar (Weston Solutions, Inc.)
- Erin Hanford (City of Vallejo)
- Valerie Harris (Navy Lead Remedial Project Manager)
- Patrick Hsieh [Department of Toxic Substances Control (DTSC)]
- Neal Siler (Lennar Mare Island)
- Reginald Paulding (Navy Remedial Project Manager)

Community Guests in Attendance:

- Dan Lohr, Engineering Remediation Resources Group, Inc. (ERRG)

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

- Virginia Demetrios
- 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: Okay. Let's go ahead and get started. Welcome, everyone, to the Mare Island Restoration Advisory Board meeting.

I want to start first by introducing our new lead RPM, Valerie Harris. This is her first RAB, but she's taking over for Heather Wocknick and we'll be seeing a lot of her at these meetings.

My name is Janet Lear, I'm the Navy co-chair.

CO-CHAIR HAYES: And I'm Myrna Hayes and I'm the Community Co-Chair.

MR. COFFEY: I'm Mike Coffey, RAB member from American Canyon.

MR. SILER: Neal Siler, Lennar Mare Island.

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

MS. HANFORD: Erin Hanford, City of Vallejo.

MR. GEMAR: Dwight Gemar with Weston Solutions, Inc.

MR. PAULDING: Reggie Paulding with the Navy.

MS. HARRIS: Valerie Harris with the Navy.

MS. DEMETRIOS: Virginia Demetrios with CES.

MS. SIEGEL: Emily Siegel with CES.

MR. LOHR: Dan Lohr with ERRG.

CO-CHAIR LEAR: So I was just going to ask, is there something fun going on in San Francisco tonight? There is nobody here tonight. Is your topic boring, Reggie, is it all your fault?

MR. PAULDING: It might be my topic.

MR. COFFEY: If I didn't get the e-mail I would have forgotten about it.

(Thereupon there was simultaneous discussion.)

CO-CHAIR HAYES: I mean who invented that.

MR. SILER: That's the only thing we get is e-mail.

MR. COFFEY: Because this is the first time --

CO-CHAIR LEAR: Virginia, did we send out a mailer?

MR. COFFEY: Mine didn't arrive.

MS. DEMETRIOS: An e-mail went out.

MR. COFFEY: I saw the copy of the e-mails but, I mean --

CO-CHAIR LEAR: Some people don't check their e-mail.

CO-CHAIR HAYES: Or aren't on e-mail. We can't assume that everybody on our mailing list is, and I never heard about an end to a mailing.

CO-CHAIR LEAR: No, she said they mailed it out, so I don't know what happened.

MS. DEMETRIOS: I'll check on it.

CO-CHAIR HAYES: And while you're checking on it, is there really any specific reason why you're folding the packet now and sending it in a little tiny thing? Does that save a substantial amount of mail?

MR. COFFEY: I think it probably saves half the price.

MS. DEMETRIOS: If folded, the packet fits into a smaller envelope.

MR. COFFEY: We used to have them in a full mailing.

CO-CHAIR HAYES: It used to be this size.

MS. DEMETRIOS: We can send it flat, it was just to save money. Do you prefer us to send it flat, Myrna?

CO-CHAIR HAYES: Well, why have it wadded up when you're trying to read it, you know.

MS. DEMETRIOS: Okay.

CO-CHAIR HAYES: Yes. I just didn't know what the reasoning was; maybe you didn't have access to large size envelopes, or if that was part of your contract that you had to send them in little ones or whatever. While the topic has come up of mailing might as well --

MR. COFFEY: I don't mind if it's a significant cost savings.

CO-CHAIR HAYES: Yeah, if you're saving several hundred dollars, but otherwise, I don't know if you've read things all folded up before, but they're not so easy.

CO-CHAIR LEAR: Virginia, can look into that to see if there's a significant difference in cost?

So I'll go ahead and introduce our first presentation. Installation Restoration Site 04 Remedial Investigation and Feasibility Study presented by Reggie Paulding with the Navy.

II. PRESENTATION (Reginald Paulding [Navy]): *Installation Restoration Site 04 Remediation Investigation and Feasibility Study*

MR. PAULDING: All right. Good evening. As Janet said, I am Reggie Paulding and we'll be presenting IR Site 04 RI/FS. And we haven't presented anything on IR Site 04 since 2011, so there's quite a bit of material here.

And I tried to, tried to put in some representative photos of different, there's been a lot of work done out at IR 04, so I tried to capture that work in various photos throughout the presentation.

And the first one we have here, this is work that was done back in 2007, 2008, excavation removing green sand --

CO-CHAIR HAYES: It's a little blurry.

MR. PAULDING: Do I need to try and sharpen it up?

CO-CHAIR HAYES: Well, try it, yeah.

MR. PAULDING: Is that better?

MR. COFFEY: There you go.

CO-CHAIR HAYES: Yeah.

MR. PAULDING: All right. Like I said, this is a picture of an excavation that was done removing green sand back in about 2007 - 2008. And there was also some concrete debris which is what's stacked up there in the background.

So the presentation today, we're going to cover site history; Previous investigations; Previous actions; The 2013 and 2014 data gaps investigation that was done; remedial investigation results; review the four solid waste management units out at IR 04; site characterization results; feasibility study recommendations; remedial alternatives that were analyzed; target treatment

zones in each, there are four subareas which I'll talk about; and then look at next steps and how we're going to move the project schedule forward.

So here we have -- oh, and one other thing, you do have full scale maps for all of the figures included in the presentation.

The Site Map (Figure 2) shows the subareas at IR 04. There's subarea one which has Building 1300 in it; Subarea four which has Building 900; Subarea 2; Subarea 3A, a larger open upland area; Subarea 3B, the wetlands area; and the top of the map we've identified a number of the former and existing buildings out at IR 04. As you can tell, there were several electrical substations out there still in use. They provide the main power to Mare Island that comes in from Vallejo.

Okay. So quick on the site history. In the early 1900's the site was pretty well undeveloped, it was wetlands.

Starting in around 1932 the site the Navy began using the site for open storage for things like lumber, anchors, buoys, and then they started bringing in fill at the site. Around 1944 those electrical transmission towers, we have some photos of those later, were put in place. 1950's to 1980s, is when the Navy started doing sandblasting out at the site to prepare ship components for painting.

1955 Building 900 was built. In 1975 Building 1300 was built along with the sandblasting enclosure. And then in 1992 all the sandblasting and painting activity ceased. The environmental investigations date back to 1983 when the Navy completed an initial study. Then there was a follow-up study in 1987 collecting additional samples.

Then 1994 the Navy completed a preliminary assessment site investigation that was really when the CERCLA process started. And then in 1998, I'm sorry, 1988, a little bit of overlap there, the Navy did a phase one RI. So there's just a lot of sampling as you can see.

1993 another phase of the phase two RI. 1997 some green sand characterization. 1999 to 2002 did human health and eco risk assessment looking at green sand specifically. Groundwater monitoring started in 1999, and that continued for a couple of years. Those wells were then destroyed as part of the NTCRA to excavate green sand. 2013 and 2014 we did data gaps sampling out at the site.

Another activity performed at the site was an intrusive investigation looking for UXO that may theoretically have been at the site. And the reason the Navy performed that work was due to the proximity of the site to the PMA or the production manufacturing area which is immediately south of the site. And you can see some of those PMA buildings here in the photo on this slide to the south.

Back during that investigation an area called the paint can pit was identified, and that is now identified as Subarea 2. The pit contained cans, filters, packaging, all different kinds of paint material. And that excavation was done, completed down to approximately ten feet below ground surface.

And then in 2007, 2008 time frame there was that excavation to remove the green sand, and that was the first photo that we had in the presentation.

So then here on slide seven you can see the depth of those excavations. And the darker the color, the deeper the excavation went. And you can see up there towards the north along the AA prime line, the excavation went down between 14 and 16 feet below ground surface.

In 2010 the Navy put together a revised draft final remedial investigation report. That report looked at the site, identified several things, looked at Subarea 2, identified that as the volatile organic compound area, and that was where all those, the paint debris was identified and that, one of those previous excavations was performed.

Identified subarea 3A, which is the upland area, and 3B, the wetlands area, contained metals including chromium, cadmium, lead which were above the screening criteria for soil and sediment.

And then following that document there were a series of BRAC cleanup team meetings, BCT meetings, September 2010, January 2011, and March 2011, where the regulators identified data gaps in the investigation out at the site. The BCT specifically requested additional groundwater sampling, additional soil sampling and soil gas sampling in subarea two, and additional delineation sampling for contaminants of concern in Subarea 3A mainly.

Based on feedback from the regulators, the Navy put together a work plan, and that's the majority of the work that we'll be talking about today.

A few quick points before we get into the data gaps investigation. In May, 2010, the Navy put together a technical memo requesting a beneficial use exception from the Water Board for water out at IR 04 and the vast majority of Mare Island has what we call high total dissolved solids. It has a lot of salt. I mean basically it's, you know, influenced from the San Francisco Bay. It's where you can't drink it. Essentially the salt content in the water prevents it from being drinkable.

And based on that, the State of California has criteria to evaluate water and whether or not it's drinkable or not. The water at IR-04 did not qualify. The Navy requested a beneficial use exception, and the Water Board concurred with that request. That beneficial use exception is currently called an exception to drinking water policy.

In 2011 the Navy finished all investigation and closed out a section of the industrial wastewater sewer line, which ran through IR 04 from Building 1300 to the wastewater treatment plant up by the landfill. So that was closed out.

There are a couple PCB sites out at IR 04, including Buildings 900 and 1300. Building 782 is one of those electrical transformer buildings that had more extensive PCB contamination, and the Navy was not able to close that out through the PCB program, so that building was transferred into the CERCLA program in May 2012.

So in 2013 we started, like I guess we'll call it, the first phase of the data gaps investigation out at IR 04. We installed eighteen new groundwater monitoring wells across the site. We delineated, collected additional soil and soil gas samples in that volatile organic compound area in subarea two. We collected more soil samples in subareas one and four and 3A for TPH, total petroleum hydrocarbons, heavy metals, and PCBs. And we also collected soil samples, groundwater samples specifically targeting the four solid waste management units; the paint booths, there's two sets of paint booths; there was the dip tanks; and then also there's the sandblast material holding area, staging area. And then the picture here, that's ground penetrating radar, so it's just standard practice to clear an area before drilling.

In 2014 the Navy did additional data gap sampling. We installed an additional groundwater well in Subarea 2. We performed two additional rounds of groundwater sampling. We collected additional samples, soil samples in subarea two. We collected soil samples specifically for hexavalent chromium beside one of those solid waste management units. And then collected additional soil samples for PCB analysis adjacent to building 782 which is that transformer, electrical transformer building. And then here this is slide twelve, which you have an eleven by seventeen in your packet there, this is just to show how many samples, the density of samples collected out at IR 04 over the twenty, twenty years of us sampling.

And then figure, the next slide, figure seven, just shows specifically that Subarea 2, the VOC paint can pit area.

Here we are on slide fourteen. So now we're getting into the results of the investigation. So we have Solid Waste Management Unit 23, which is this former sandblast material enclosure area. And that crosses the boundaries of Subarea 1, 4, and 3A. It was partially excavated back in 2007-2008. And we collected data gap sampling -- samples looking specifically for total petroleum hydrocarbons, metals, and PAHs out in this area. And of the sampling that we performed, only the TPH, total petroleum hydrocarbon diesel range analysis was above the screening criteria. And what we found in that sampling and investigation was that the TPH is sporadic across the site, and shallow.

Now, this was identified as one of those previous data gaps that specifically we went back out for. If you look on the next slide, fifteen, and you'll see there's some sample locations with gold, gold color sample results. Those gold colors indicate that at those locations the results exceeded the screening criteria. So the goal of the additional sampling was to go out and to define the extent of the contamination at those sites.

And what you can see is that there one of the concerns was is this something that was continuous across the site, what was the, how much of a concern was it?

From what we found with this, the data gaps analysis is that it was not continuous and not large, not a big concern.

So then here we have two solid waste management units that were within Building 900 but here, as you can see, we have an individual collecting samples in the crawl space underneath the building. And the reason that this was done is because there was a concern that there could have been a release from the building itself. So we went under the building looking specifically for any kind of drains or sumps, any evidence of cracks in the flooring, and if there would have been any impacts to the soil.

So we collected several soil samples beneath those solid waste management units and found no evidence of a release. Also, no drains or sumps were identified.

Then we have SWMU 69 which was a former iron dip tank adjacent to Building 1300. So here we collected samples, analyzed for specifically hexavalent chromium because we knew that that had been used in the different chemicals that were used to prepare the metal components for painting. Hexavalent chromium was identified in two soil samples exceeding the screening criteria, and it was also detected in groundwater, but it was below the screening criteria.

So then here on slide eighteen also, or figure fourteen in your packet there, you'll see that we have the samples collected beneath the former dip tanks, the dip tanks have since been removed, but this is where they were located. And we did two rounds of sampling.

So the purple sample locations indicate the 2013 sample locations. And then the blue, there's three blue ones that were installed to define the extent of the contamination that was identified in that one sample location.

As you can see again, at SB 04 we have two samples that are gold which indicates that they are above the screening criteria. And when we did this additional sampling in 2014 we were able to identify again that this contamination wasn't extensive, so that was the purpose of those additional three samples in 2014.

Okay. So what does all this mean; right? So we have the results and then a risk assessment summary by subarea.

So the current and planned future use for subareas one and four is industrial. And here we have pictures of Building 900 and 1300. The area is mostly paved. Hexavalent chromium release was detected in the soil under the former dip, iron dip tanks, SWMU 69, but it was limited and we were able to define it. We performed a human health risk assessment, evaluated industrial worker, construction worker, and hypothetical residential future use scenarios.

All of those scenarios except the hypothetical resident with domestic use of groundwater resulted in an acceptable risk and an HI, or hazard index, that's -- did not exceed one.

CO-CHAIR HAYES: Can I ask you --

MR. PAULDING: Of course.

CO-CHAIR HAYES: Can I ask you a question regarding the hypothetical residential with domestic use of groundwater? You have a beneficial groundwater exemption?

MR. PAULDING: Yes.

CO-CHAIR HAYES: So why would you have done the hypothetical residential with domestic use of groundwater?

MR. PAULDING: So we --

CO-CHAIR HAYES: Is that just because that's in the model and you can't remove it?

MR. PAULDING: No, it could be removed. We've gone back and forth about this point. So in the past there's been numerous sites where we haven't evaluated the risk, and then it comes back, and if we had evaluated it we might have been able to show that there was no risk and we wouldn't have needed an institutional control. So we're trying, moving forward, to evaluate risk where we can remove or not install controls if they're not needed.

CO-CHAIR HAYES: So is there a scenario with hypothetical residential without domestic use of groundwater?

MR. PAULDING: Yes. So you could live at a site, but we would have a control that, say, would prevent you from installing a well, of using the groundwater for drinking purposes.

CO-CHAIR HAYES: Okay. So that is in that analysis?

MR. PAULDING: Yes.

CO-CHAIR HAYES: Okay. Good. Thank you.

MR. PAULDING: And to Myrna's point, since we do have this beneficial use exception, that allows us to not, we're not required to clean up the groundwater to drinking water standards.

So there's -- based on our analysis, there was no significant habitat at the site and no risk for ecological receptors. And the feasibility study recommendation was to not perform one for subareas one and four since there was no significant risk.

Now to subarea two. Again, the current and planned use is industrial. And here in these two photos at the bottom of this slide you can see the electrical equipment where it comes into Mare Island. And then this site is partially paved, and the remainder of the site is regularly maintained by mowing.

We have, as I said before, we have elevated VOCs, volatile organic compounds in all of the soils, soil, gas, and groundwater in this area. And the impacted soil was primarily seen at the zone between ten and fifteen feet below where that previous excavation was performed.

So here we also evaluated industrial, construction worker, and hypothetical resident future use scenarios.

CO-CHAIR HAYES: Sorry, I'm having to catch up with you here.

MR. PAULDING: Okay.

CO-CHAIR HAYES: There are organic, volatile organic compounds ten to fifteen feet below the ground surface and below the depth of the excavation, so didn't they backfill that excavation site?

MR. PAULDING: Yes, they did. Yes.

CO-CHAIR HAYES: So this is trapped down there?

MR. PAULDING: I mean, I guess that's one way to put it. It's definitely below the clean fill, yes.

So the groundwater typically is seen between eight and ten feet, but -- and typically you don't excavate below groundwater just because it makes it much more difficult to perform, more costly.

CO-CHAIR HAYES: So this is, this ten to fifteen feet is in the groundwater then?

MR. COFFEY: Yeah, it is within, it's within the zone --

CO-CHAIR HAYES: No, below the ground surface; right?

MR. PAULDING: Yes, it's within the zone, the groundwater zone.

CO-CHAIR LEAR: But it's a soil sample.

MR. PAULDING: Yes, it's a soil sample. The soil samples were collected from drilling, but it's below the clean fill within the zone.

CO-CHAIR HAYES: And maybe you're going to get to this on the next page. Does that, is that impacting the groundwater there?

MR. PAULDING: Yes. The groundwater is impacted in zone two. I think that was -- right, so the bullet above that one, so the third bullet says that we have elevated VOCs in soil, soil gas, and groundwater --

CO-CHAIR HAYES: Uh-huh.

MR. PAULDING: -- at this, in Subarea 2. So to your point I think, so we have wells that are downgradient of this site to, specifically it was identified as a data gap for groundwater sampling to know if there was any impact to the Mare Island Strait.

So we did look at that. We collected groundwater samples along utilities, utility lines out at IR 04 to show that there were no downgradient impacts from the contamination at this site. It doesn't make it to Mare Island Strait.

Okay. So the summary, the risk assessment summary for subarea two, we looked at again the industrial worker, construction worker and hypothetical residential use scenarios. We found that there's an elevated risk for the hypothetical resident, both cancer and hazard index based on inhalation of soil gas in indoor air. The risk drivers were those several volatile organic compounds, specifically trichloroethene, also known as TCE, the 1,1,2,2-tetrachloroethane, and vinyl chloride.

Domestic use of groundwater also resulted in unacceptable cancer risk and hazard index for the resident. And again, since we do have this beneficial use exception in place at IR-04, we will not be remediating the groundwater to drinking water standards. No ecological risks were identified.

And the feasibility study recommendation was to evaluate alternatives to address potential risk to human health, specifically the hypothetical residential use scenario based on exposure to VOCs in soil gas. And the reason to do that is to evaluate an unrestricted use option.

Okay. Subarea 3A. The building here at the bottom left-hand corner, that's Building 782 where we had the transformers and we have the PCB contamination. The planned use here is industrial as well. 28,400 cubic yards of soil have been previously excavated from Subarea 3A as part of the 2007-2008 excavation project.

The site is partially paved with the remainder maintained by regular mowing. And again you have the PCBs beneath Building 782. So here again we evaluated industrial, construction worker, and hypothetical residential use scenarios.

There was unacceptable risk from lead in subarea 3A to a hypothetical child resident. Unacceptable risk for a hypothetical resident and commercial/industrial worker was identified in the area around building 782 due to the PCB concentrations.

And again, domestic use of groundwater was determined to be unacceptable. Based on, but then again, based on the concurrence of the exception to drinking water policy, I'm not going to remediate to drinking water standards.

So then we evaluated ecological risk. No significant habitat was identified outside of an area that borders on the wetlands, subarea 3B. And the metals in that area pose a risk to ecological receptors.

So the feasibility study recommendations for this Subarea 3A were to evaluate the alternatives to address the potential risks to human health, specifically the hypothetical resident and commercial/industrial workers from exposure to PCBs and soil near Building 782. Also to evaluate the risk in the -- for metals in the soils near Subarea 3B.

So in here again you can see the PCB samples. The ones, in this case its SB 20 is the main one, 210 milligrams per kilogram, two feet below the ground surface.

Okay. Subarea 3B. We didn't collect any additional samples at subarea 3B during the data gaps investigations because we knew we had an issue out there.

Current and planned future use for this area is wetlands. And here you see in the photo a picture of the wetlands. This is looking south along Mare Island Strait towards the PMA.

We evaluated recreational use in our human health risk assessment and found it to not be any additional risk for a recreational user.

However, there were ecological risks for an ecological receptor due to metals and potentially PCBs, but we have -- we didn't have a significant amount of data to evaluate the PCB risk.

The feasibility study recommendation was to evaluate alternatives to address metals in sediments at Subarea 3B. So on the next set of slides here we're going to look at these target treatment zones, the area that's impacted, and how extensive that is at these various subareas.

So in Subarea 2 you can see this tan colored area is the area that we believe is the most highly impacted. And the areas that, the sample locations that are circled with gold or red indicate the areas where the impacted samples came from.

So here the remedial alternatives for subarea two were a no action alternative, which is not protective of human health and the environment and is not an acceptable alternative.

Institutional controls -- alternative two is institutional controls. And that would include long-term, basically long-term monitoring of the site. It would have a low initial cost, but it would be continuous and, and it would allow for industrial use of the site.

Alternative three for subarea two included source removal, in situ chemical oxidation, which would be treatment for the groundwater, and then institutional controls until the groundwater remediation was completed. This would allow for unrestricted use of the site.

Here we have the target treatment zone for Subarea 3A which is the PCB impacted area adjacent to Building 782.

So the alternatives evaluated for 3A included, again, a no action alternative which is not protective of human health and the environment and is not an acceptable alternative.

Alternative two is an asphalt cap and IC's. The asphalt cap would provide a barrier to the soil, to the contaminated soil beneath. It would also require long-term institutional controls and maintenance of the cap to prevent, to make sure that the receptors, workers in the area weren't impacted.

So alternative three would remove the impacted soil through excavation and then off-site disposal, and would allow for an unrestricted use option at the site.

So here we have Subarea 3B. This is the wetland area. And then also the adjacent Subarea 3A area that also has the metals impacted soils. And again here the sample locations that are circled in gold and red exceed screening criteria.

So the alternatives evaluated in Subarea 3B included, again, a no action alternative which is not protective of the environment and is not acceptable.

Subarea 3B, the second alternative, we looked at removal, what we called on-site relocation which would bring the soils up to the upland area 3A, cap them there in place, and then some off-site disposal for the most impacted material, and then institutional controls. The institutional controls would be required to maintain the cap of the material that was relocated to the upland area.

And then alternative three was excavation and off-site disposal of the impacted sediments. This would allow for unrestricted reuse and no IC's.

So then here we are on slide 33. We have the rankings of the various alternatives evaluated. We didn't evaluate any of the first alternatives because they weren't acceptable, they weren't protective.

So if you can see here that, in the far left column you can see that they're all, these alternatives evaluated were considered protective of the human health and the environment, and they complied with the ARARs, acceptable required regulations, applicable regulations.

They varied in their long-term effectiveness. Some of them were much better than others, excellent to good.

Reduction of toxicity. The only alternative that we looked at that would qualify for reducing toxicity was the one that treated groundwater under alternative 2-2, that's why it's good and the other ones are poor.

The short-term effectiveness. This one's a tricky one I always feel like. So what this means is how easy is it to implement the alternative and what is the immediate impacts to the local community.

So in this case the institutional controls tend to be easier to implement and have less immediate impacts on the community.

The ones that include excavation tend to get rated lower just because of trucking and increased traffic and that kind of a thing.

Implementability is pretty much the similar criteria.

For Cost, again institutional controls tend to be less expensive up front and tend to get rated higher.

Overall you can see that the, the one in -- alternative two, the institutional controls for subarea two was rated the highest for the two alternatives looked at for subarea two.

Excavation and off-site disposal, alternative three for subarea 3A was rated higher amongst those two alternatives evaluated.

And the removal and off-site disposal of the impacted sediments in subarea 3B was rated higher amongst those two alternatives evaluated.

So where are we in the CERCLA process? Here you can see that we're in, towards the beginning, the remedial investigation and feasibility study phases. And this, what we're going to produce here in the next month would be draft document for this work. So the schedule is the draft RI/FS report would be delivered in October.

And then the final report is in April.

The proposed plan would be in May, 2016.

And the Record of Decision Remedial Action Plan would be, would follow in September.

And the actual fieldwork, the remedial action would be in April, 2018.

So any questions?

CO-CHAIR HAYES: That red thing looks kind of like maybe you have some circus performers.

MR. PAULDING: That was a wastewater tank. So that tank held the water from the groundwater sampling, the purge water and decon water.

CO-CHAIR HAYES: Usually -- well, no, I can't say that for a fact, but it seems to me that your feasibility study analysis doesn't come up with very good, very strong alternatives in, or clear cut

options, preferred alternatives; is that so, except for 3A, three? Do you consider "good" good enough? Better than marginal, I guess, huh?

MR. PAULDING: Yes. I mean we had, I think in this analysis there were, they went exceptional, very good, good, marginal, and poor. So I think it was a total of five different categories.

In the feasibility study we evaluated, I think for each of the subareas we evaluated three alternatives, one of those being the no action which, with the exception of subarea one and four, wasn't viable.

And we -- at this point in the CERCLA phase we don't necessarily identify a preferred alternative, that's done in the proposed plan phase.

CO-CHAIR HAYES: It's clear that that site's been on your list of things to do for a long time. Right soon after, I think, our Restoration Advisory Board was formed and the public began learning about your environmental cleanup challenges here, the San Francisco Chronicle did an article on the contaminants at IR 04, and it identified that site as a location for the birthplace of baby crabs, and that the contaminants at that site were impacting the bay's crab population.

You can go back and look at that article, but it caused pretty much of a stir because the IR 04 site, I mean it -- because it was presented as an alarming site for the health of the bay. So really nothing's been done since then so, to the site except for the time critical removal action which I think was, I don't know how much that was to remove source and how much that was to take advantage of removing soil that could help with H-1 landfill. It was a worthy effort either way. But it seems like things are really inching along on this project.

And there again, in terms of IR 04, I know at that time the discussion was, with the regulators was whether you would do something that would just contain the contaminants in IR 04, prevent them from getting into the river because you might destroy the habitat that was there worse than if you did. I mean, the idea I guess was to do no harm before you do good. And so I'll be interested to see how this plays out.

MR. COFFEY: Progresses.

CO-CHAIR HAYES: How it progresses. And I'd also like to know at what point do you go out there and fondle the little salt marsh harvest mice and find out whether they even are there anymore or if the ferry system, sorry to say, might be destroying that habitat, etching away at it, and when do you also analyze how much disturbance it has done of contaminated soil. Because it throws a really powerful underwater wake that then is etching away the shore. You can see that, anybody can see that if they're on the riverside.

So these are issues that I am concerned about, and 2018 seems like a heck of a longer time than I feel should be taken to take just a look-see at that. Because it was identified, obviously, a heck of a long time ago as an important ecological resource, and has been sitting there for a long, long, long, long time with those contaminants.

And I'm not saying that it is getting worse, I can't, we can't say that. But we can see, I think it would be worthwhile to alleviate some of my concerns if you would just at least go out there and tell me that the shoreline is about the same location, and the marsh is about the same location as it was in '92 or '94 or whatever. And I think that wouldn't be that difficult to do.

Or if you can see evidence of undermining of that marsh then you can assume that there's a possibility anyway that those contaminants are being washed into the river. So I don't see any --

MR. COFFEY: Or will be.

CO-CHAIR HAYES: Or will be, yeah. And you could take preventative remedies, I would think, like a silt fence. We know that collects silt as fast as can be, ask the Army. And whoever's foolish enough to think that they're going to be able to do water-based development on that river is insane, that's the fastest siltation capacity river in the State of California, so --

MR. COFFEY: Well, when we have water.

CO-CHAIR HAYES: Yeah, when we have water, otherwise it's even faster because it just sits there adding up several feet a year. So I would like a follow-up on that question.

MR. PAULDING: Okay. Thank you.

CO-CHAIR LEAR: So our next presentation is Mr. Neal Siler, Lennar Mare Island. He's going to talk about the remediation of the Building 688 pits.

III. PRESENTATION (Neil Siler [Lennar Mare Island]): *Remediation of the Building 688 Pits, Site Investigation C2*

MR. SILER: Okay. So I'm going to talk about a site that we haven't talked about since around 2011, and this is the Building 688 pits site in Building 688.

And as I normally do, I'm going to run through the topics, give you an idea of the description of the site, talk about some previous characterization and sampling results, why we have an issue at this site, give you a description of the approved cleanup plan, talk about the remediation progress we've accomplished to date, talk about remaining work and the path forward. And if you have any questions at the end please feel free to ask me questions, or in the interim while I'm talking please feel free to ask any questions.

So the Building 688 pits site -- and you can take a look at the next slide, slide four, it's going to give you an idea what I'm talking about here -- it's located in the southern portion of Lennar Mare Island's property also known as the Eastern Early Transfer Parcel in investigation area C-2.

The building was constructed in 1941 covering an area of about 15,500 square feet.

It was used by the Navy as a steam test pump plant, whatever that is.

It's currently used by a, as an industrial coating facility, warehouse and shop.

And its future use is going to be as an industrial facility.

But what we really want to focus on at this site is that there are ten pits that were discovered as we started looking at the site and going through some of the missing documents that we went through.

And those -- there are six shallow pits that are less than one and a half feet, which shocked us when we actually started going in there because we thought one of them was another deep pit, but it wasn't.

There are four deep pits; two that are seven feet deep, one that's nine feet deep, one that's 16 feet deep.

Eight of those pits are covered by interlocking steel plates that they used to really like to use because they can clamp things down on it and then work over the plates. And they had pits underneath the plates where they could catch things.

And then two of those piss are just covered right now by flat steel plates.

So the next slide shows you the Building 688 facility. It's located on the eastern side of Railroad Avenue. There's the facility right there just to the west of building 680.

And then this is a -- some pictures that show you the interior of the facility. This one's really hard to see up here on this side, really dark. But you can see there's a lot of equipment in this facility.

This is one of the steel plates right here.

This is pit five, it has an interlocking steel plate.

You can see it did have some access ports like right here. There was actually an access way that you could get into right here.

This right here you can see the steel plate is pit nine, and then back here where all these ladders are located, that was pit ten.

So when we first started considering doing the remediation of the site is that, because we had a tenant in there it was thought to be done in phases, and I'll show you as we move along here later in the presentation how those phases were going to come about.

But unfortunately, what happened in this building earlier this year was that there was a fire. So that fire, this was the plate pit ten area right here, that fire started right over that pit ten. And so to assess everything that was in the building they had to actually take everything out of the building and relocate at another facility on Mare Island.

After their insurance company did its investigation, then we were allowed to go in here and start looking at these pits. So it made it a lot easier. Instead of having to do it as a phased approach, trying to do it on nights and weekends and then setting it back up to make sure that the tenant could reuse the facility during the daytime, they actually had to vacate the facility which allowed us to get in there and do it all at once.

CO-CHAIR HAYES: Another one of those amazingly fortuitous fires, huh?

MR. SILER: Yeah, I don't think it would be called fortuitous, but definitely to be able to get in there at one time.

So originally with the color coding here this shows you the pits. Pit two, three, seven, six, four and eight, those are the shallow pits. Most of these are about a foot and a half deep.

This one is only about eight inches deep, pit number two.

Pit number one and pit number five are seven feet deep.

Pit number nine is actually circular, that's just showing the plate over it. It's about ten feet on the outer lip in diameter. There's an inner diameter as you go down into it, about eight and a half feet in diameter, goes down to about nine feet.

And then pit ten, this is about 16 feet deep, and it had three tanks in it. And I'll show you as we removed those tanks what we found when we took the plates off to take a look at it.

But the next slide shows you the statistics about the plates. It gives you an idea of the dimensions of them, the access ports, the samples that were previously taken to show you that there was an issue in these pits.

But between 2008 and 2015 we collected sediment and water samples as they were discovered in the pit. And we didn't decide on either one, it was just dependent on the media that was in the pit what kind of sample we collected. Some we just had sediment, some we just had water, some we had water and sediment. And you can see that down here in the lower area as we looked at these.

But we analyzed these for total petroleum hydrocarbons, volatile organic compounds, semi-volatile organic compounds, organochlorine pesticides, polychlorinated biphenyls, PCBs, and metals. So we ran the full gamut of anything that possibly could be an issue in these pits.

So what did we find and why is there a problem? If you take a look at the sediment samples, we had very high levels of total petroleum hydrocarbons as diesel and motor oil. We had a high level of an organic chlorine pesticide, DDE, that dichlorodiphenyl dichloroethylene.

PCBs. We had some high hits of PCBs in these pits, 11 milligrams, 14 milligrams per kilogram.

Some high hits of metals. Just so you know, lead at a thousand is considered to be hazardous under California law.

And then in the water we had some high petroleum hydrocarbons that we had to deal with.

So the approved cleanup plan. As we step forward in these pits --

CO-CHAIR HAYES: Could I ask, maybe I missed something in your presentation.

MR. SILER: Yes.

CO-CHAIR HAYES: Do you have any speculation or, about things like how you got organochlorine pesticides in these pits?

MR. SILER: That I have no idea how they got them in there, but they're definitely there.

MR. COFFEY: Wow. These are encapsulated, they are enclosed pits?

MR. SILER: They are concrete pits. They are concrete on the base and all four sides, all of them. But what they used to do was they used to, whether they had some sort of a pest issue in there or something or, you know, something that they were trying to deal with.

MR. COFFEY: Rats.

MR. SILER: I couldn't tell you.

CO-CHAIR HAYES: What about all these other very high levels of metals, what were they doing with these pits?

MR. SILER: Again these were -- what the historic was, it was called a steam test pump plant --

CO-CHAIR HAYES: Oh, yeah.

MR. SILER: -- is what it was called. Whatever that means I couldn't tell you exactly. But what I really liked about these pits, and especially those interlocking plates, was the fact that they could clamp like stands to them, and then clamp things to the stands, and then work on them. So I have the feeling they worked on metals, something that had metals. They were working on metals all the time when they were in there.

And then there are actually ways you can get through these pits there. They actually have little areas that are gaps. So I have a feeling a lot of this stuff accumulated in the pits over time. So

again this probably, as I mentioned, this facility was constructed in 1941. I don't think that anybody ever cleaned out one of these pits from 1941 until now.

So the approved plan. There was one boring that we did early in 2008 where they tried to get down below, down to fifteen feet, down to groundwater, and they could only get down to seven feet. They had a little bit of a petroleum smell that they found in there, so the whole idea of that was to get below that seven foot level and get down to where we could see if there was any increase in petroleum hydrocarbons as we went down in the column.

The other thing we had to do was remove the steel covers from the pits as feasible.

Remove any sediment or liquids that was in the pits.

Inspect the pits.

Power wash the pits.

Go ahead and inspect the pits again, see if there was any signs of etching, cracking, any way that there was a transfer point between groundwater or water coming into the pits or out of the -- or something in the pits getting outside into the environment.

We wanted to collect wipe samples of the pit covers, make sure that there wasn't any contamination on those pit covers.

Collect composite and discrete concrete chip samples of the pits.

Backfill the pits and restore covers as appropriate.

And obviously dispose of the sediment and water as appropriate.

CO-CHAIR HAYES: What are they going to --

MR. COFFEY: Yeah, what are are you going to backfill it with?

CO-CHAIR HAYES: What are you going to backfill it with?

MR. SILER: We've gone back to the tenant -- and let's go back to the pits themselves and I'll show you where the pits are -- and asked them what they wanted.

We're going to actually -- these three pits right here, they're going to be, have rock put in them up to about a foot, then fabric, and then they're going to be capped with reinforced concrete, about a foot of reinforced concrete.

This is the only pit that's going to have its interlocking steel cover placed back on it, because that's what the tenant wants, he wants that interlocking steel cover back on it.

But pit two, pit three, pit seven, six, four, eight, those are shallow, those all get reinforced concrete. These three get rock up to a foot, and then reinforced concrete at the surface.

MR. COFFEY: Pit ten is 16 feet deep.

MR. SILER: That's right.

MR. COFFEY: That's a lot of rock.

MR. SILER: Yeah, that's a lot of rock.

MR. COFFEY: Are they going to compact that rock --

MR. SILER: Oh, yes.

MR. COFFEY: -- or do they expect it to settle?

MR. SILER: Oh, yes. No, it's going to be compacted.

So going back to that boring, and this is where that boring was just to the east of pit four right here. When they did this original boring they noticed that there was a thin layer at the bottom of seven feet where they had some higher petroleum hydrocarbons.

We found out why that was. It appears there was some sort of a structure here. We used ground penetrating radar to actually find that structure, and then this was filled up with a real nice clean sand. So it's really clean down to about seven feet, and then we actually found that little stained area down below.

Now we have samples back and that wasn't at a level of concern.

Then we had to get out -- step outside the structure. That's why we had to map it with the ground penetrating radar. And took our boring down to fifteen feet. All those came back very low levels of petroleum hydrocarbon, so that does not appear to be an issue at this location.

Now, one of the hardest things that took, believe it or not it took five weeks to get these steel plates off because you had to have just the right equipment.

You can take a look here, this is the shallow plate right here. These were basically like almost rusted in place.

And take a look and I'll show you, and they were actually locked in place with other materials also. This is one of the deeper pits right here. You can see they're pinned and they're actually secured here in a number of places inside of the pits. So we actually had to crawl in the pits, you know, and actually cut all those off.

MR. COFFEY: They look like jack stands.

MR. SILER: Yeah. So here are the things we had to do. We used hand tools. Not only were these interlocking pits, you know, locked in place from those pins, they actually had taken wood and jammed wood in here all the way around and between these, these little pits right here, and we had to get all that out when we were cleaning all these pits. So we had to use hand tools.

So then we had to jackhammer around them to be able to get in to get to some of the pins in some of these, because some of the shallow ones had pins too that we had to cut off.

And then the last thing we had to do there, we are, he's working on the acetylene torch right there, that shows him outside there. But he actually had, in pit one and pit five he actually had to crawl in the pits and actually cut everything off inside because there were dual layers of pins that held the plates in place.

And so then in addition to that, on pit six there was the super structure that it looks like the Navy installed on top of it and then bolted it into the pit cover itself. So we unbolted it from the pit cover itself, but the only way to get the plate out was to actually torch and cut the entire super structure out, took it and moved it out of here, and then there it is right there without that super structure on it, and we recycled that metal.

So here we are, we're finally getting to lifting the plates. This is one of the shallow, this is pit number two right here, lifting the plate off of it. And we can do that with this grade-all. But

unfortunately that's a real thin plate right there, you can -- you could move it with that thing, but when you tried to pick up the plate from pit one or pit five or some of these other ones, it actually lifted up the back end of the grade-all so we had to get a new, very large forklift in there.

So this forklift did the trick. This is pit five, lifting the plate off of pit five and getting it off of there.

MR. COFFEY: Did you ask somebody what the weight of those things were?

MR. SILER: I don't know yet, we haven't had a chance to weigh them yet. But they will be recycled, and once they get recycled we will weigh them at that point.

So then here is -- once we got the plates off we actually set up a containment area in pit number seven and power washed the plates.

There's one of the plates right after its power washed. And you can see all that wood has been taken out between it so there's no porous material.

And then here it is left to dry. Then we collected wipe samples from these, tested them for PCBs. These all came back non-detect and below the residential reuse levels, so these will be recycled.

And then not only were there pits and sediment in the pits, in pit number ten there were these three large tanks that were actually about 16 feet deep. They were partially filled with water, so when we took the water out we pumped the water out, recycled it through carbon filters, bag filters, a number of times recirculated, made sure it was clean, and then it goes into a holding tank which is one of the pictures, and I'll show you if you want to see it again. And that's where it's residing right now.

We have results back on that, that water looks pretty clean, we should be able to discharge it to Vallejo San and Flood Control District.

But we had to get these tanks out, all this piping had to be cut out.

MR. COFFEY: You have any idea what was in the tanks, what the tanks was used for?

MR. SILER: Don't know.

MR. COFFEY: They look like missile silos.

MR. SILER: So these are those two pits. Here you can see the sediment inside this pit. That I think is resin, I don't know how they got resin in here, but there's some black sand in here, there's a number of things in here.

This one is pit number one, and it had a lot of sediment in it, and then it had this oily, oily sludge that we had to get out of it.

MR. COFFEY: Geez. Did it smell?

MR. SILER: Oh, yeah. So again here they are, they're scraping this pit out right here. This is pit number two.

Here you can see liquid in pit number six, and they're shoveling that out.

And here, I always ask these guys what they did to deserve this, but they got lowered into pit six, and then they had to shovel all this oily sludgy material out of here. So I wondered who who was mad at them.

CO-CHAIR HAYES: Who drew that straw, huh?

MR. SILER: Exactly. So then, you know, if you take a look, if we go back to this slide right here, this is pit number five, this is pit number one.

So after we power wash them, there's pit number two, see what it looked like.

There's what pit number five and pit number one looked like.

And not only did they power wash them, they actually had to hand scrape the walls in a number of areas to get everything out.

And you can see this is where they had to cut all those pins off. And there were two pins on each side of these, and they had to get in to do it.

The same with this one right here.

So where we are right now, we've collected the chip samples from the sidewalls and the base of these pits. You can see right here, not only did we collect chip samples and composite them, but like in some of these pits, like this is pit number five, there were some stained areas, we took discrete samples of the stained areas, and then analyzed those for the constituents of concern which were the petroleum hydrocarbons, the organochlorine pesticides, the PCBs, and the metals. So those were all getting tested for those things.

Unfortunately, I don't have all those results back.

So the remaining work. We have to transport and dispose of the materials off-site.

We've got to receive and evaluate the confirmation sample results.

MR. SILER: So based on those results we want to discuss the path forward with the regulatory agencies and then perform additional remedial actions as necessary.

So if anybody has any questions I'd be glad to answer them.

MR. COFFEY: You said they had to climb out there and cut out those pins.

MR. SILER: Yeah.

MR. COFFEY: That's an oily sludgy area.

MR. SILER: Oh, yeah.

MR. COFFEY: Wasn't there fear of starting a fire?

MR. SILER: Well, that's actually what happened. You had to be in there cutting it, and it would ignite sometimes because it would be -- and then you'd have to have a fire extinguisher to put it out, and then wait a few minutes and then do it again.

So, like I said, the hardest thing was just getting the covers off.

MR. COFFEY: Geez. And you guys didn't know anything about the stuff that was in there prior to that?

MR. SILER: Well some of these, like pit one, let's just take a look, go back. Pit one had a bunch of heavy equipment on it, okay. It has an access port, but it had equipment on it too.

Pit two nobody could figure out how to get into it, it had no way to access it, like any of those access ports. So nobody had seen what it looked like until we were actually able to pull the cover off.

We thought this one potentially, because we knew this access port was here, we thought potentially this one was seven feet deep, but it ended up only being about eight inches deep when we found it.

A lot of these, like this one, this is pit six, this is the one that had the super structure over it, we couldn't get into it.

You know, we had, like some of these, like pit five we were able to look into, pit eight we were able to look into a little bit, it was a shallow and a deep one. But it was really hard because you only have these little sample ports, and you can only get directly below on these little sample ports to get into it. So it was really difficult to get in there until we could actually get these covers off and actually take a look and see what we have.

MR. COFFEY: So the tanks that you pulled out of pit ten, did you test the interior of those or did you just scrap them?

MR. SILER: Yes. Yes. Those are tested and those will be recycled.

MR. COFFEY: So you don't have any, still don't know what was inside them?

MR. SILER: Testing them for the constituents of concern, mainly PCBs in those.

MR. COFFEY: Yeah.

CO-CHAIR HAYES: Was this in the known unknown category? What category --

MR. SILER: No, this is an unknown.

CO-CHAIR HAYES: This is in an unknown, wow. And how much is this project? What was the cost so far?

MR. SILER: Cost so far is over $200,000.

MR. COFFEY: Cheap.

CO-CHAIR HAYES: They didn't hire you, that's why.

MR. COFFEY: Get a little money back from the recycling.

CO-CHAIR LEAR: All right. Thanks, Neal.

MR. SILER: Okay.

CO-CHAIR LEAR: All right. So we are at our first public comment period.

Any comments?

(NO RESPONSE.)

CO-CHAIR LEAR: All right. Ten minute break. And I think we have some refreshments in the back of the room, cookies and whatnot.

(Thereupon there was a brief recess.)

CO-CHAIR LEAR: We're at focus groups but skipping right down to D, city report.

Do you have anything you want to share, Erin?

MS. HANFORD: I'll never get used to this. Let's see. Just two things.

One that, they're calling it a building but I call it the rubble pile at G and Azuar, the city has decided to try to get rid of that soon, so that's on the high priority list.

MR. COFFEY: So soon is ten years?

MS. HANFORD: Well, I've only been here for six months so I can say soon.

CO-CHAIR HAYES: That happened Christmas Eve or Christmas morning.

MS. HANFORD: Right. And Kathleen mentioned on October 27th at the council meeting there will be an update on economic development.

So that's all I have.

CO-CHAIR LEAR: Okay. Lennar update.

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

CO-CHAIR LEAR: Okay. So I skipped the administrative business and announcements. I was so excited to go to focus groups. So just a reminder that we need to get any comment on the meeting minutes to myself or Myrna.

And did you have any other administrative business?

CO-CHAIR HAYES: Huh-unh.

V. FOCUS GROUP REPORTS

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

MR. SILER: So I talked about the remediation that's been taking place in September, that's the Building 688 pits site.

We've got some upcoming fieldwork. Building 121, trying to finish off that job.

Hoping to initiate remediation at a FOPL segment in front of Building 207 along Nimitz Avenue.

Finish off the oil houses and cistern site that's right by the museum.

We also have another PCB site outside of Building 688, one inside of 742 which is an elevator, try to initiate that.

And finish off some work in Building 746 at a couple of PCB sites in there.

We received one comment document back from the regulatory agencies from the Water Board, the Revised Sanitary Sewer Data Gap Summary Report. We got comments back on that earlier this month.

And we're trying to actually close out a number of sites, actually a number of areas -- to take a look in the map here -- B.2-2 which is right here, and then H-2, were we're very close to getting those closed out. There's only one site left, we're waiting to get a report back on B.2-2. The same with H-2. Once we do that then we can get the implementation reports together, so hopefully those will be closed out.

There's another site we're looking at, and for those of you who don't know, there's one portion in IAC-2 which is where it says building 866 right in here, and that area, we're doing a voluntary cleanup in there. That was originally slated for commercial reuse, and we decided to clean it up to unrestricted residential standards. And the proposed land use in there is to put single-family homes in it.

We've gotten everything down to unrestricted use requirements except one UST site, M57. We've remediated the soil in that area. We've gone back to take a look at groundwater. We're actually doing another groundwater event there.

When we had left this site back in 2010 it looked like it was going to be closed, but it was closed out for industrial commercial reuse. We went back, took another sample, and lo and behold that sample, after we remediated all the soil down to unrestricted land use, was higher than the unrestricted use for groundwater. So we've been looking at that. We had a presentation that we gave to the Water Board earlier this week. They're going to go back and evaluate it.

We're going to continue to do monitoring. And if we have to do remediation to close that out based on the advice of the Water Board, then we'll go out and do that to close that area out. So that's about it for right now. If anybody has any questions I'd be glad to respond to those questions.

MR. COFFEY: Is there anything going on in the triangle?

MR. SILER: In what, the BGM triangle?

MR. COFFEY: Yeah.

MR. SILER: It's all done except what's left is to get the documentation, the operation and maintenance agreement, and then finish off the LUC.

That area is really close to being closed out too, there's only one site left in there and that's the building 144 oil water separator, and we're trying to get that closed out.

But it looks like B.2-2, H-2, those two areas are very close to being closed out. And hopefully soon after that investigation area C-3 will be able to be closed out. And then the orphans, which are mine, which are investigation area C-1 and C-2 which is a heavy industrialized area, those will take a few years longer to close out.

CO-CHAIR HAYES: It's interesting that you say a few years longer. I remember well the transfer, the Eastern Early Transfer celebration --

MR. COFFEY: Yeah.

CO-CHAIR HAYES: -- where it was stated that -- that was 2002, March of 2002 -- by Lennar that they would be in and out of this environmental cleanup that the Eastern Early Transfer provided for in five years, in 2007 they'd be done.

CO-CHAIR LEAR: We all have dreams.

MR. SILER: That was the plan. That's right. We all have the dream.

CO-CHAIR LEAR: Weston update.

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

MR. GEMAR: Well, we're living the dream out on the west side of the island. So another exciting couple of months watching pickleweed grow, which is the picture in the lower right.

But you can see it's a pretty healthy stand of pickleweed now in the constructed wetlands out there at the south end of the island.

And just above that we're watching the landfill not settle by taking annual measurements of the elevations at monuments across the site. And it's been stable, but we'll get some, you know, additional results this year.

MR. COFFEY: You would have thought the earthquake would have settled it a little too.

MR. GEMAR: We actually took results after that quake and it didn't move a bit.

MR. COFFEY: Wow.

MR. GEMAR: And then in the lower left Larry Maggini is out sampling groundwater, which is probably moving a few feet per year, so nothing too exciting there fortunately.

And on the document front, got a couple of documents that are in the hopper going back to the agencies with some responses to comments on the H-1 annual remedy status report. We're holding off on that one to incorporate the replacement of a couple of monitoring wells that I mentioned last time that has been completed.

And then also the Record of Decision slash Remedial Action Plan for the IRb05, Dredge Pond 7 South, and Western Mag sites has been reviewed and just have some comments to clean up on that.

And then one new document has been generated, that's the remedial design for IRb05, etcetera, and that's to address the land use controls and the implementation that were selected as -- under the ROD or the Record of Decision. So that is going to be going to the Navy here, well actually it just went out this week.

So that's what I've got.

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

CO-CHAIR LEAR: Regulatory update. You're alone tonight.

MR. HSIEH: I guess I am. So I guess I'll talk for Elizabeth since she couldn't be here. She is currently in Chicago running a half marathon. She's running with a group that is involved with Michael J. Fox's charity for a Parkinson's cure. So you can ask her how that turned out the next time she's here.

And she is just busy working on reviewing and getting back comments and documents.

And for me, I don't really have much to add other than that too. So --

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

CO-CHAIR LEAR: Co-Chairs' report. This is the Navy Co-chair report. So this last month we've done PCB remediation as well as some sampling out at crane test area and DRMO south south.

There was PCB remediation at five buildings. One was in C-2, but I believe the rest of them are in F-1, which is the PMA, the production manufacturing area.

The groundwater sampling, as I mentioned, was done at CTA North and the DRMO south site. Those were actually repeat samples. Some samples were taken earlier that we found out later

didn't have proper quality control, and so the contractor went back out to collect those samples in the proper way. And that, of course, will delay the reports a little bit. But it will be done right.

So the Navy submitted three documents this last period. And we did get some comments back from the Water Board on the Draft Final UST 993-4 Closure Report. So that one's almost done.

Our next meeting, if you all remember, our November meeting almost invariably falls on Thanksgiving, so we always push it to the first week of December. So that will be December 3rd.

And with that, I'll turn it over to Myrna if she has anything to share.

CO-CHAIR HAYES: We haven't done a RAB tour in some time. Usually we did one in the spring and the fall. And when are we going to plan one of those, huh?

MR. COFFEY: Can you make it the end of November?

CO-CHAIR LEAR: November?

CO-CHAIR HAYES: We did used to do it in November.

MR. COFFEY: We used to do it in early December.

CO-CHAIR HAYES: Early December, that's true. Yeah. Okay.

MR. COFFEY: Back in the old days.

CO-CHAIR HAYES: Yeah, olden times. Okay. Speaking of old days. Chris Rasmussen wrote me an e-mail that he's going to resign but he's going to look for a replacement first.

MR. COFFEY: Okay.

CO-CHAIR HAYES: Okay. Then just some dates coming up that are important to me anyway and I'll share them with you.

Well, first of all I just wanted to report that Touro University held a zombie race, a 5K race in the Mare Island Shoreline Heritage Preserve last Sunday, had a great turnout and a lot of fun. You can go to our Facebook page and see some of the photos of the zombies.

MR. COFFEY: Any brains eaten?

CO-CHAIR HAYES: Well, they were trying to get at Nitro, but there's a great video clip of that on the website.

Okay. September 26, that's this Saturday, I beg you to come out at 9:00 o'clock in the morning to volunteer, or at least have your photo taken as if you're volunteering, because the U.S. Army reserve, our good friends, our neighbors, have been awarded, they applied for and were awarded a national public lands day grant out of someplace in Washington, D.C., and they're desperate for at least five volunteers to appear this Saturday, the 26th, sometime between nine and eleven at the historic guardhouses or sentry houses or guard shacks, as they're all known by, at the entrance to our preserve. It's on their property. And they're doing some sprucing up and placing a commemorative plaque that they've had made. And also, or we are, I guess, as volunteers, placing a nice interpretive sign that this grant is paying for about the ammunition depot and about the preserve, and I think we're planting poppies. I don't know if that's a very good plant to plant in the planter boxes but --

MR. COFFEY: California poppies maybe.

CO-CHAIR HAYES: No, they just burn out sometime in the summer. But anyway, come out Saturday September 26th from 9 to 11, and help out with sprucing those up. Apparently they probably aren't going to be able to paint those buildings but, right now because of environmental contamination, how about that.

We have boat trips coming up. If you're interested or you know people are, if you can help us get the word out, October 17, one to three, that's a Saturday.

October 18, Visions of the Wild H20, the U.S. Forest Services' festival will be, they'll be doing a boat tour 10:00 a.m. to 1:00 p.m. These are all aboard the River Dolphin, and on all of the cases I'll be the river guide.

And then we are doing, the Mare Island Heritage Trust is doing a similar boat trip from four to 6:30 that evening. And the nice thing about that one is it's going to have a boatload of Cypress Grove cheese that had just been donated. You can ask me about that cheese if you like.

And Nightmare Island is coming up the last two weekends in October. Eight days of scaring the heck out of people, I hope, and for a good cause at the preserve.

And finally, the Lost Boats Memorial should be, I think the eighth year. You'll have to do the math. From 2007, our first service, to this year, October 18, Sunday. It's going to be a busy day for me.

We'll be doing a dockside service back at berth six where the landing craft support gunboat is. Berth six is the historical submarine base for World War II, the submarine berth where submarines that were built here at Mare Island, or not, came in during World War II for modifications, overhauls, and repairs.

So join us. Flag raising at Morton Field at one, and immediately following a dockside service with Larry Maggini as the speaker, again who you saw in the Weston report with Weston Solutions.

Okay. Thank you very much. That's it.

CO-CHAIR LEAR: Okay. Thanks, everybody.

Drive safe and we'll see you next time.

(Thereupon the proceedings ended at 8:44 p.m.)

LIST OF HANDOUTS:

- Lennar Mare Island Update – Features Within the EETP September 2015 RAB Update
- Presentation Handout – Installation Restoration Site 04 Remedial Investigation and Feasibility Study Mare Island Naval Shipyard, Vallejo, California
- Presentation Handout – Remediation of the Building 688 Pits Site Investigation Area C2
- Weston Solutions Mare Island RAB Update

Attachment 1. Lennar Mare Island Update – Features Within the EETP September 2015 RAB Update

PIT 5 CONDITION PRIOR TO CLEANUP, BUILDING 688 PITS SITE, INVESTIGATION AREA C2

PIT 5 CONDITION AFTER CLEANUP, BUILDING 688 PITS SITE, INVESTIGATION AREA C2

Documents Submitted and/or in Review/Modification:
IA C1 Draft Final for Public Review RAP, 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/Annual 2014 Groundwater Monitoring Report, IR15 site, IA C1
First Semi-Annual 2015 Groundwater Monitoring Report, IR15 site, IA C1
IWPS4 / OWS T-2 Pilot Test Implementation Report, IA C1
IA C1 and C2 Draft Final Initial Study, IAs C1 and C2
IA C2 Remedial Action Plan, IA C2
Building 382/Building 388 FOPL Segments Remediation Implementation Report, IA C2
Phase I and II Investigation Report, Building 386 Oil Pipes, IA C2
Building 46 Oil Pipe Phase I Remediation Implementation Report, IA C2
Revised Building 742 PCB Site UL#02 Cleanup Plan and Response to Comments, IA C2
Building 742 PCB Site UL#03 through UL#06 Land Use Covenant, IA C2
IR21 and Buildings 386/388/390 Area Storm Sewer Remediation Implementation Report, IA C2
O&M Plan, Building 730 PCB Site AL#01, IA C3
Draft Final LUC for IA C3 BGM Triangle IA C3
Land Use Covenant for Building 1342 PCB Site UL#01, IA C3
Final IA C3 BGM Triangle O&M Plan, IA C3
Building 516 AL#01 and UL#01 Final LUC, IA C3 (for Regulatory Agency Concurrence)
IA D1.3-South Draft Implementation Document
IA B.2-2 Draft Final Implementation Report
Request for Modification, Land Use Covenant Operations and Maintenance Plan, Eastern Early Transfer Parcel
Remedial Action Implementation Report, Building 637 Area, Investigation Area B.2-2 (for Regulatory Agency Concurrence)
Data Gap Investigation - Final Report, Buildings 207 and 85/89/271 Area, FOPL Summary and Groundwater Report, IA C1
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)

Upcoming Field Work:
Building 121, Rooms 101 and 103, Petroleum Hydrocarbon Remedial Actions, IA C1 (Continuation of Remediation)
Third Quarter 2015 Groundwater Monitoring, UST M57 Site, IA C2
FOPL Segment H1/X/B207S, Petroleum Corrective Action Plan Implementation, IA C1 (Initiation of Remediation)
Oil Houses 434 and 862 and Cistern 36, IA C2 (Initiation of Remediation)
Building 688 UL#01 PCB Site Remediation, IA C2 (Next Phase of Remediation)
Building 742 UL#02 PCB Site Remediation, IA C2 (Initiation of Remediation)
Building 746 UL#01 and Building 746A UL#01 PCB Site Remediation, IA C2 (Continuation of Remediation)
Building 144 Former OWS, Groundwater Monitoring (Third Quarter 2015), IA C3

Upcoming Documents:
IA H2 Final Implementation Report
Final Cleanup Plan, Building 742 PCB Site UL#02, IA C2
IA C2 Remedial Action Plan Fact Sheet, IA C2
Agency Reviewed / Commented or Concurred Documents:
Revised Sanitary Sewer Data Gap Summary Report, IAs C1 and C2 (Comments)
Field Work Performed:
Building 688 Pits Remediation, IA C2 (Continuation of Remediation)

FEATURES WITHIN THE EETP

SEPTEMBER 2015 RAB UPDATE
LENNAR MARE ISLAND, VALLEJO, CALIFORNIA

REMEDY ENGINEERING, INC.

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Attachment 2. Presentation Handout – Installation Restoration Site 04 Remedial Investigation and Feasibility Study Mare Island Naval Shipyard, Vallejo, California

Installation Restoration (IR) Site 04
Remedial Investigation and Feasibility Study
Mare Island Naval Shipyard
Vallejo, California

Restoration Advisory Board Meeting

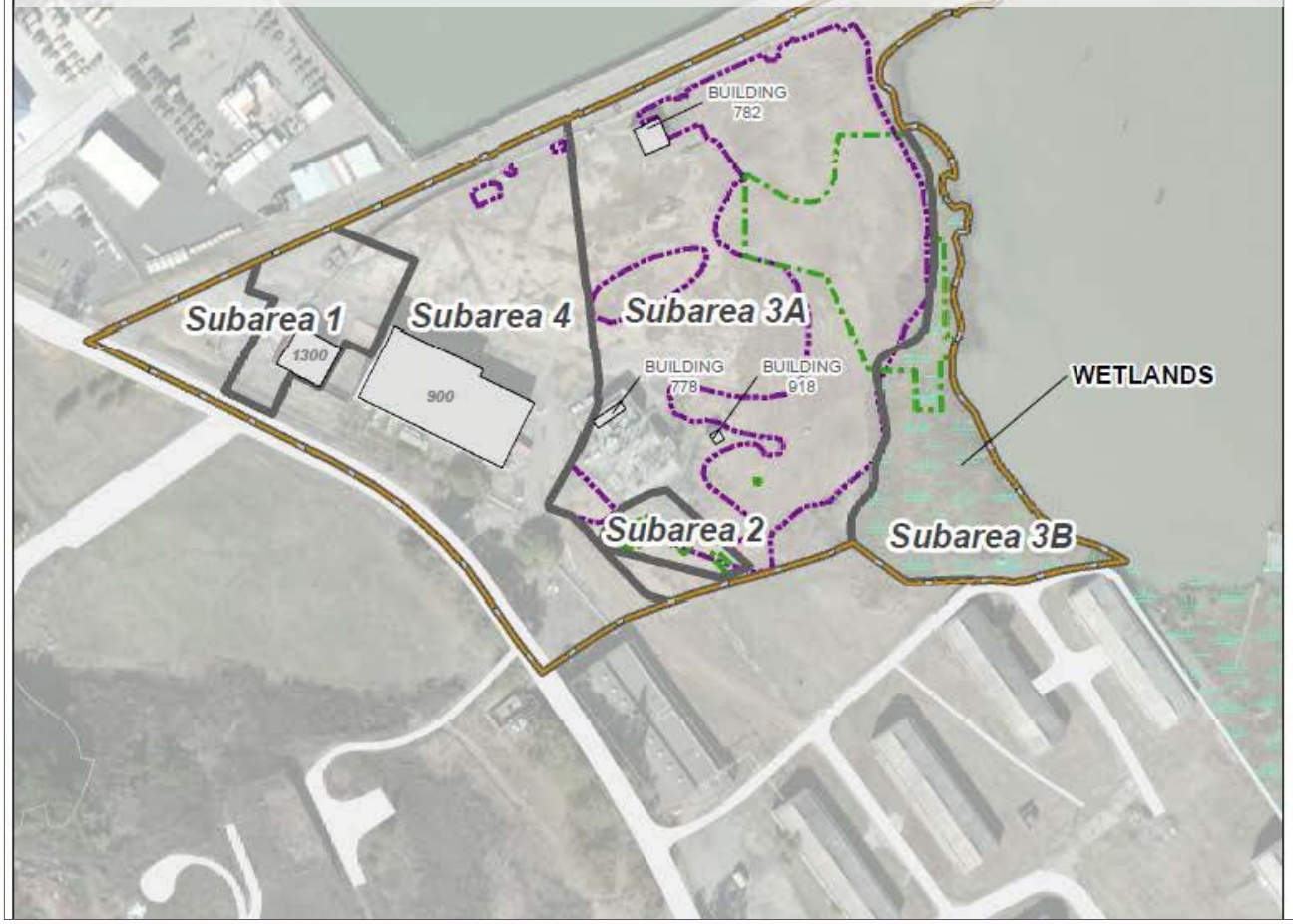
September 24, 2015

Presentation Overview

- Site History
- Previous Investigations and Actions
- 2013 – 2014 Data Gaps Investigation
- Remedial Investigation Results
  - Solid Waste Management Unit (SWMU) Characterization
  - Site Characterization
  - Risk Assessment Summary
  - Feasibility Study (FS) Recommendations
- Feasibility Study Remedial Alternatives
  - Target Treatment Zone (TTZ)
  - Remedial Alternatives Evaluated
- Next Steps
  - Comprehensive Environmental Response, Compensation, and Liability Act Process
  - Schedule

Site Map

Building 778 – Electrical Substation (1942-current)
Building 782 – Electrical Substation Center (1943-current)
Building 900 – Sandblast Facility w/Paint Spray Booths (1955-1992)
Building 918 – Sewer Pump Station (1959-current)
Building 1286 – Sandblast Enclosure (1963-1993)
Building 1300 – Paint Spray Shed (1975-1992)
Building 1316 – Pump Station #8 (1975-1992)



LEGEND

- IR Site 4 Boundary
- IR Site 4 Subareas
- 2000 Excavation Area
- 2007 - 2008 TCRA Excavation Area
- Building/Structure
- Road
- Wetland

NOTES:
FS - Feasibility Study
IR - Installation Restoration
RI - Remedial Investigation
TCRA - Time-Critical Removal Action

GRAPHIC SCALE
0 125 250 500
(IN FEET)
1 INCH = 250 FEET

DEPARTMENT OF THE NAVY
SAN DIEGO, CALIFORNIA
NAVAL FACILITIES ENGINEERING COMMAND

IR SITE 4 RI/FS REPORT
FORMER MARE ISLAND NAVAL SHIPYARD
VALLEJO, CALIFORNIA

FIGURE 2

IR Site 4 History

- **1900**: site is largely tidal wetland
- **1932**: used for storage (lumber, anchors, buoys); 2 to 12 feet of imported fill has been placed at the site
- **1944**: electrical transmission towers and buildings are present, railroad tracks installed, and significant portions of the site are now paved
- **1950s-1980s**: Components of dry-docked ships and submarines are sandblasted and repainted
- **1955**: Building 900 (spray paint booths) built
- **1975**: Building 1300 (paint shed with dip tanks) and sandblasting enclosure built
- **1992**: sandblasting and painting activities ceased

IR Site 4 Previous Investigations and Actions

- Preliminary Assessment (PA)/Site Inspection (SI)
  - 1983 Initial Assessment Study
  - 1987 Verification Study
  - 1994 PA/SI
- Remedial Investigation (RI)
  - 1988 Phase I RI
  - 1993 Phase II RI
  - 1997 Greensand Characterization
  - 1999-2002 Human Health and Ecological Risk Assessment of Greensand
  - 1999 Groundwater Monitoring
  - 2013 Data Gaps Investigation
  - 2014 Additional Data Gaps Sampling

IR Site 4 Previous Investigations and Actions (Continued)

- 1998 – 2000 Unexploded Ordnance (UXO) Intrusive Investigation
  - No historical use or storage of ordnance; however, included in initial investigation due to proximity to PMA
  - 260 discrete, magnetic anomalies were identified and excavated
  - No ordnance: IR Site 4 removed from the ordnance program
  - "Paint Can Pit" was discovered in what is now Subarea 2
    - Debris (cans, filters, packaging) removed
    - Soil over-excavated to approximately 10 feet bgs

- 2007 – 2008 Time-Critical Removal Action (TCRA)
  - Removed 28,400 cubic yards of soil and spent sandblast material (SBM)

2007 – 2008 TCRA Map

IR Site 4 Previous Investigations and Actions (Continued)

- Revised Draft Final Remedial Investigation Report – January 2010
  - Subarea 2 was identified as the volatile organic compound (VOC) Subarea due to the presence of VOC impacted soil and groundwater as a result of discarded paint cans and associated debris found in the area.
  - Subareas 3A (Upland) and 3B (Wetland) contain metals, including chromium, cadmium, and lead, above screening criteria in soil/sediment associated with spent sandblast material.
- BRAC Cleanup Team Meetings Identified data gaps – September 2010, January 2011, and March 2011
  - Groundwater analytical data across IR Site 4
  - Soil gas analytical data in Subarea 2
  - Lateral and/or vertical delineation of previously identified elevated contaminants of concern (COC) concentrations in soil across IR Site 4

IR Site 4 Previous Investigations and Actions (Continued)

- Water Board staff concur with Navy's request for beneficial use exception (exception to drinking water policy) for shallow groundwater due to total dissolved solids concentrations
  – May 2010
- DTSC issue concurrence and closure of J-Line section of industrial wastewater sewer (Installation Restoration Site 14) – July 2011
- Polychlorinated Biphenyls (PCB) Sites
  – Building 782 transferred into CERCLA program in May 2012
  – Building 900 and Building 1300: PCB Closure August 29, 2011

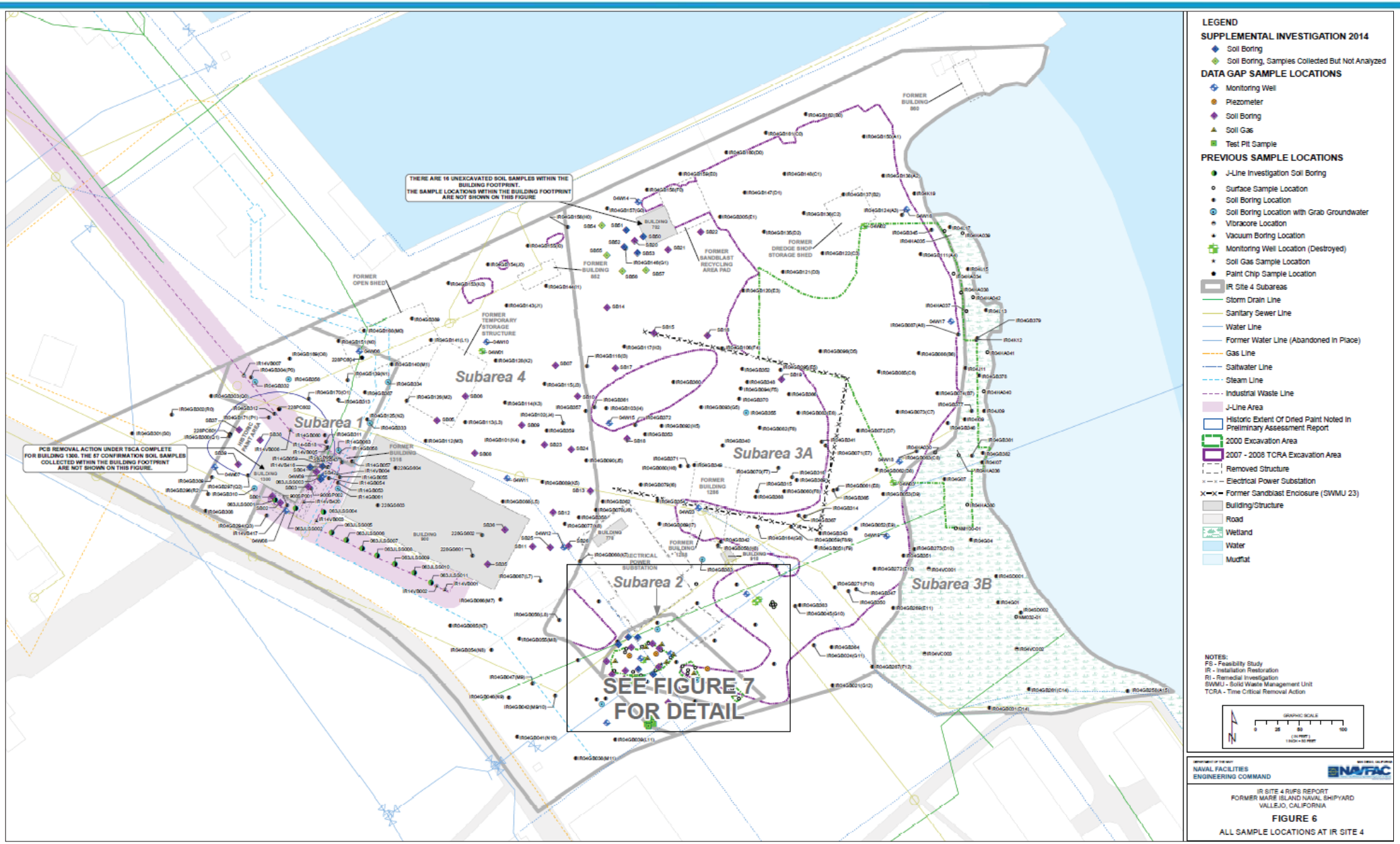
2013 – 2014 Data Gaps Investigation

- 2013 Data Gaps Investigation
  - Installed and sampled network of 18 new groundwater wells
  - Delineation of VOCs in Subarea 2 using soil and soil-gas samples
  - Soil sampling in Subareas 1 and 4 and 3A to complete delineation of TPH, metals, and PCBs
  - Targeted soil sampling to delineate contaminants of concern at Solid Waste Management Units (i.e. Paint Booths)
  - Installed two test pits (approximately 3 feet deep and 10 feet wide) to investigate elevated metals concentrations in soil

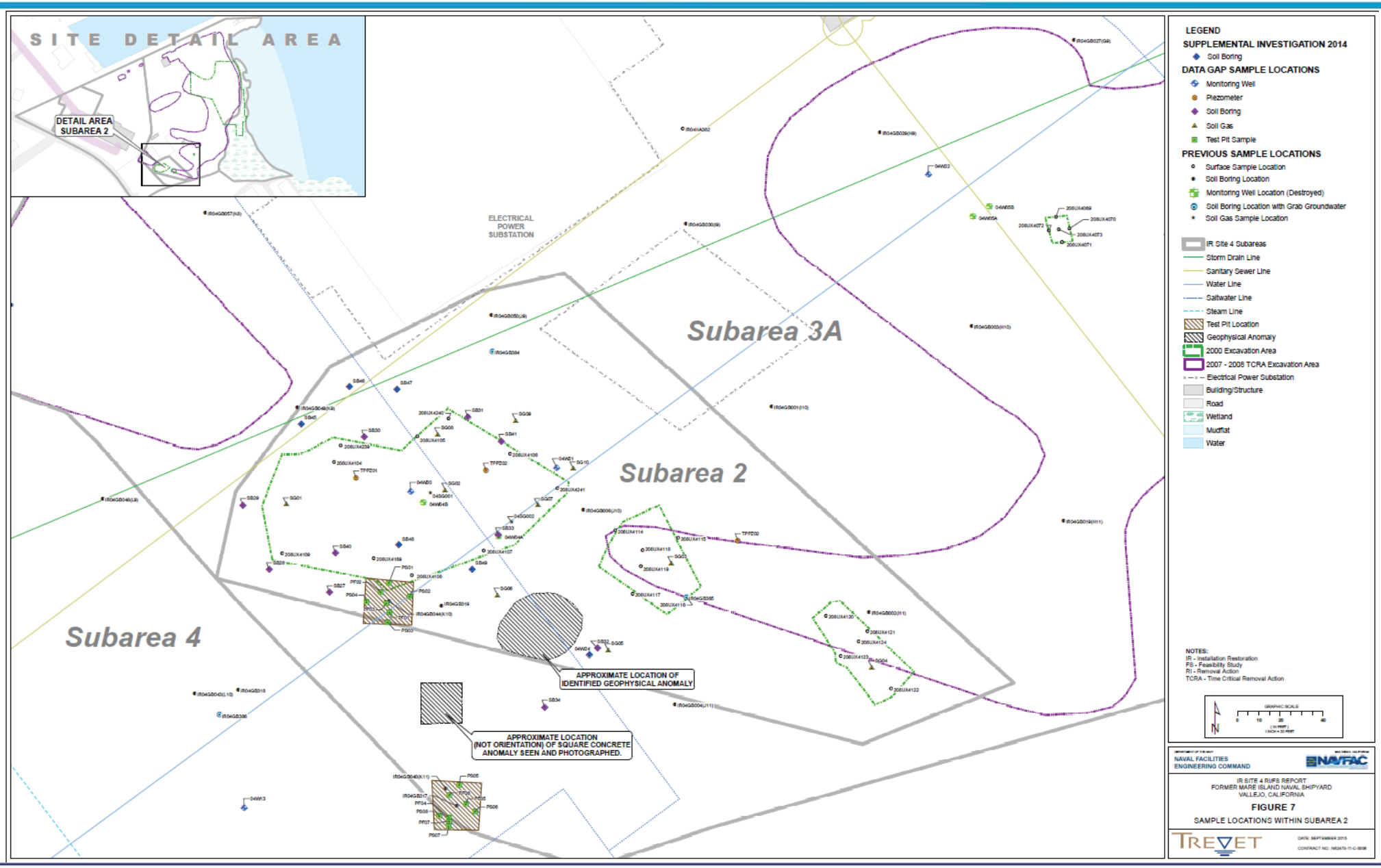
2013 – 2014 Data Gaps Investigation (Continued)

- 2014 Additional Data Gaps Investigation
  - Installed an additional groundwater well cross-gradient of Subarea 2 former paint can pit
  - Two additional rounds of groundwater sampling
  - Completed delineation of VOCs in Subarea 2 soil, hexavalent chromium in soil in Subareas 1 and 4, and PCBs in soil near Building 782 in Subarea 3A

IR Site 4 Sample Locations



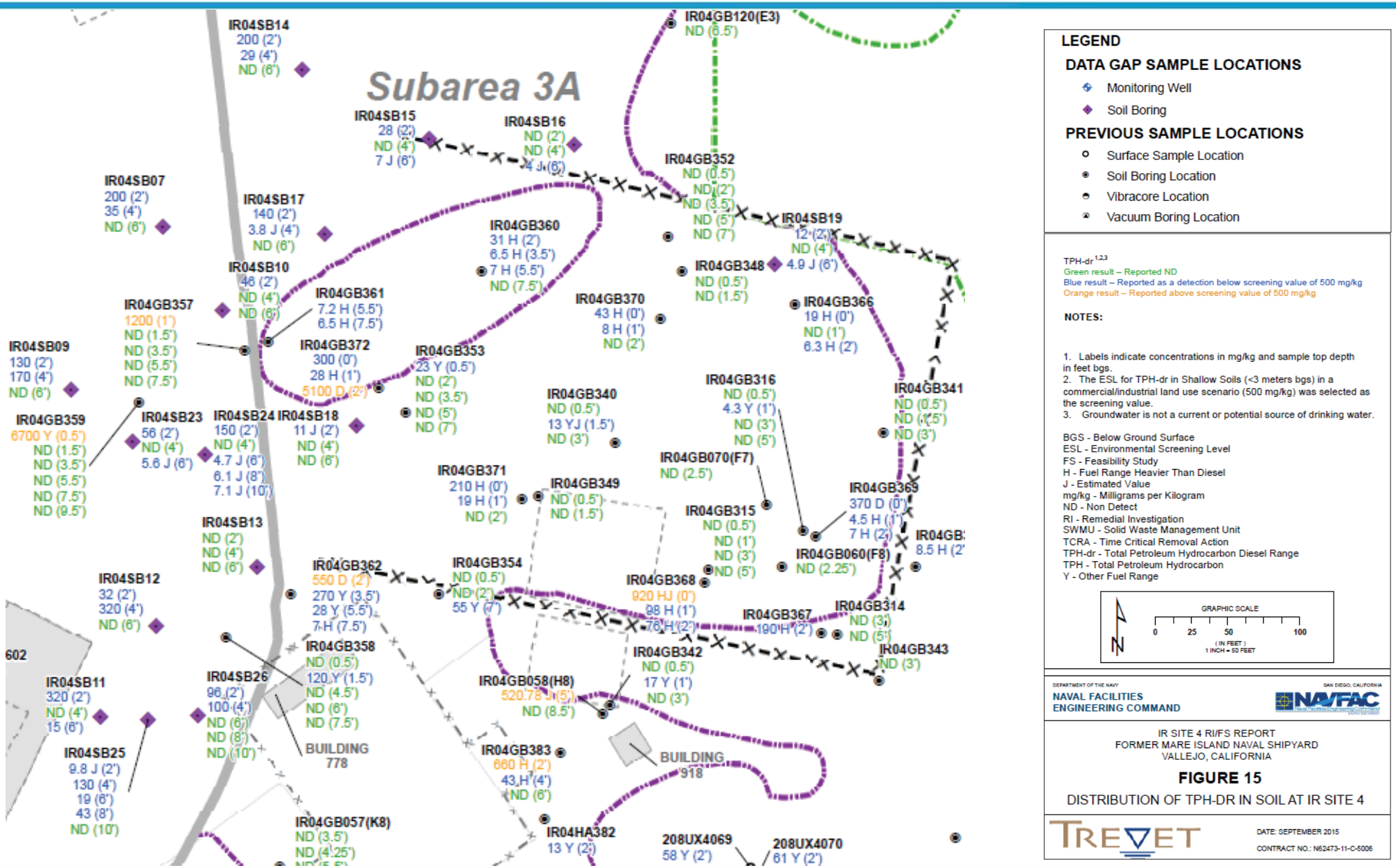
Subarea 2 Sampling Detail



RI Results – SWMU 23

- SWMU 23 – Former sandblast material enclosure area in Subareas 1 and 4 and 3A
- Partially excavated during 2007 - 2008 TCRA
- Data gaps soil sampling for total petroleum hydrocarbons (TPH), metals, and polycyclic aromatic hydrocarbons (PAHs)
- Only TPH-diesel range (TPH-dr) reported above screening criteria
- TPH is sporadic and shallow

TPH Diesel in Soil near SWMU 23



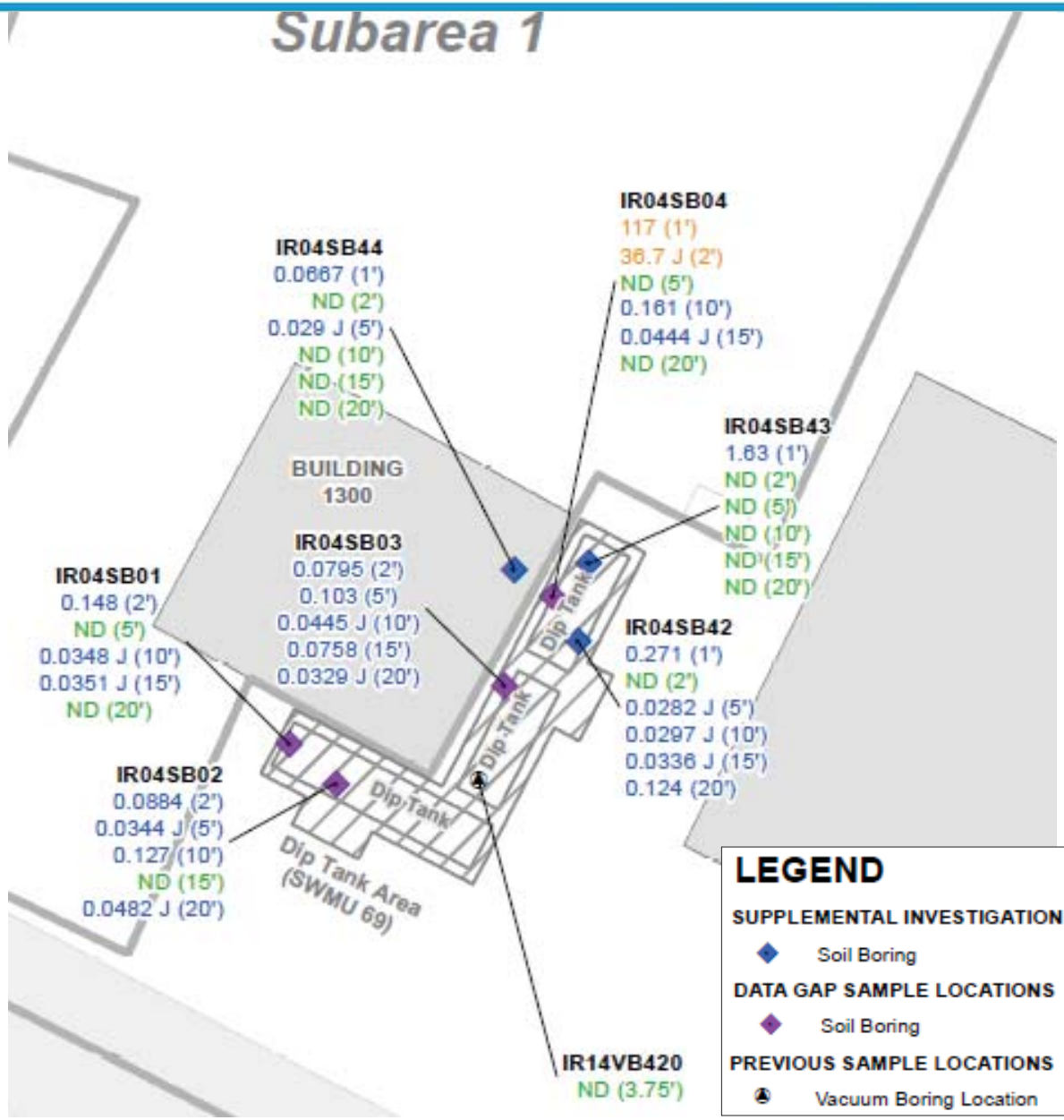
RI Results – SWMUs 68 and 70

- Paint Spray Booths (SWMU 68) and Paint Spray Booths with Water Curtains (SWMU 70)
  - Within footprint of Building 900, in Subareas 1 and 4
  - Six hand auger soil samples collected from 2 borings within crawlspace under Building 900
  - Soil samples analyzed for VOCs and metals
  - No evidence of a release in soil samples
  - No evidence of release of VOCs in downgradient groundwater wells.
  - No drains or sumps identified in crawlspace

RI Results – SWMU 69

- SWMU 69 – Former Iron Dip Tanks
  - Former aboveground iron dip tanks along south and east sides of Building 1300, in Subareas 1 and 4
  - Historically used iron dip tanks with chemicals that contained hexavalent chromium to prepare parts for painting
  - Soil sampling data show small, defined area of hexavalent chromium impacted soil
  - Two shallow soil samples exceeded screening criteria
  - Hexavalent chromium detected in three groundwater monitoring wells near Building 1300, but not above screening criteria

Hexavalent Chromium in Soil - SWMU 69



Hexavalent Chromium [1,2]
Green result – Reported ND
Blue result – Reported as a detection below screening value of 6.3 mg/kg
Orange result – Reported above screening value of 6.3 mg/kg

NOTES:
1. Labels indicate concentrations in mg/kg and sample top depth in feet bgs.
2. The 2014 Industrial RSL for Hexavalent Chromium (6.3 mg/kg) was selected as the screening value.

BGS - Below ground surface
FS - Feasibility Study
IR - Installation Restoration
J - Estimated Value
mg/kg - Milligrams per Kilogram
ND - Non Detect
RI - Remedial Investigation
RSLs - Regional Screening Levels

N

GRAPHIC SCALE
0 20 40 80
(IN FEET)
1 INCH = 40 FEET

LEGEND

SUPPLEMENTAL INVESTIGATION 2014
Soil Boring

DATA GAP SAMPLE LOCATIONS
Soil Boring

PREVIOUS SAMPLE LOCATIONS
Vacuum Boring Location

DEPARTMENT OF THE NAVY
SAN DIEGO, CALIFORNIA
NAVAL FACILITIES ENGINEERING COMMAND

IR SITE 4 RI/FS REPORT
FORMER MARE ISLAND NAVAL SHIPYARD
VALLEJO, CALIFORNIA

FIGURE 14

HEXAVALENT CHROMIUM CONCENTRATIONS IN SOIL

TREVET
DATE: SEPTEMBER 2015
CONTRACT NO.: N62473-11-C-5006

Subareas 1 and 4 Results and Risk Assessment Summary

- Current and Planned Future Use is Industrial
- Mostly Paved
- Hexavalent Chromium Release Detected in Soil Under Former Iron Dip Tanks (SWMU 69) in Limited Area and Well Defined
- Human Health Risk Assessment (HHRA) Evaluated Industrial, Construction Worker, and Hypothetical Residential Future Use Scenarios
  - All scenarios except hypothetical residential with domestic use of groundwater resulted in acceptable risk and a Hazard Index (HI) not exceeding 1
  - Based on concurrence with exception to drinking water policy, shallow groundwater not remediated to drinking water standards

Subareas 1 and 4 Results and Risk Assessment Summary, continued

- Ecological Risk
  - No significant habitat. No significant risk based on use.
- Feasibility Study Recommendation
  - Feasibility Study not recommended for Subareas 1 and 4.

Subarea 2 Results and Risk Assessment Summary

- Current and Planned Future Use is Industrial
- Partially Paved, with Remainder Maintained as Industrial with Regular Mowing
- Elevated VOCs Reported in Soil, Soil Gas, and Groundwater Media In and Adjacent to the Former Paint-Cans Disposal Pit Excavation
- Soil VOCs Primarily Seen at 10-15 feet bgs, Below Depth of Previous Excavation to 10 feet

Subarea 2 Results and Risk Assessment Summary, continued

- HHRA Evaluated Industrial, Construction Worker and Hypothetical Residential Future Use Scenarios
  - Hypothetical residential scenario resulted in an HI of 6, and cancer risk of $2x10^{-5}$ based on exposure to soil gas in indoor air
  - Risk drivers are VOCs in soil gas: trichloroethene (TCE), 1,1,2,2-tetrachloroethane and vinyl chloride
  - Domestic use of groundwater resulted in unacceptable cancer risk and HI.
  - Based on concurrence with exception to drinking water policy, shallow groundwater not remediated to drinking water standards
- Ecological Risk Results
  - No significant risk identified
- Feasibility Study Recommendation
  - Evaluate alternatives to address potential risks to human health (hypothetical residential use scenario) based on exposure to VOCs in soil gas
  - Hypothetical residential use scenario evaluated as part of unrestricted use option

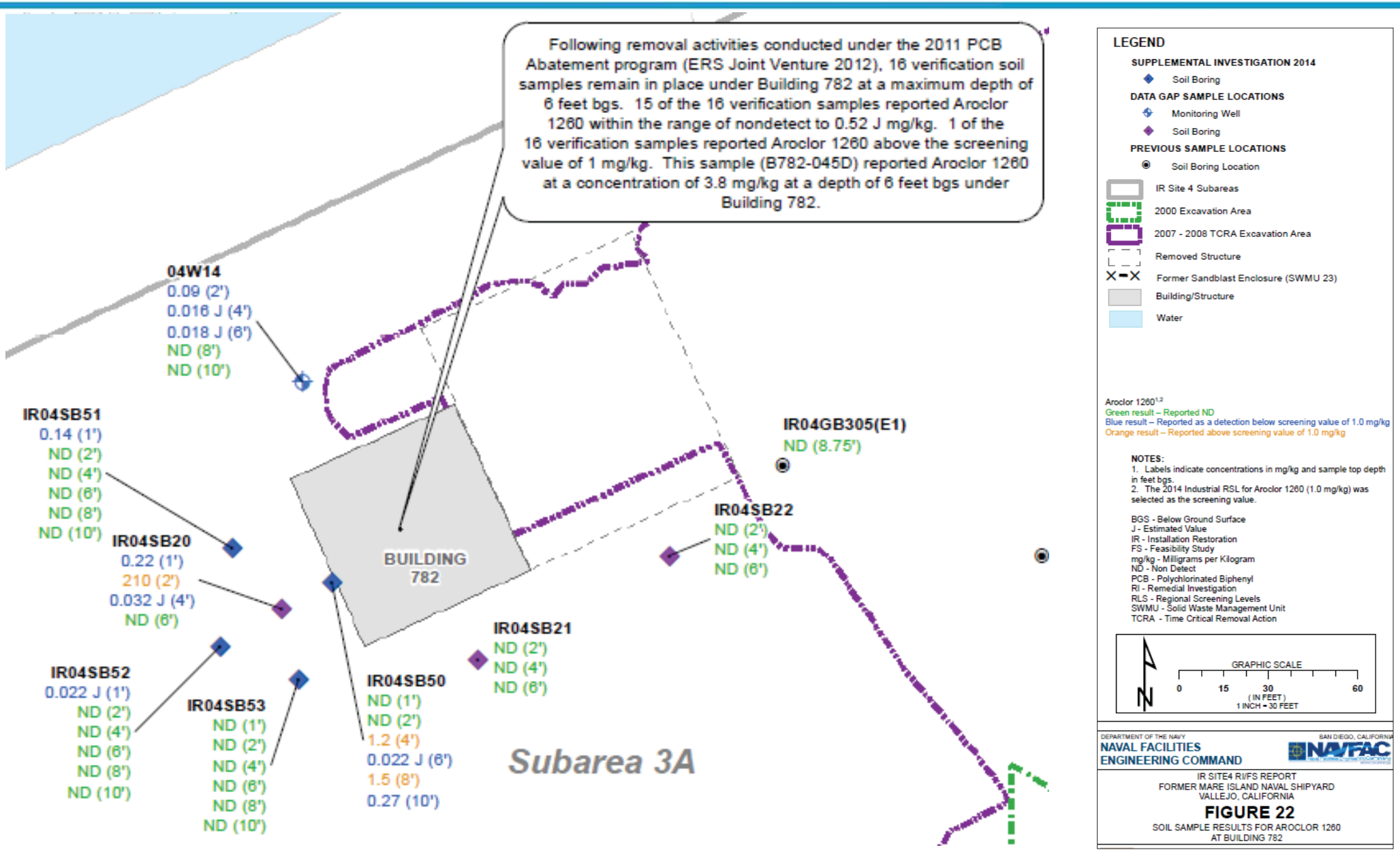
Subarea 3A Results and Risk Assessment Summary

- Planned Future Use is Industrial
- 28,400 cubic yards of Soil Was Excavated and Replaced with Clean Backfill During 2007 – 2008 TCRA
- Partially Paved with Most of Remainder Maintained as Industrial with Regular Mowing
- PCBs Remain Underneath and West of Building 782

Subarea 3A Results and Risk Assessment Summary, continued

- HHRA Evaluated Industrial, Construction Worker, and Hypothetical Residential Future Use Scenarios
  - Unacceptable risk from lead in soil for a hypothetical child resident, driven primarily by samples in the area bordering Subarea 3B
  - Unacceptable risk for a hypothetical resident and commercial/industrial worker was identified from exposure to PCBs in soil adjacent to Building 782
  - Domestic use of groundwater resulted in unacceptable risk and HI
  - Based on concurrence with exception to drinking water policy shallow groundwater not remediated to drinking water standards
- Ecological Risk Results
  - No significant habitat outside of the area bordering Subarea 3B
  - Metals in soil pose risk to ecological receptors
- Feasibility Study Recommendations
  - Evaluate alternatives to address potential risks to human health (hypothetical residential and commercial/ industrial use) from exposure to PCBs in soil
  - Hypothetical residential use scenario evaluated as part of unrestricted use option
  - Evaluate alternatives to address metals in soil

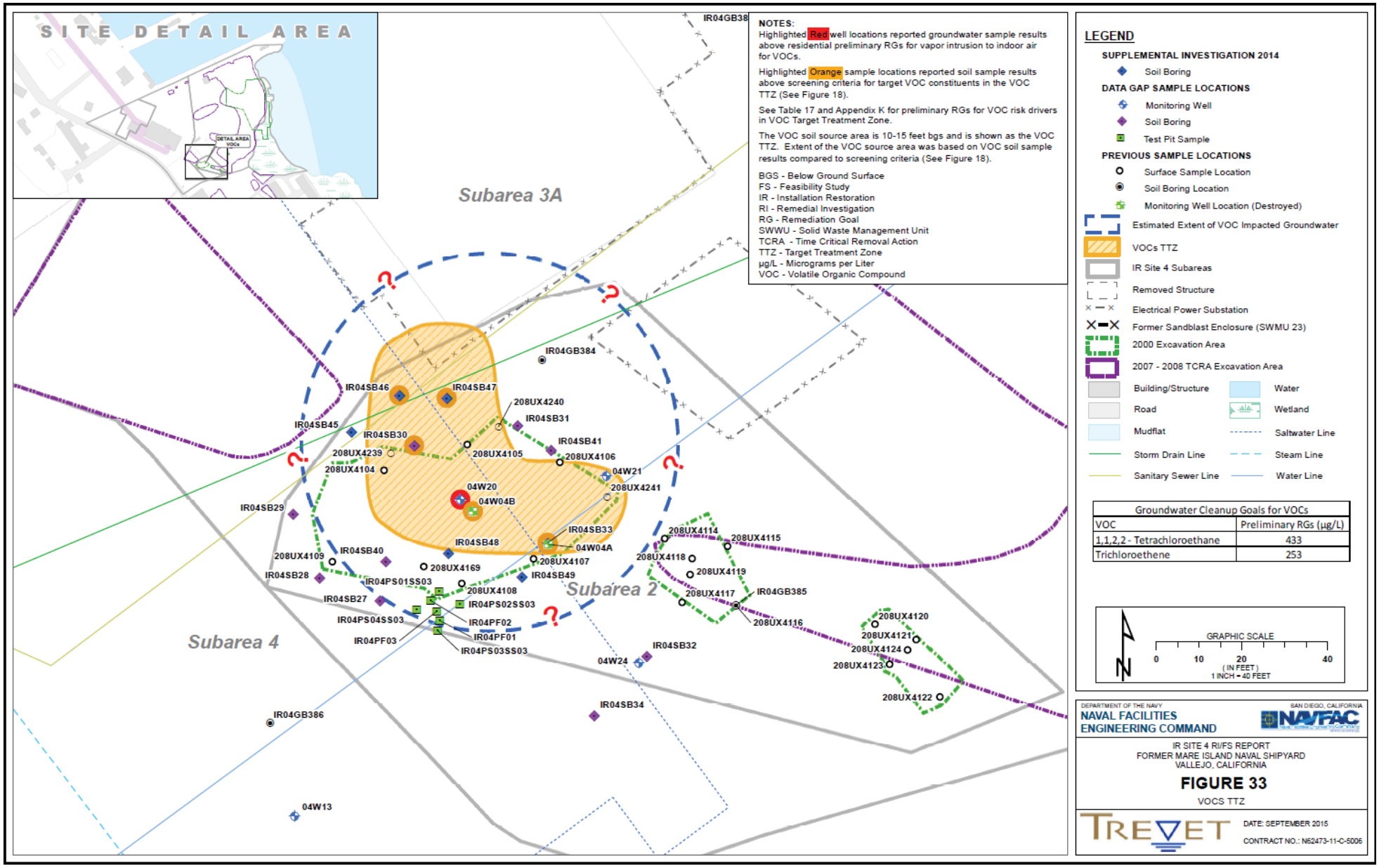
PCBs in Soil Near Building 782



Subarea 3B Results and Risk Assessment Summary

- Current and Planned Future Use is Wetlands
- Potential Habitat for Endangered Salt Marsh Harvest Mouse
- No Samples Collected During Data Gaps Investigation
- HHRA Evaluated the Recreational Future Use Scenario
  - No unacceptable risks were identified
- Ecological Risk Results
  - In Subarea 3B sediment multiple metals present risks to multiple receptors, including the salt marsh harvest mouse. Limited data exists for Total PCBs but may present risk.
- Feasibility Study Recommendations
  - Evaluate alternatives to address metals in sediment

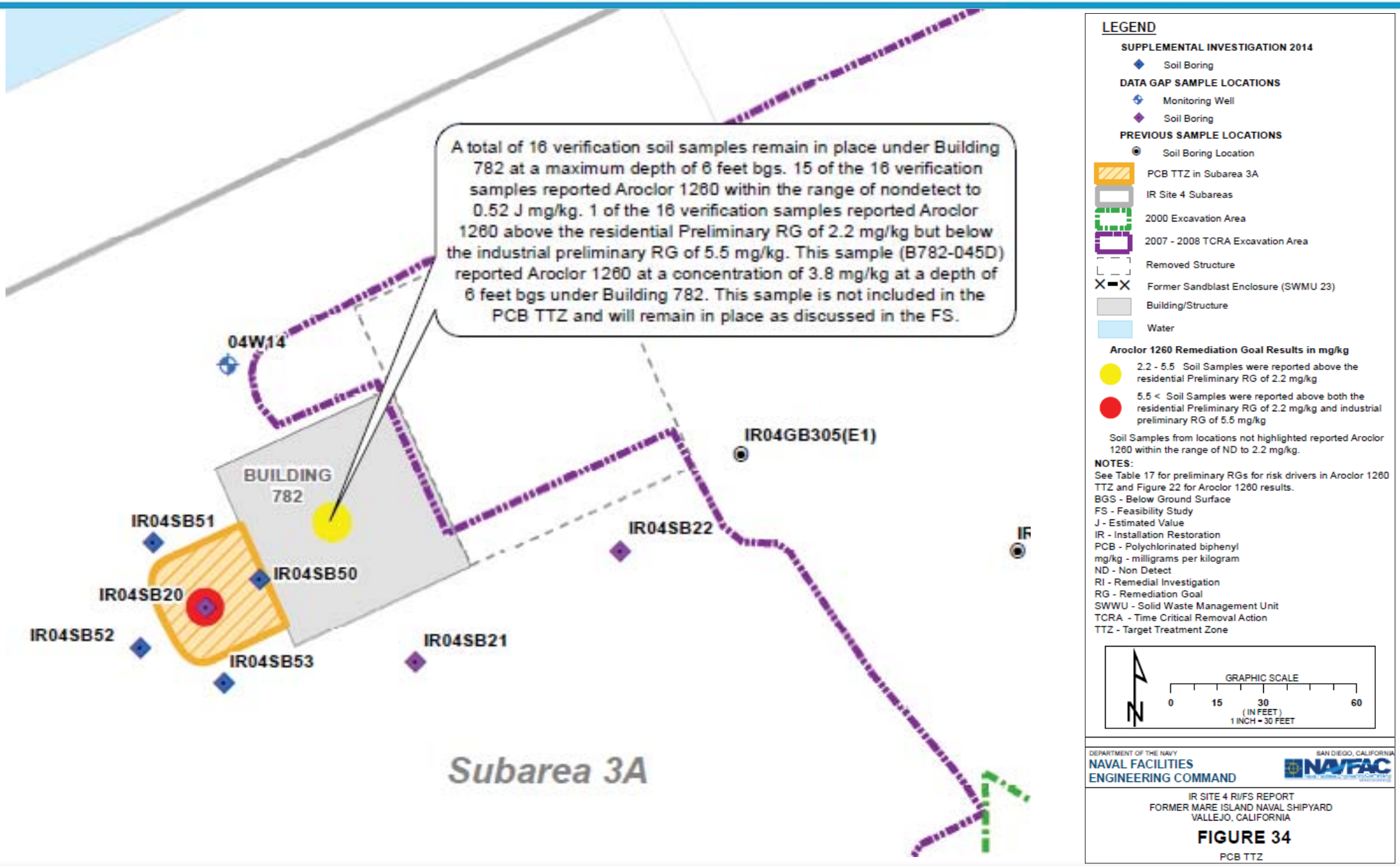
Feasibility Study – Subarea 2
Target Treatment Zone for VOCs



Feasibility Study – Subarea 2 Remedial Alternatives Evaluated

- 2-1: No Action Alternative
  - Evaluation required by CERCLA
  - Exposure pathways unaffected, not protective of human health and the environment
- 2-2: Institutional Controls (ICs)
  - Long-term ICs to prevent sensitive uses, including hypothetical residential land use
  - Low initial cost, allows industrial use as planned
- 2-3: Source Removal, In Situ Chemical Oxidation (ISCO) Treatment for Groundwater, and ICs (Unrestricted Use Option)
  - Source removal via excavation to remove VOC impacted soil from 10 to 15 feet bgs in the VOC TTZ. Following removal, ISCO reagent injection to groundwater via injection pipes installed following excavation. ICs until remedial goals for VOCs in groundwater are achieved
  - While ISCO should be effective in reducing VOCs in groundwater in the backfill material, distribution into the finer grained material surrounding the excavation may be poor
  - The VOC TTZ is adjacent to an electrical substation, and complete soil source zone removal may not be feasible
  - Goal of no ICs for subarea

Feasibility Study – Subarea 3A Target Treatment Zone for PCBs



Feasibility Study – Subarea 3A Remedial Alternatives Evaluated

- 3A-1: No Action Alternative
  - Evaluation required by CERCLA
  - Exposure pathways unaffected, not protective of human health and the environment
- 3A-2: Asphalt Cap and ICs
  - Physical barrier to exposure
  - Long-term ICs to maintain the cap
  - Ongoing inspection and maintenance requirements
- 3A-3: Excavation and Off-Site Disposal (Unrestricted Use Option)
  - Soil contaminated with PCBs would be excavated and transported to an appropriate landfill facility for disposal.
  - Goal of no ICs for subarea.

Feasibility Study – Subarea 3B Target Treatment Zone for Metals

LEGEND

DATA GAP SAMPLE LOCATIONS
- Soil Boring

PREVIOUS SAMPLE LOCATIONS
- Surface Sample Location
- Soil Boring Location
- Vibracore Location
- Monitoring Well Location (Destroyed)
- Metals TTZ in Subarea 3B
- Metals TTZ in Buffer Zone of Subarea 3A
- IR Site 4 Subareas
- Removed Structure
- Electrical Power Substation
- Former Sandblast Enclosure (SWMU 23)
- 2000 Excavation Area
- 2007 - 2008 TCRA Excavation Area
- Building/Structure
- Road
- Mudflat
- Water
- Wetland

NOTES:

Red highlighted sample locations reported surface soil sample results within Subarea 3A that are above the child resident preliminary RG for lead (See Figure 23 for lead results).

Orange highlighted sample locations within subarea 3B and the buffer zone of 3A reported surface soil sample results above ecological Preliminary RGs (See Figures 24-32 for sample results). Samples from IR04HA034 and IR04HA038 exceed ecological preliminary RGs.

Shown sample locations are for shallow soil only. Elevated lead in deeper soil (> 2.25 feet bgs) is not included on this figure but is shown on Figure 23.

See Table 17 for preliminary RGs for risk drivers in Metals TTZ.

BGS - Below Ground Surface
FS - Feasibility Study
IR - Installation Restoration
RI - Remedial Investigation
RG - Remediation Goal
SWWU - Solid Waste Management Unit
TCRA - Time Critical Removal Action
TTZ - Target Treatment Zone

GRAPHIC SCALE
0 30 60 120
(IN FEET)
1 INCH = 60 FEET

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SAN DIEGO, CALIFORNIA

IR SITE 4 RI/FS REPORT
FORMER MARE ISLAND NAVAL SHIPYARD
VALLEJO, CALIFORNIA

FIGURE 35
METALS TTZ

Feasibility Study – Subarea 3B Remedial Alternatives Evaluated

- 3B-1: No Action Alternative
  - Evaluation required by CERCLA
  - Exposure pathways unaffected, not protective of human health and the environment
- 3B-2: Removal, On-site Relocation, Off-site Disposal, and ICs
  - Soil/sediment in Subarea 3B and the adjacent area of 3A would be characterized and excavated.
  - Material not posing a potential risk to human health would be relocated to an appropriate uplands location at the site. Any sediment/soil posing a potential risk to human health would be transported to an off-site facility for disposal.
  - Long-term ICs would be implemented to prevent the migration of relocated material back to the wetlands.
  - Wetlands habitat (Subarea 3B) would be restored with imported fill material.
- 3B-3: Removal and Off-site Disposal
  - Soil/sediment in Subarea 3B and the adjacent area of 3A would be excavated and transported to an off-site facility for disposal.
  - Wetlands habitat (Subarea 3B) would be restored with imported fill material.
  - Goal of no ICs for Subarea.

Feasibility Study – Remedial Alternatives Rankings

	Overall Protection of Human Health and the Environment	Compliance with ARARs	Long-Term Effectiveness and Permanence	Reduction of Toxicity, Mobility, or Volume through Treatment	Short-Term Effectiveness	Implementability	Total Cost	Overall Rating by Alternative
Alternative 2-2 Institutional Controls	Yes	Yes	Good	Poor	Excellent	Excellent	Very Good	Very Good
Alternative 2-3 Source Removal, ISCO Treatment for Groundwater, and ICs	Yes	Yes	Very Good	Good	Marginal	Marginal	Good	Good
Alternative 3A-2 Asphalt Cap and ICs	Yes	Yes	Good	Poor	Very Good	Good	Good	Good
Alternative 3A-3 Excavation and Off-Site Disposal	Yes	Yes	Excellent	Poor	Good	Very Good	Good	Very Good
Alternative 3B-2 Removal, On-site Relocation, Off-site Disposal, and ICs	Yes	Yes	Good	Poor	Marginal	Marginal	Marginal	Marginal
Alternative 3B-3 Removal and Off-site Disposal	Yes	Yes	Excellent	Poor	Good	Marginal	Marginal	Good

Next Steps - CERCLA Process

Preliminary Assessment/Site Inspection
Identify need for Further Investigation

Remedial Investigation
Determine Nature and Extent and Assess Risks

Feasibility Study
Evaluate Potential Remedial Alternatives

Combined Remedial Investigation and Feasibility Study

Proposed Plan
Presents the Proposed Remedial Action for Public Comment

Record of Decision
Stipulates the Selected Remedial Action

Remedial Design/Remedial Action
Design and Implement the Remedy

Next Steps - Schedule

- Draft RI/FS Report – October 2015
- Final RI/FS Report – April 2016
- Proposed Plan – May 2016
- Record of Decision/Remedial Action Plan – Sept 2016
- Remedial Action – April 2018

Mare Island Naval Shipyard

Questions?

Acronyms and Abbreviations

- µg/L = micrograms per liter
- bgs = below ground surface
- BRAC = Base Realignment and Closure
- CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
- COC = Contaminants of Concern
- DTSC = California Department of Toxic Substances Control
- ft = feet
- FS = Feasibility Study
- HHRA = Human Health Risk Assessment
- HI = Hazard Index
- ICs = Institutional Controls
- IR = Installation Restoration
- IR04 = Installation Restoration Site 4
- ISCO = In-Situ Chemical Oxidation
- mg/kg = milligrams per kilogram
- ND = Non Detect
- PA = Preliminary Assessment
- PCBs = Polychlorinated biphenyls
- PMA = Production Manufacturing Area
- RG = Remedial Goal
- RI = Remedial Investigation
- SBM = Sandblast Material
- SI = Site Inspection
- SWMU = Solid Waste Management Unit
- TCE = Trichloroethene
- TCRA = Time-Critical Removal Action
- TPH = Total Petroleum Hydrocarbons
- TPH-dr = TPH-Diesel Range
- TSCA = Toxic Substances Control Act
- TTZ = Target Treatment Zone
- UXO = Unexploded Ordinance
- VOC = Volatile Organic Compound

Attachment 3. Presentation Handout – Remediation of the Building 688 Pits Site Investigation Area C2

Remediation of the Building 688 Pits Site

Investigation Area C2

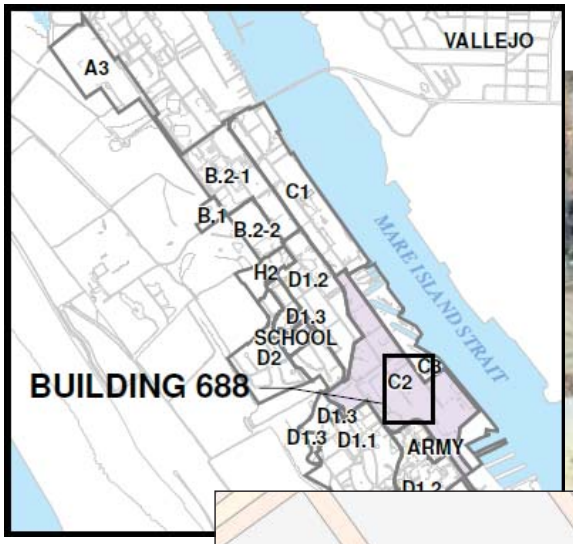
Presented to
Mare Island Restoration Advisory Board

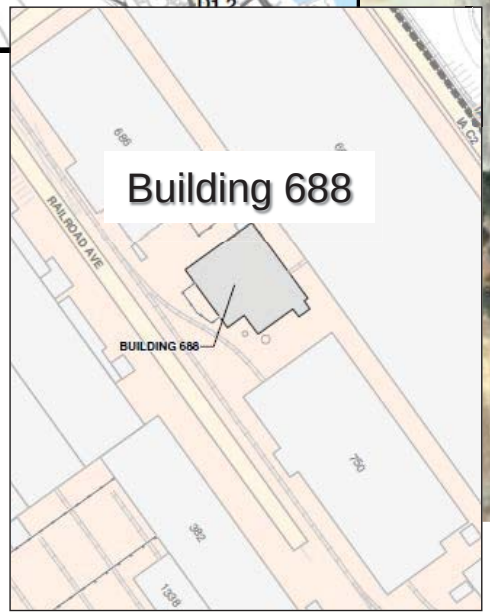
September 24, 2015

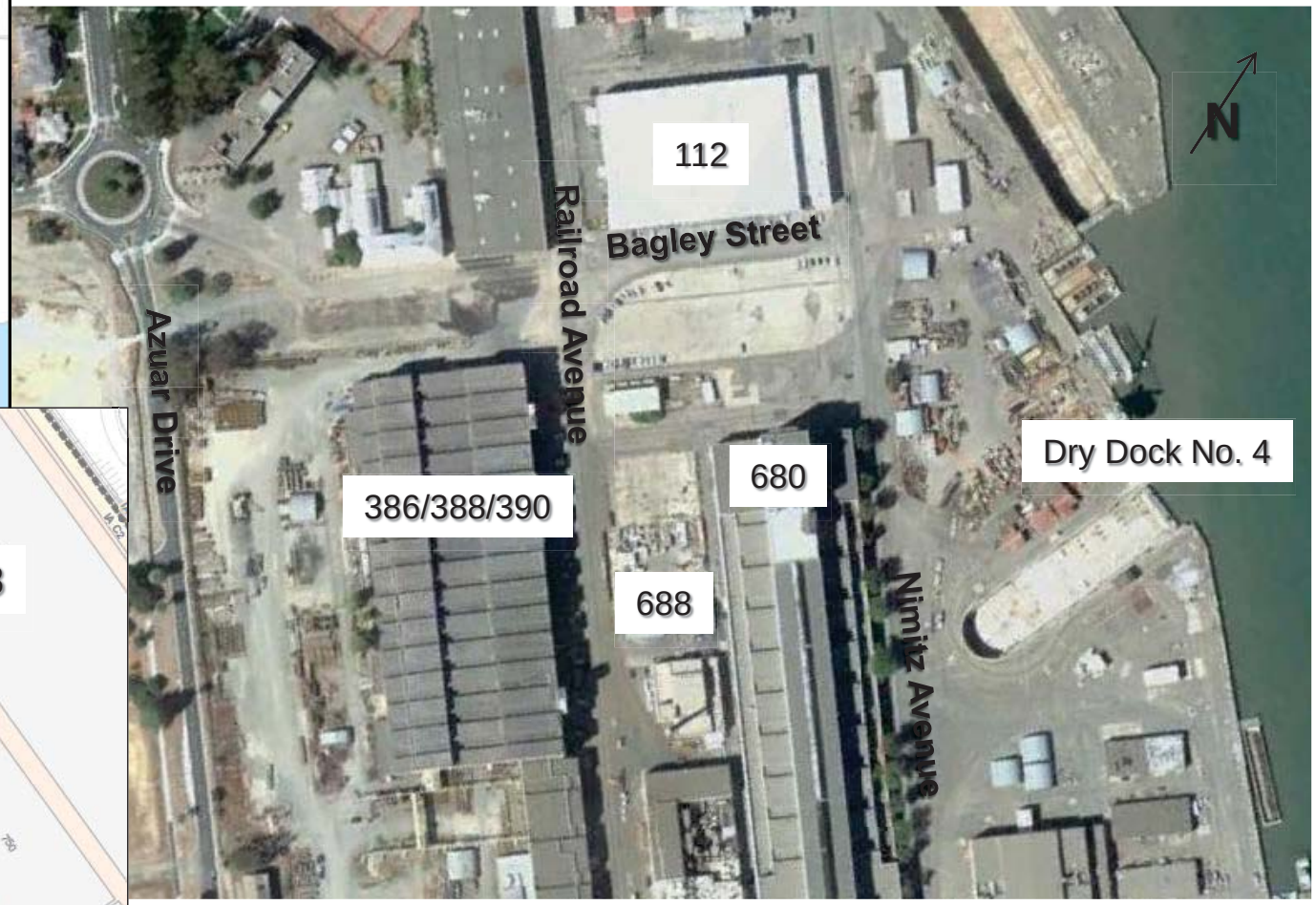
Topics

- Building 688 Pits Site Description
- Previous Sampling Results
- Approved Cleanup Plan
- Remediation Progress
- Remaining Work and Path Forward
- Questions

Building 688 Pits Site Description







Site Description (Continued)

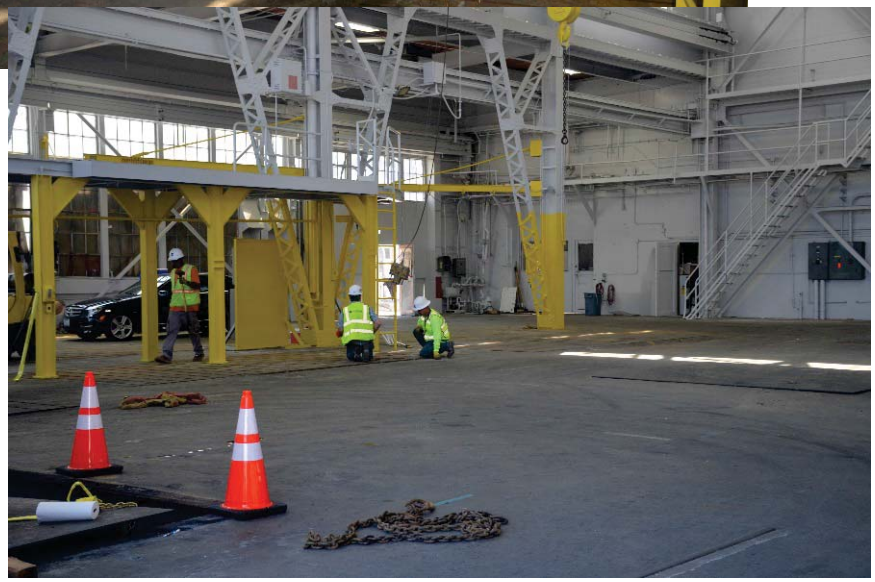
- **Building Located in Southern Portion of Eastern Early Transfer Parcel (EETP) in Investigation Area (IA) C2**
- **Building Constructed in 1941**
- **Covers an Area of Approximately 15,500 Square Feet**
- **Historic Use**
  - Steam Test / Pump Plant
- **Current Use**
  - Industrial Coatings Facility Warehouse / Shop
- **Future Use**
  - Industrial Facility
- **Ten Below-Grade Pits in Building**
  - Six (6) Shallow Pits (Less Than 1.5 Feet Below-Grade)
  - Four (4) Deep Pits (Ranging from 7 to 16 Feet Below Grade)
  - Eight (8) Pits Covered with Interlocking Steel Plates
  - Two (2) Pits Covered with Flat Steel Plates

Building 688 Pits Site Description (Continued)

Exterior View of Building 688

Building 688 Pits Site Description (Continued)

Interior Views of Building 688



Building 688 Pits Site Description (Continued)

Building 688 Pits Locations

Building 688 Pits Site Description (Continued)

Table 1 Summary of B688 Pits Characteristics Lennar Mare Island, Vallejo, California						
Pit #	Length (feet)	Width (feet)	Depth (feet)	Cover	Comments	Previously Sampled
1	7	10	7	Interlocking steel plates	2-inch diameter access port	Yes (Sediment and Water)
2	10	10	0.67	Interlocking steel plates	No access ports	Yes (Sediment)
3	10	15	1.5	Interlocking steel plates	2-inch diameter access port	Yes (Sediment)
4	10	20	1.5	Interlocking steel plates	2-inch diameter access port	Yes (Sediment and Water)
5	10	10	7	Interlocking steel plates	2-inch diameter access port	Yes (Sediment and Water)
6	10	20	1.5	Interlocking steel plates	6-inch diameter access port	Yes (Sediment)
7	10	20	1.5	Interlocking steel plates	6-inch diameter access port	Yes (Sediment)
8	10	20	1.5	Interlocking steel plates	2-inch diameter access port	Yes (Sediment and Water)
9	10 / 8.5	10 / 8.5	9	Steel plate	Access Way	Yes (Water)
10	10	15	16	Steel plate	No Access Ports	Yes (Water)

Previous Characterization Sampling and Results

- Samples Collected in 2008, 2011 and 2015
- Samples Analyzed for the Following:
  - Total Petroleum Hydrocarbons as Gasoline, Diesel and Motor-Oil – TPHg, TPHd, TPHmo
  - Volatile Organic Compounds (VOCs)
  - Semi-Volatile Organic Compounds (SVOCs)
  - Organochlorine Pesticides
  - Polychlorinated Biphenyls (PCBs)
  - Title 22 Metals (17 Metals)
- Sediment Samples
  - Collected from Pits 1, 2, 3, 4, 5, 6, 7 and 8
- Water Samples
  - Collected from Pits 1, 4, 5, 8, 9 and 10

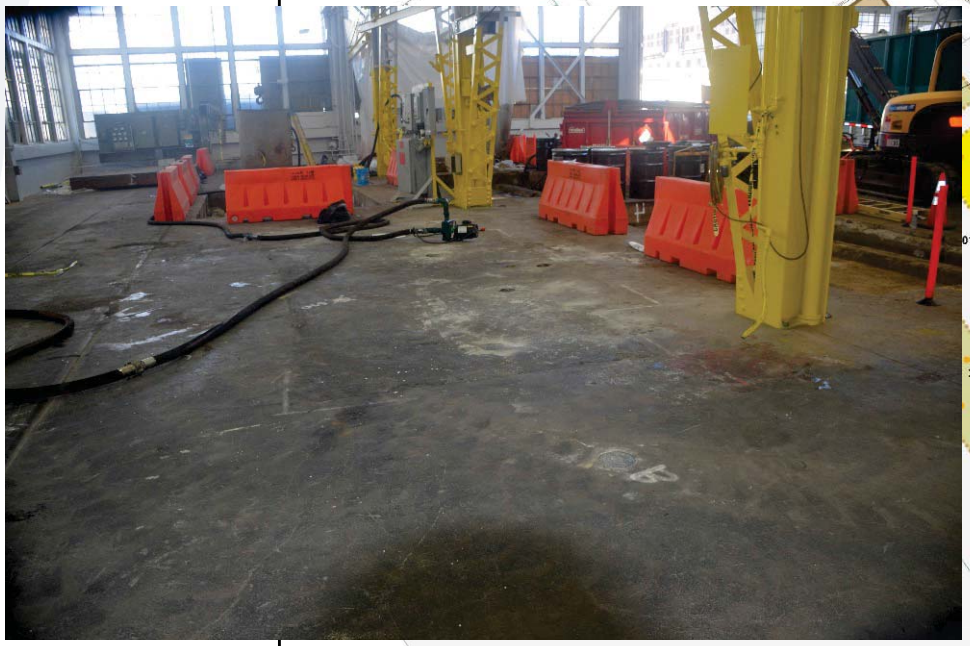
Previous Characterization Sampling and Results (Continued)

- Constituents-of-Concern
  - Sediment Samples (2008, 2011 and 2015)
    - ✓ Maximum TPHd / TPHmo (19,000 mg/kg / 78,000 mg/kg) – Pit 2
    - ✓ Maximum Organochlorine Pesticides – DDE (9.6 mg/kg) – Pit 8
    - ✓ Maximum PCBs
      - Aroclor-1254 (11 mg/kg) – Pit 4
      - Aroclor-1260 (14 mg/kg) – Pit 7
    - ✓ Maximum Metals
      - Chromium (5,500 mg/kg) – Pit 8
      - Copper (42,000 mg/kg) – Pit 7
      - Lead (8,300 mg/kg) – Pit 4
      - Zinc (11,000 mg/kg – Pits 7 and 8
  - Water Samples (2008, 2011 and 2015)
    - ✓ Maximum TPHd (82 mg/L) – Pit 10
    - ✓ Maximum TPHmo (190 mg/L) – Pit 1

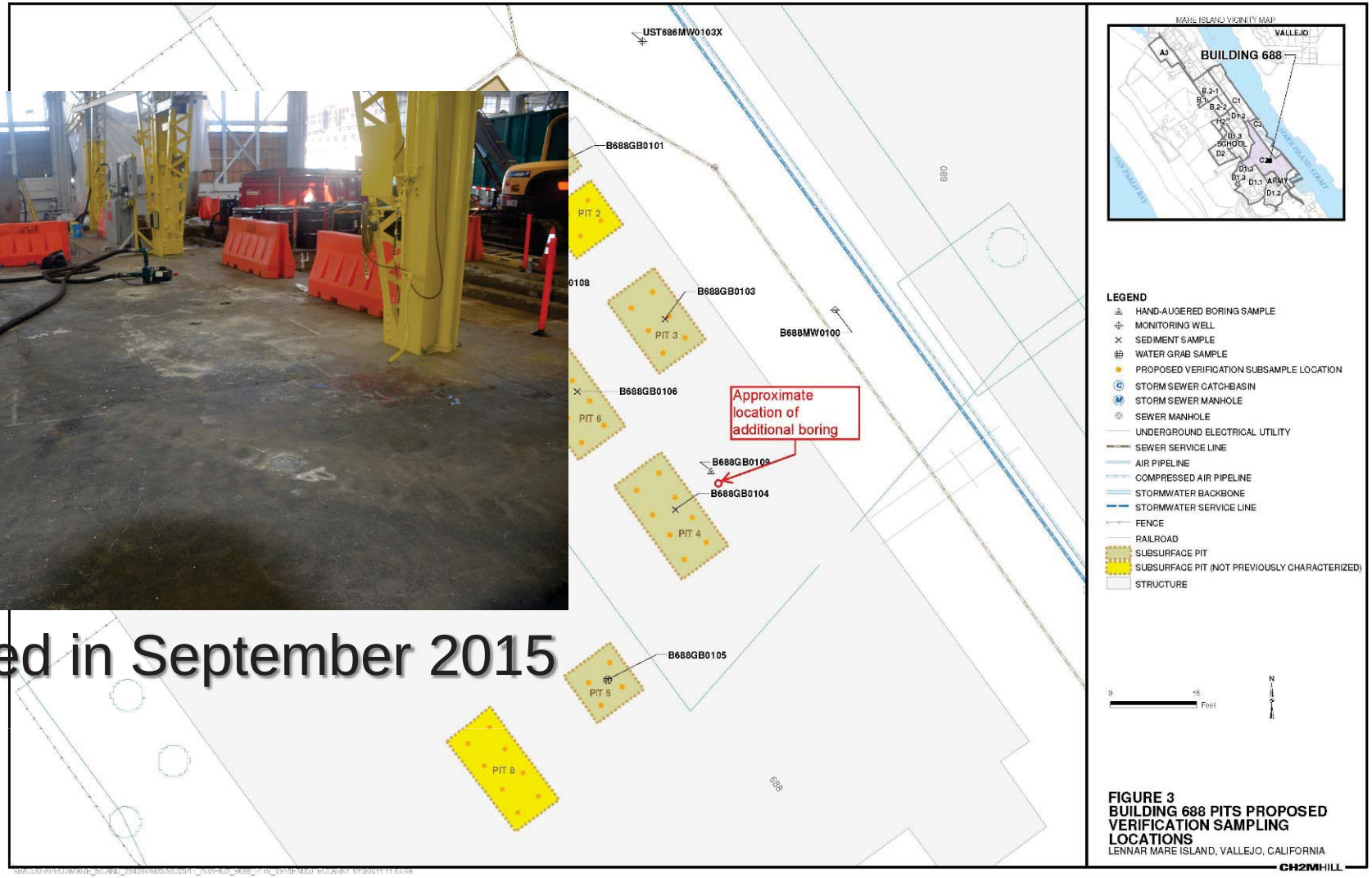
Regulatory Agency – Approved Remedy

- Advance Soil Boring in Proximity to Boring B688BG109
  - Vertical Extent of TPH Contamination
- Remove Steel Covers from Pits as Feasible
- Remove Sediment and Liquids in Pits
- Inspect Pit Interiors
  - Concrete Etching, Pitting or Cracking
- Power Wash and Scrape Pit Sidewalls and Bases
- Inspect Pit Interiors Again
- Collect Wipe Samples of Pit Covers
  - Analyze for PCBs
- Collect Composite and Discrete Concrete Chip Samples
  - Analyze for TPHd, TPHmo, PCBs, Organochlorine Pesticides and Metals
- Backfill Pits and Restore Covers as Appropriate
- Dispose of Sediment and Water as Appropriate

Remediation Progress – Soil Boring Near B688BG0109

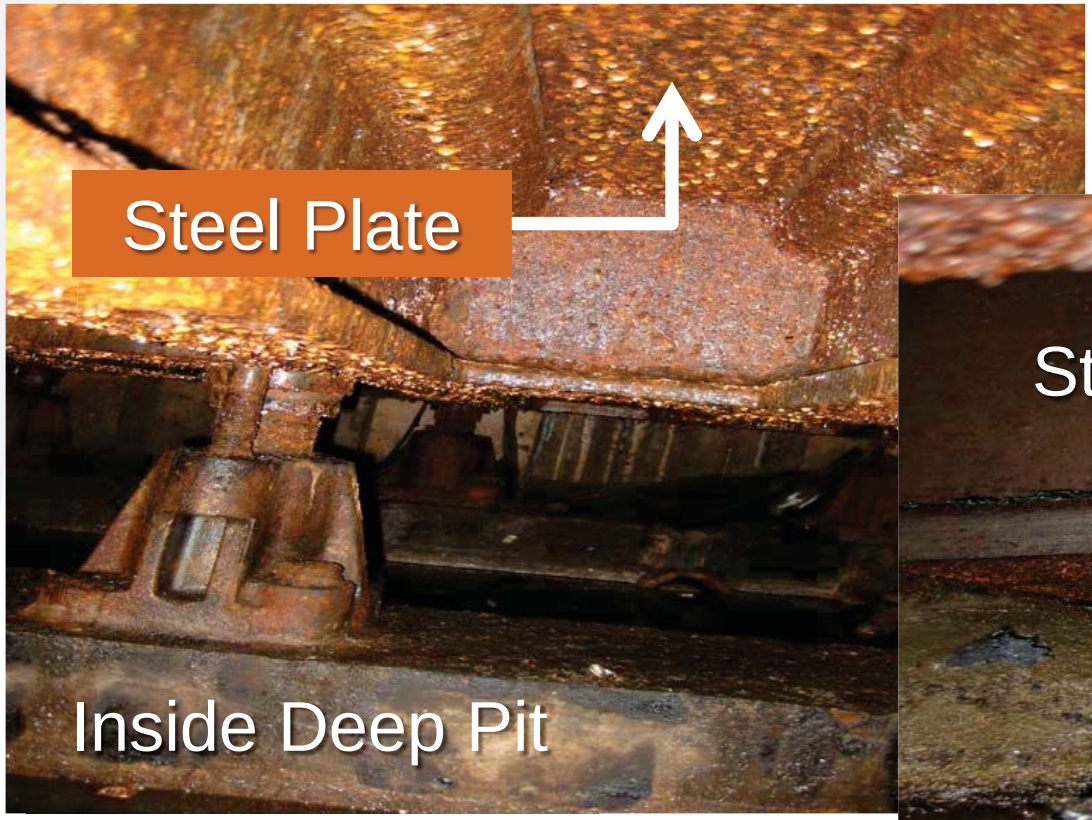


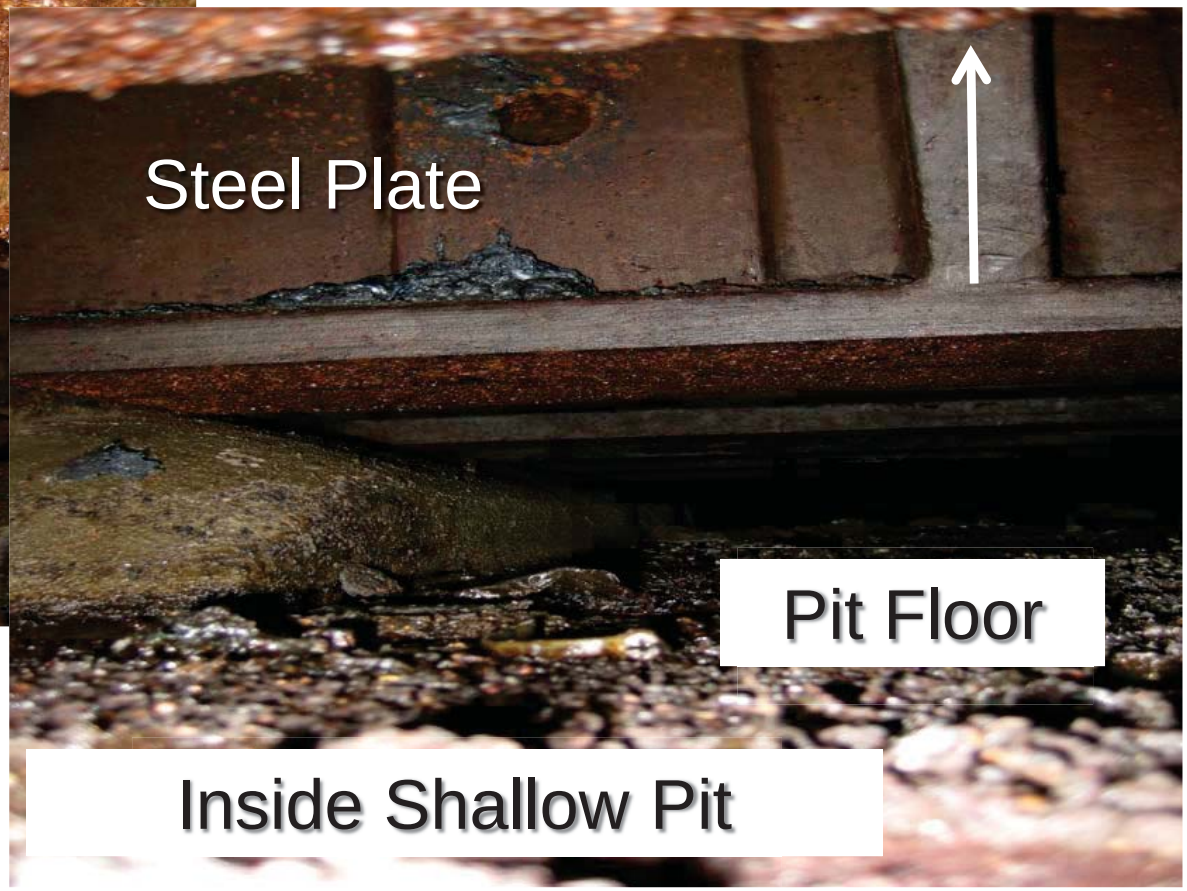
Advanced in September 2015



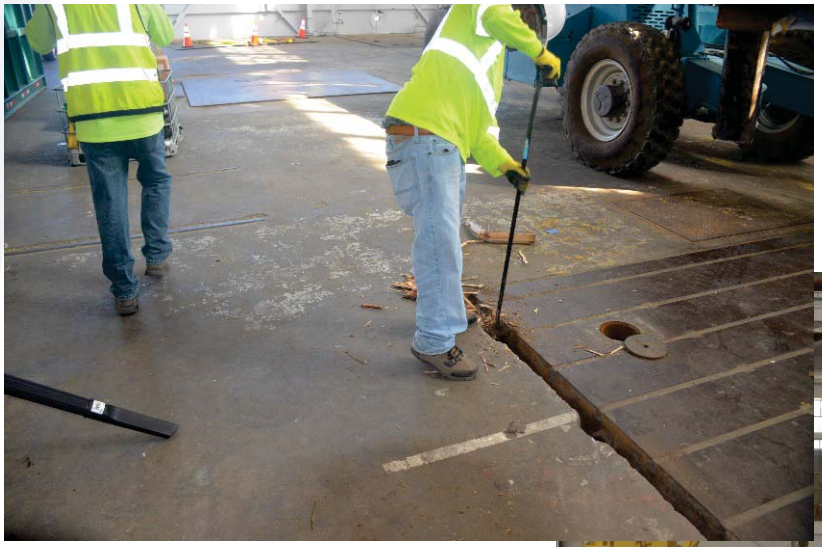
Remediation Progress – Steel Cover Removal

Pits Prior to Plate Removal

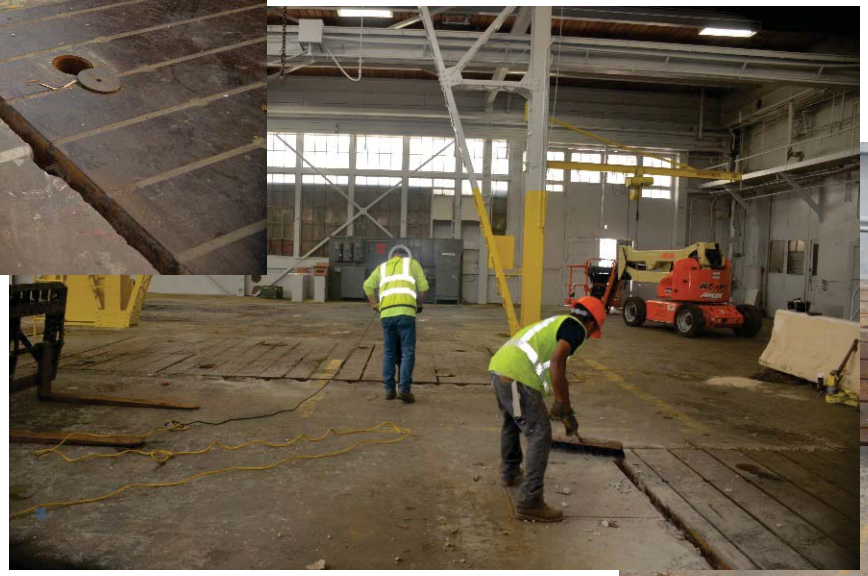




Remediation Progress – Steel Plate Removal



Hand Tools

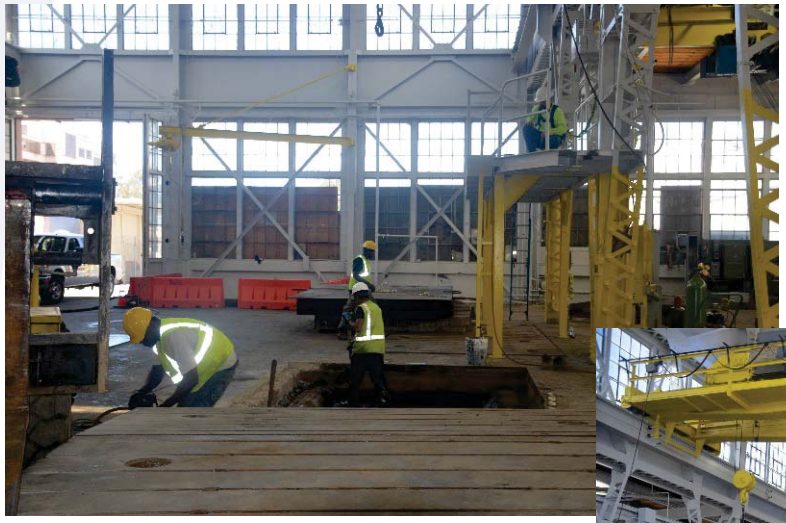


Jackhammer

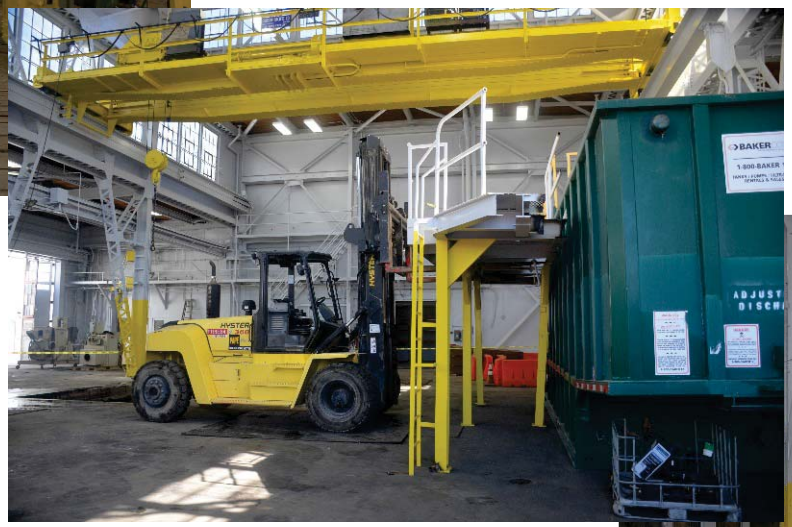
Acetylene Torch

Remediation Progress – Steel Plate Removal (Continued)

Superstructure Removal at Pit 6



Cutting



Removal

After Removal

Remediation Progress – Steel Plate Removal (Continued)

Plate Lifting

Pit 2
Plate Lifting

Attempting to Lift
Pit 1 Plate

Pit 5 Plate Lifting

Remediation Progress – Steel Plate Power Washing and Drying

Steel Plate Power Washing

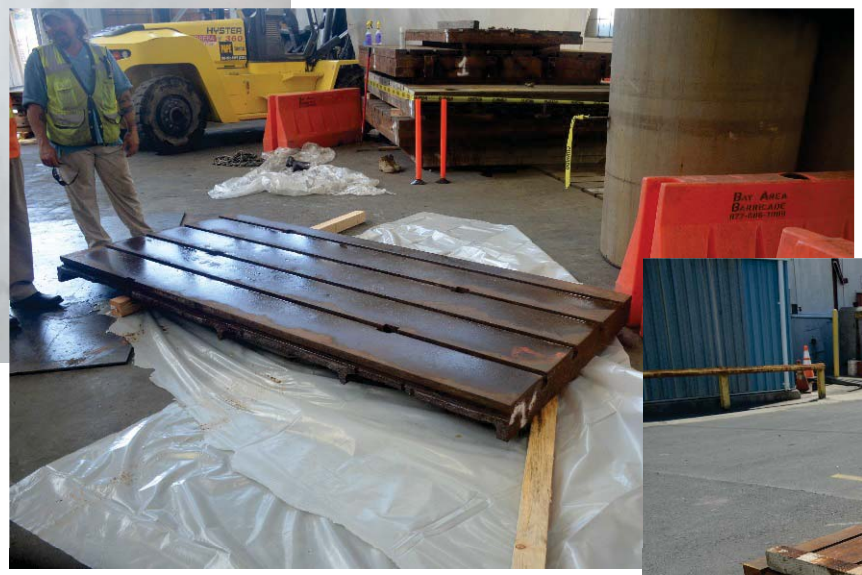
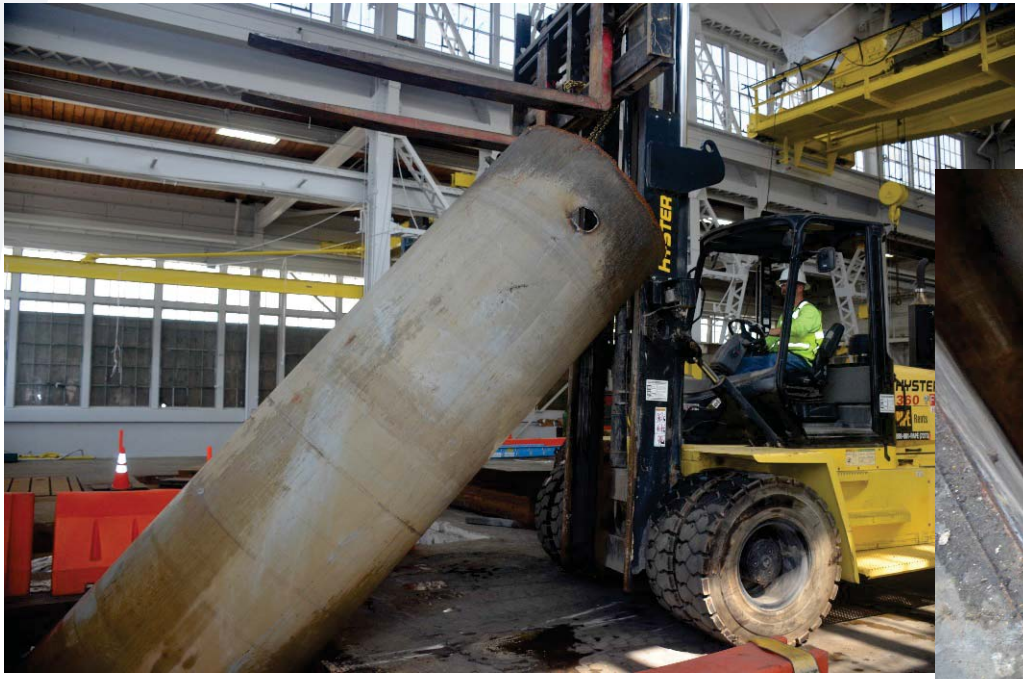


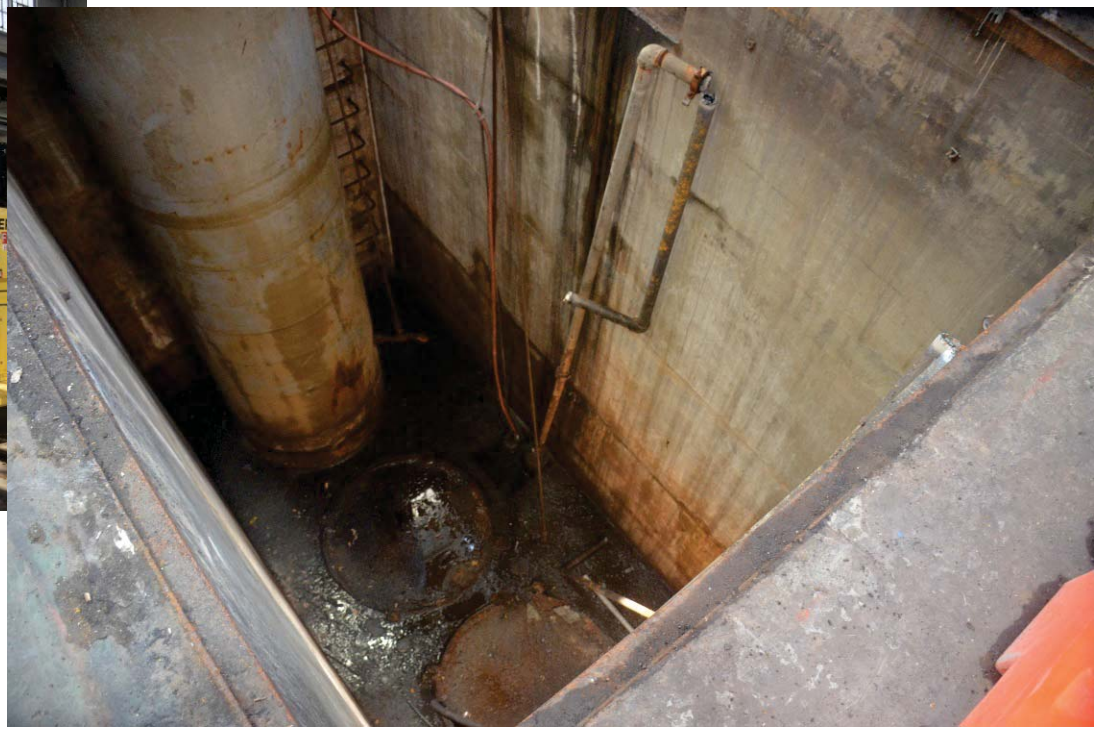
Plate Immediately After Power Washing

Plate Drying

Remediation Progress – Pit 10 Tank Removal



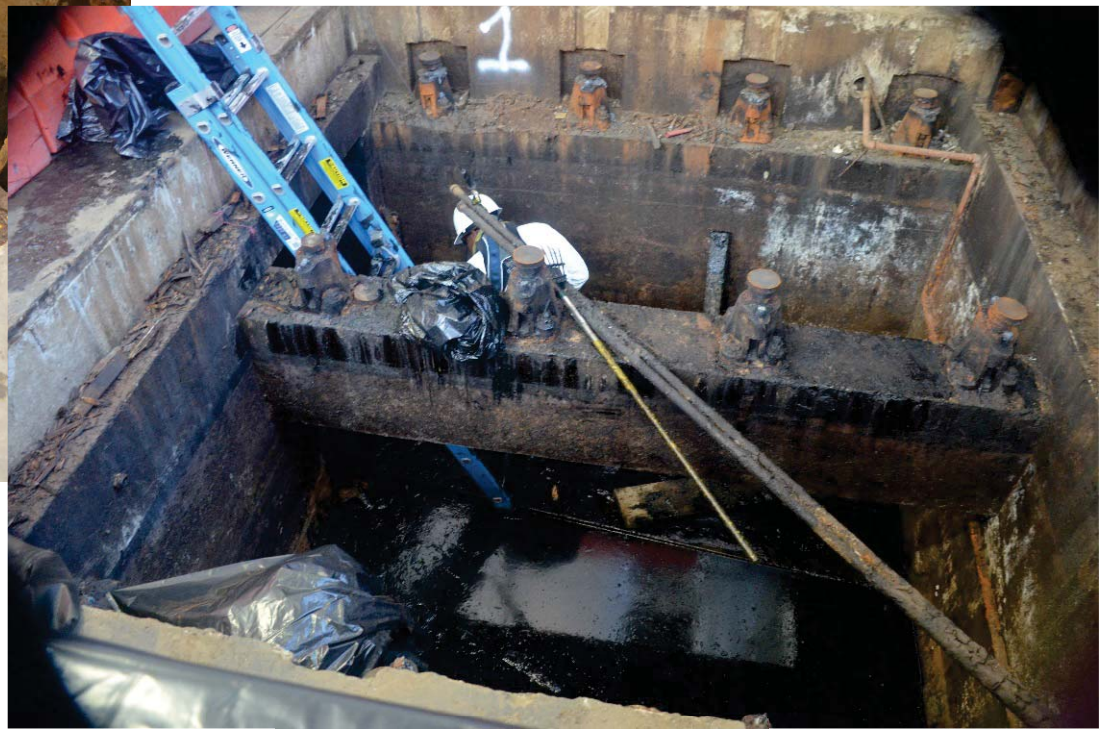
Lifting Tank from Pit 10



Inside Pit 10 After Removing 2 Tanks

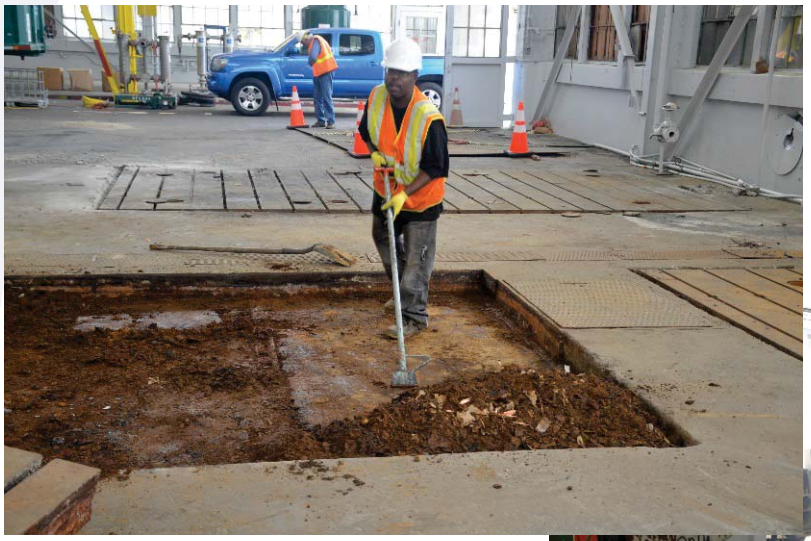
Remediation Progress – Sediment and Liquid in Pits

Pit 5 Sediment



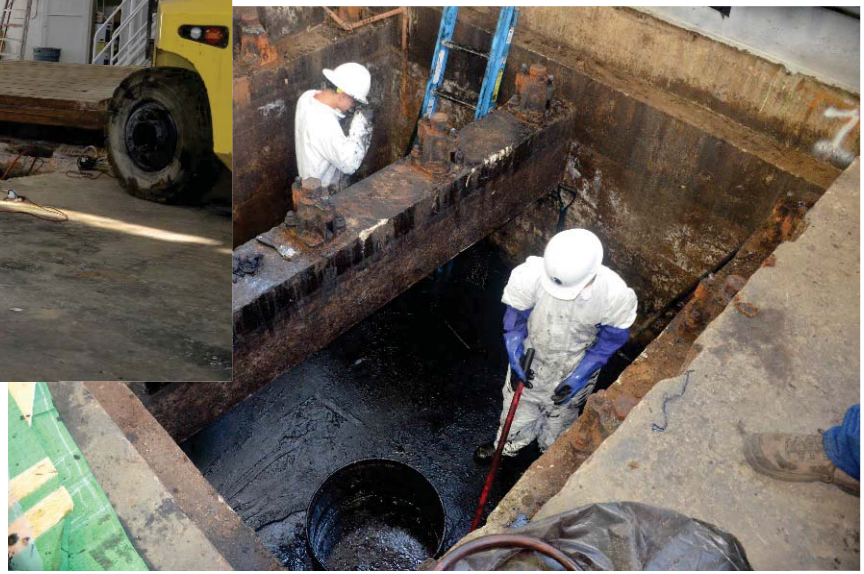
Pit 1 Sludge
(Sediment and Oily Liquid)

Remediation Progress – Removing Pit Sediment and Liquid



Pit 2 Sediment Removal

Pit 6 Sediment and Liquid Removal



Pit 1 Sludge Removal

Remediation Progress – Pits After Power Washing

Pit 2

Pit 5

Pit 1

Remediation Progress – Concrete Chip Verification Sampling

Pit 5 Concrete Chip Sample Locations

Pit 4 Concrete Chip Sample Locations

Remaining Work and Path Forward

- Transport and Offsite Disposal of Waste Materials
- Receive and Evaluate Confirmation Sample Analytical Results
- Based on Results, Discuss Path Forward with Regulatory Agencies
- Perform Additional Remedial Actions, if Necessary

Questions?

Acronyms and Abbreviations

- DDE –Dichlorodiphenyldichloroethylene
- EETP - Eastern Early Transfer Parcel
- IA - Investigation Area
- PCBs – Polychlorinated Biphenyls
- TPHd – Total Petroleum Hydrocarbons as Diesel
- TPHg – Total Petroleum Hydrocarbons as Gasoline
- TPHmo – Total Petroleum Hydrocarbons as Motor Oil
- SVOCs – Semi-Volatile Organic Compounds
- VOCs – Volatile Organic Compounds

Attachment 4. Weston Solutions Mare Island RAB Update

Mare Island RAB Update

September 2015

DOCUMENT STATUS

The following documents have been reviewed by the regulatory agencies and are being finalized based on responses to agency comments:

- *Investigation Area H-1 2014 Annual Remedy Status Report*
- *Record of Decision/Remedial Action Plan for Installation Restoration Site 05, Dredge Pond 7S, and the Western Magazine Area*

The following document is currently being prepared for Navy review:

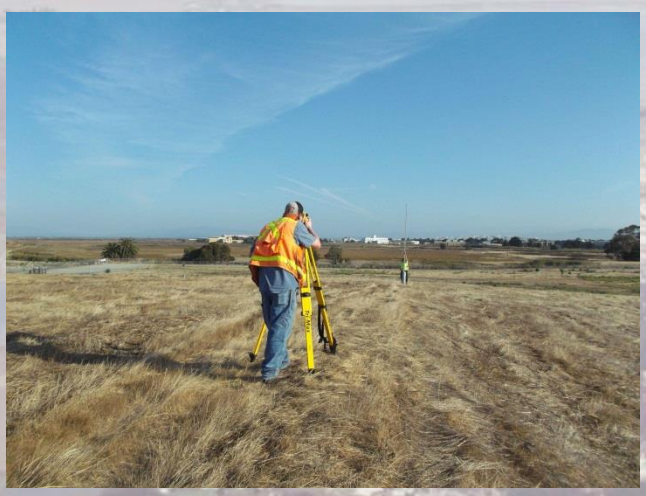
- *Remedial Design for Installation Restoration Site 05, Dredge Pond 7S, and the Western Magazine Area* (to address land use controls and implementation)

INVESTIGATION AREA H1

WESTON continues operations and maintenance activities of the IA-H1 Containment Area groundwater collection trench system. Quarterly effluent sampling was completed in September. Since 2005, over 31 million gallons of groundwater have been removed and discharged to the Vallejo Sanitation and Flood Control District.

WESTON completed the third quarter semi-annual sampling in September 2015 for 36 groundwater monitoring wells within IA-H1. Results will be evaluated and reported along with the first quarter groundwater sampling results in the 2015 Annual Remedy Status Report.

WESTON completed the annual elevation measurements of 53 settlement monuments within the 72-acre IA-H1 Containment Area on September 23-24. Results will be included in the 2015 Annual Remedy Status Report.



INSTALLATION RESTORATION SITE 05

A portion of IR05 at the south end of Mare Island was excavated during previous remediation activites, backfilled and graded to create a tidally-influenced wetland area to encourage establishment of pickleweed habitat for the endangered salt marsh harvest mouse. This month WESTON conducted the fifth annual quantitative vegetation survey within the 4.72-acre wetland restoration area on September 17th. The results will be included in the Year 5 IR Site 05 Annual Wetland Monitoring Report.