



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

HELD THURSDAY, MAY 26, 2016

The Restoration Advisory Board (RAB) for former Mare Island Naval Shipyard (MINS) held its regular meeting on Thursday, May 26, 2016, at the Mare Island Conference Center, 375 G Street, Vallejo, California. The meeting started at 7:10 p.m. and adjourned at 9:10 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)
- Paula Tygielski
- Michael Coffey

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

- Janet Lear (Navy Co-Chair)
- Dwight Gemar (Weston Solutions, Inc.)
- Valerie Harris (Navy Lead Remedial Project Manager)
- Brooks Pauly (Navy)
- Patrick Hsieh [Department of Toxic Substances Control (DTSC)]
- Neal Siler (Lennar Mare Island)
- Elizabeth Wells [California Regional Water Quality Control Board (Water Board)]
- Kathleen Diohep (City of Vallejo)
- Jonathan Largent (DTSC)

Community Guests in Attendance:

None present

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

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

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

CO-CHAIR LEAR: Okay. We'll go ahead and get started. Welcome to the Mare Island Restoration Advisory Board meeting. Let's go ahead and do introductions. I'm Janet Lear. I'm the Navy co-chair.

CO-CHAIR HAYES: And I'm Myrna Hayes. And I'm the community co-chair and I live in Vallejo.

MR. COFFEY: And I'm Mike Coffey. I'm an American Canyon RAB member, still an American Canyon RAB member.

MS. TYGIELSKI: My name is Paula Tygielski. I am a RAB member and I live in Benicia, community RAB member.

MS. DIOHEP: Kathleen Diohep with the City of Vallejo.

MR. SILER: Neal Siler, Lennar Mare Island.

MR. LARGENT: Jonathan Largent, DTSC.

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

MS. WELLS: Elizabeth Wells with the California Regional Water Quality Control Board.

MR. GEMAR: Dwight Gemar with Weston Solutions. And I've worked in Vallejo since 2002.

MS. PAULY: Brooks Pauly with the Navy.

MS. HARRIS: Valerie Harris with the Navy.

MS. SIEGEL: Emily Siegel with CES.

CO-CHAIR LEAR: Okay. We'll jump right into our first presentation. Brooks Pauly with the Navy is going to be talking about South Shore Area Munitions Time Critical Removal Action.

II. PRESENTATION (Brooks Pauly [Navy]) *Former Mare Island Naval Shipyard South Shore Area (SSA) Shoreline Munitions Time-Critical Removal Action (TCRA)*

MS. PAULY: Again thanks, everybody, for coming out. We have a nice turnout tonight. And good evening. So yes, as Janet mentioned, tonight I will be presenting an overview of the upcoming fieldwork. It's a removal action at the south shore area along the shoreline. And let me know if everybody can hear me, I don't know if

MR. NEVILLE: It's not on.

MS. PAULY: It's just a matter of putting on the button. Thanks, Wally.

MR. COFFEY: Details.

MS. PAULY: For your convenience you should have a handout. I hope everyone has one. There's a list of acronyms and abbreviations that I might be using in the presentation on the last pages of the handout. We've also printed out some 11 by 17's of some of the figures that have a lot of little details. So those should be included in your packet as well. So, as usual, I'll be doing a quick presentation overview. I'll talk about the site location. For those of you not familiar with the site, I'll do a little bit of history and site features discussion. Then I'll get into some of the conditions that triggered our planned removal action. I'll discuss what we plan to do and some details about how we plan to do it. Then I'll go over the planning documents. And lastly, our fieldwork schedule. And then we'll have some time for some questions. But at the same time, please stop me if you have questions as I'm going along, feel free, just raise your hand or get my attention.

The South Shore Area, as you might imagine, is located at the south end of Mare Island -- let me grab my clicker here. So Mare Island, of course, is part of the City of Vallejo, San Pablo Bay to the west, Carquinez Strait to the south, Mare Island Strait to the east.

The South Shore Area was historically created from fill in the 1930s and 40s. And it was used for munitions storage handling and disposal. There were also support activities performed at the site like adding anchors to underwater mines, maintenance of shipping containers, things like that. This is a picture of, looking south towards pier 35 here. And I think those are maybe the railroad tracks that we were talking about earlier.

CO-CHAIR HAYES: And that's actually a mine loading facility, and so that's the mine -- the building just beyond the revetment is a mine assembly building, if I'm not mistaken.

MR. COFFEY: How old is that?

CO-CHAIR HAYES: It was taken down. And then this building here still exists, mine storage.

MS. PAULY: Right here?

CO-CHAIR HAYES: That one.

MS. PAULY: So previous munitions removal of the site. Once the base was closed in 1996, and actually even before it was closed there was a realization that there were emergency removals needed.

In 1990 there were two emergency removals. There have been several geophysical surveys performed between 1997 and 2006. And using the information from those surveys, we've been able to go out and do subsurface removals of metallic items, most of which are just metallic debris. So in the last picture you saw there was all the rail ties and things like that, other debris. But one to two percent, depending on the location, whether it be the wetlands areas or the uplands areas, are actually munitions items that we found.

Back in 2012 to 2013 we did a non-time critical removal action based on the previous surveys.

And removed over 13,000 metallic anomalies from about 16,000 that existed from the surveys. These included digging holes about four foot in diameter and about four foot deep. Some of them even went as deep as ten to twelve feet on the uplands areas, and about two feet in the mudflats areas.

But I'll get to showing those areas in the future here.

I mentioned here the Category A and B areas. Category A areas were just areas that based on the historic site use were more likely to have munitions in those areas, whether they be around buildings or in loading areas.

And Category B was just everything else. So we removed 100 percent of the metallic anomalies in the Category A, and at least 20 percent in Category B, but actually for the South Shore Area it ended up being about 59 percent.

MS. DIOHEP: 59 percent of the hits you got?

MS. PAULY: Right. Yeah.

MS. DIOHEP: Okay.

MS. PAULY: Let me make sure I got all the details. Yeah, I think we got it. Don't want to leave anything out.

CO-CHAIR HAYES: The very last item, maybe you want to say what MEC is for the record.

MS. PAULY: Munitions and explosives of concern.

CO-CHAIR HAYES: Which is?

MS. PAULY: So these are -- in the case of Mare Island, munitions that have been disposed of to land, if you will, either at the surface or in the subsurface. In our case none of our munitions have ever been found to have been fired. And so that's significant in that they're less dangerous if they're called DMM munitions and explosives of concern, that's just discarded military munitions, so they haven't been fired.

MS. DIOHEP: That doesn't quite make sense.

MR. COFFEY: No, it doesn't to me either.

MS. PAULY: I understand what you're saying.

CO-CHAIR HAYES: Well, the reason I asked that is not because I don't know, but because this is a very good example of the fact that someone here isn't up to speed like some, like you are; but also because a lot of people tell me they read our minutes.

MS. PAULY: Okay.

CO-CHAIR HAYES: So I just would like for you to make sure that that little part of it is, you know, understandable to anybody, not you or me.

MR. COFFEY: Or us.

MS. DIOHEP: This picture is what you're talking about, the next slide?

MS. PAULY: Yeah, absolutely. That's a good point. Let's move on. Let's take that to the next slide.

So on this slide you can see some examples of things that we did find. So these are removed munitions. And now, while a lot of these in the upper part of the picture are small arms, some of these other things are old fuzes, so 20 to 50 millimeter projectiles, things like that. And so these are munitions that still have energetics within them. So they have the potential for explosion if they are triggered properly, but they haven't been triggered and they don't have, in a lot of the cases they don't even have the triggers with them so, because they haven't been --

CO-CHAIR HAYES: But that doesn't mean they don't pose a risk.

MS. PAULY: That's exactly right.

CO-CHAIR HAYES: Just because they haven't been triggered doesn't mean they don't have energetic material in them that, if you triggered it by some means or another, throwing it or whatever, you could harm yourself or somebody else.

MS. PAULY: And that brings us right back around to why they're called munitions and explosives of concern.

CO-CHAIR HAYES: I think that what I want to make sure that you clarify is that munitions and explosives of concern are just a different category of munitions as compared to ones that do have all the components and there's a risk level that the Department of Defense would view those differently in.

MS. PAULY: We would, yeah.

CO-CHAIR HAYES: But it still poses a significant risk to people digging these, metal detecting these as people are asking me to do, blah, blah, blah, and messing with them to use, you know --

MS. PAULY: Right.

CO-CHAIR HAYES: -- a technical term.

MS. PAULY: We do not want people to pick them up. Absolutely. And so that's a critical point. If you happen to be anywhere, not that you should be trespassing on the South Shore Area because that is Navy property and under Navy control right now, but it's a good idea in any situation where, if you find something and you're in a former munitions area, don't pick it up. If you didn't bring it, don't pick it up.

CO-CHAIR HAYES: One of the things that we have done at our visitors' center at the shoreline preserve is to provide written material and lots of displays. And I know that in 2012-'13 when you had this last cleanup going on, we handed out over 2,000 informational flyers that Weston and the Navy prepared to explain that to the public. We still have some available.

But that's what one of our key purposes is in having that visitors' center is ongoing education regarding munitions safety.

MS. PAULY: Absolutely. Thank you for that. Okay. So -- the foreshadowing I was talking about was that -- I thought you were going to bring up -- is that we did find a World War II non-fuzed MK6 depth charge in the rip rap area, but that was a one-time thing so far.

CO-CHAIR HAYES: Now I'll let you share that.

MS. PAULY: Okay.

CO-CHAIR HAYES: It's your baby.

MS. PAULY: It was pretty exciting.

CO-CHAIR HAYES: Uh-huh.

MS. PAULY: And we took that very seriously.

The reason we're doing the TCRA, the time critical removal action or this removal action as we're saying it, is that we have found munitions along Dike 12. So I want to go over some of the shoreline features here.

So Dike 12 is located over here, basically along the western edge here of the site. And there's a lot of rip rap that is basically holding the uplands so that the soil -- the fill -- that's been put there doesn't erode, which is what would naturally occur at this site if we didn't have shoreline stabilization or, in this case, rip rap.

And for those who don't know, rip rap is basically just a slang term for --

MR. COFFEY: Junk.

MS. PAULY: No -- well, there's definitely some junk. But it's mostly boulders that are very heavy, and they're placed in such a way that they form like a wall or basically a stabilization device that holds back soil so that it doesn't erode away.

In any case, we have -- as part of our investigation back in 2012-2013, we did find munitions items sticking out of the rip rap here. Some of the items even were used as part of the bulk, if you will, of the rip rap. And, you know, ingenious, great to use.

And a lot of these we can see are empty. They don't have the energetics in them. But that doesn't mean that they aren't an attractive nuisance and need to be removed. So we're talking

about doing removals, like I said, along the shoreline, mostly in this blue hatched area here. So some of that is the rip rap area, and some of that is mudflats. So you can see this line here, the southern edge, this black line in the mudflat area, represents the area that is walkable and accessible to people in normal circumstances, not with fancy gear or something like that, at the low, low tide.

So this is the area that we plan to work in. We plan to make sure that our removal actions are during the low, low tide so that we can go out there and remove a hundred percent of the metallic items that are out there.

And this is something we had done in the past during the 2012 and 2013 removal, but we want to go back and just double-check, again, out of an abundance of caution.

So another part of what we're doing out here is that we are protecting natural resources. So we have, as I think we have mentioned in the past, but for those who don't know, we have potentially rare plants out there, other protected species like Ridgeway Rails, and other Rails, and the Salt Marsh Harvest Mouse in the wetlands area here, you can kind of see them, you've got tidal wetlands in this about 2.2 acres in the green hatched areas there. And then birds under the Migratory Bird Treaty Act. So we talked about where the rip rap is located. We talked about where the wetlands are located. Very good.

And you can see a lot of this in greater detail, like I said, on the 11 by 17 sheets. Okay. This is a good example of the current conditions of the site. This is, again, along that western edge near IR-05. And the rip rap has completely failed. So you can see the remnants of it over here, and then this is the upland soil, the fill soil that is being hit by the waves and eroded away. And that's what we're concerned about because it's already occurring.

MS. DIOHEP: Was that fill from dredge pools?

MS. PAULY: It was -- I think there may have been some, but we were talking about this earlier today, a lot of it actually came from the upland rock area, so the hillside. Yeah, this hillside. So you can see right here.

CO-CHAIR HAYES: Yep.

MS. PAULY: So a lot of it was just broken up. And you can see it actually behind building, I think this is A-259 over here. It's really quite clear that they've chiseled away at it.

MR. COFFEY: Brooks, I remember once talking about the ferry, the speed of the ferry coming through is causing all kinds of erosion in that section of the --

MS. PAULY: More foreshadowing. You're exactly right. But it's actually primarily the wave- and the wind-caused wave action. That's the primary driver for the erosion.

CO-CHAIR HAYES: I would pretty much disagree. I used to work for the ferry service and that, that -- the type of propulsion that they have is documented throughout the world to do that kind of erosion. And you don't have any of those endangered species plants that I know of due to the type of -- yeah, winds not going to help, but wind is not doing --

MR. COFFEY: That drastic.

CO-CHAIR HAYES: -- that drastic of work.

MR. COFFEY: I remember we read something about this.

CO-CHAIR HAYES: Yeah, there's a lot of evidence that that -- if they were to slow bell it for another, you know, quarter mile it would be protective of that. But you have never required that, and they already have a slow bell through the river, so they'll never get to San Francisco is their thought. Yeah.

So -- but definitely that is a direct cause. You can see it. You can just stand there, the people who work there, because it's an underwater, it's a very powerful force. You can see it right here.

MR. COFFEY: You can see it right on the picture, there it is.

CO-CHAIR HAYES: There it is. So just for the record that, yeah, that's definitely a man-made acceleration --

MR. COFFEY: Man caused.

CO-CHAIR HAYES: -- acceleration of the erosion.

MS. PAULY: Moving along. This is just yet another shot showing the failure of the rip rap along the shoreline there. And then my favorite, the shell casings cleverly disguised or cleverly reused as either bollards or potentially additional mass for the rip rap.

Okay, that's speculation, but we did find one of these there.

MR. COFFEY: Is this only at low tide that you see these?

MS. PAULY: No, you can see them.

MR. COFFEY: I'm really surprised that the metal thieves on the island haven't discovered this, because they've stripped every single rain gutter in the entire island, and the light fixtures too that I've noticed lately.

MS. PAULY: That is a good point.

CO-CHAIR HAYES: And they aren't just used in this application, they're used for light, lighting and -- on the main shipyard for, you know, tie up things. It's not so unusual, I don't think. It's just sort of cool that this is -- happens to still be an artifact here.

And once again, I'll go on the record as requesting that the Navy -- and I know that it falls on deaf ears -- but I'm still going to go on the record as saying that these kinds of images, these kinds of artifacts are incredibly critical to our ability to inform the public about risk.

And as long as you keep on just trashing these, scrapping them, taking them to Alco, you're taking away the story, and you're making it very difficult for us to convince people that there is, and will be in perpetuity, risk.

So I don't know if DTSC has any powers to specify, or whether out of the goodness of your hearts you've had some sort of conversion, or if I can help you have a conversion experience, but I think it's so critical that people ten years from now, twenty years from now, a hundred years from now know that these, that there is the risk, there is the potential for exposure to munitions. It will not go away.

MR. COFFEY: Forever.

CO-CHAIR HAYES: It's forever. And you have the responsibility in perpetuity.

So why you aren't taking the responsibility right now, while you have this stuff in hand, to make sure that it's part of our permanent collection, I have no idea. But I'm just going to go on saying

it year after year. And this is 22 years so far. And hopefully somebody will get it that it's important that people actually see and be able to touch something that in other circumstances you don't want them to do.

That's what happened at Tierrasanta. That's what drives DTSC's regulation on this. Because they forgot, they ended their education program.

MS. PAULY: I was actually just going to say I'm surprised that these haven't been taken.

CO-CHAIR HAYES: Well, that's what Mike said.

MS. PAULY: But it might be because of the --

MR. COFFEY: This brass piece right here in the picture would fulfill Myrna's requirement. I mean, that baby has got a base that could stand up. It's a beautiful display piece. I mean I'd make a lamp out of that baby right there.

CO-CHAIR HAYES: I've got a lamp out of that, it's a 57 millimeter.

MR. COFFEY: I'd hate to see that go and get tossed. At the Flyway Festival if she had one of those babies on display there, that would be a huge proponent for this island.

I agree with her completely that this is something that should be, you know, I don't know if you guys are required to hand it over and have it scrapped, but this is something that would be --

CO-CHAIR HAYES: They're not.

MR. COFFEY: Yeah.

CO-CHAIR LEAR: So I just want to say that we do have a -- quite a collection of MDAS in one of the bunkers in the south shore. There is a process that we have to go through and we will be doing that. But, you know, unfortunately it's not something we have scoped at this current time. But we'll make sure that one of these pieces is put in that collection.

MR. COFFEY: Awesome.

MS. DIOHEP: What did you call that? There's an acronym that you used.

MR. COFFEY: MDAS.

MS. PAULY: Yes, material documented as safe, MDAS.

MS. DIOHEP: That's not on the list. Oh, there's two pages on here.

CO-CHAIR HAYES: We're on page 20.

MS. PAULY: We're on page 20.

MS. DIOHEP: I thought -- I didn't realize it.

MS. PAULY: That was a good call, but that is --

MS. DIOHEP: I'm trying to learn.

MS. PAULY: You see how we talk and we don't even realize we're speaking in acronyms?

MR. HSIEH: Do you want me to respond to our requirements?

CO-CHAIR HAYES: Yes.

MR. HSIEH: So as far as our requirements, our first priority is to make sure that these items are disposed of properly, especially if there's the possibility that they have energetics. They have to be disposed of in a way that is --

CO-CHAIR HAYES: Don't think that after 22 years in this spot I don't think that you should, I don't know that, and that you should have items with energetic material on display; forget that right there. But just for the record, I'm not -- No, I'm not going down that road.

MR. HSIEH: Okay. Well, other than that we don't have a lot of authority to direct people how they, you know, what they do with their items that do not pose a threat, so --

CO-CHAIR HAYES: Well, I'm asking you if you don't, then the person above you or the persons above you could consider that. Because that's part of education and that's part of what happened. The only thing really that happened at Tierrasanta that drives your regulation is a failure to educate.

And I'm telling you that after nine years of educating the public, informing the public about munitions on Mare Island, the existence of them, people really truly are not in a position to take my word for it. It's a lot more powerful for them to be convinced about why they shouldn't use a metal detector, why they shouldn't go on that property without escort, if I have something to show 'em, to prove that to them.

So if you would please take it to your people, that you could request, you could cooperate with the RP, the responsible party, and ask them to keep that material that's non-energetic and is considered safe, it would be helpful.

MR. HSIEH: Okay.

CO-CHAIR HAYES: Not just that you don't do it. I want you to change your policy. That's why we're here. That's what the Restoration Advisory Board is for. It's communication between you and me about something that you're doing in a regulatory capacity. I'm not getting mad at you, Patrick, personally, I'm just saying.

MR. HSIEH: Sure.

MS. TYGIELSKI: There's several things found that -- some of the items found have been historically significant, and I don't even know if any of them have been kept.

MR. COFFEY: I want to add also to it. I mean not only as Myrna was saying as part of an education to the public, but we're looking at the RAB Board here whittling down to just a few people. And one of the things that would foster some public support or interest is this type of material. I mean, this is the type of thing that if you show this on display in the City of Vallejo, or even around here on the island, you might get some more people interested. You know, we were talking about, just a year or two ago about getting some more people on the RAB, and community outreach. This is community outreach right here. This is the kind of stuff that if you had it on display somebody would go, "Ooh." I would.

I mean, probably the main thing that got me interested in the RAB was -- well, first off, my wife; but second was the buildings and things that are on this island that are, to me, significant, historical, interesting, cool. This is cool. This is the kind of thing that, if we wanted to get more people to pay attention to this Board and to get more people on it, there's the way. Anyway --

MS. PAULY: I wish I had more to say on that. But what I do have to talk about is our project scope. So we have seen the areas of concern. We have seen some of the items. And this is currently what we're planning to do about it.

As Janet mentioned, MDAS will be stored on site. And there is a process going forward that could be done to hand those over. It is an extensive process to my understanding. .

But what we're going to do at the site for this removal action. First of all, we've got to actually find the items. So in the rip rap we're using visual investigation techniques because there's a lot of interference to the instruments with the naturally occurring metals and other materials at the site, so they're not as useful in the rip rap. --The UXO techs are going to be really important.

But we're also going to be performing the subsurface geophysical surveys in the mudflats, like we did before, to do the removals there. And then we've also got this grid Z004 debris mass that is like a lot of metal fused together. So we can't just use visual inspection, we can't use hand tools to pry it apart, it's not safe. So we're actually going to be moving that to another portion of Mare Island to handle that. But I'll get into that.

The next thing, after we find the items and remove them, we need to then shore up that shoreline, stabilize it, so that, we don't get erosion of the uplands area that may or may not have more munitions in the subsurface.

We think we've done a great job. Weston did an excellent job out there in 2012-2013, and Battelle, removing items, but there is always that possibility as a munitions site, so the stabilization is critical.

And like I mentioned before, and I want to reiterate, resource protection is critical. We will be doing biological monitoring and avoidance, especially for the Salt Marsh Harvest Mouse, the Rails, nesting birds, and rare plants.

We've mentioned the project scope. I did want to go back to the figure to show where things are happening. So just to give you a visual idea of the scope areas.

Essentially doing the removals. Rip rap here. It's the pink area that goes along here. There's not actual rip rap in all of those areas, but the pink areas where we think we're going to have to actually make sure that stabilization goes back in. And then in the mudflats here and here we're going to be doing the removals. All right.

MS. DIOHEP: That mass that you're putting up --

MS. PAULY: Yeah.

MS. DIOHEP: -- how big is that?

MS. PAULY: Oh, I will get -- hold on, hold on. So much foreshadowing, this is great. I'm almost there.

MS. DIOHEP: Okay.

MS. PAULY: But don't let me forget.

MR. COFFEY: Brooks, can I ask you about the rip rap?

MS. PAULY: You bet.

MR. COFFEY: You're going to be replacing the rip rap, what are you going to use?

MS. PAULY: More rip rap.

MR. COFFEY: What? Boulders, concrete debris, what?

MS. PAULY: Yes, it's boulders.

MR. COFFEY: From?

MS. PAULY: That is a good question. I don't know the exact quarry location, but it will be sized.

MR. GEMAR: It will be quarried rock, most likely from Syar outside of the city limits.

MR. COFFEY: Okay. Cool.

MS. PAULY: So basically how we will do the removal, it's a little bit of what we just talked about; the investigation, visually inspecting the rip rap, and removing all munitions that we see. So even if it's documented, if we can document it as safe, we're still going to remove it. Because one, we don't want the attractive nuisance of people going out there and being excited about it and wanting to poke around so we want to get that out of there. And then just getting anything that's also munitions and explosives of concern.

So I think we've actually gone over most of this. Primarily we're going to be using hand tools, as I mentioned. But we may have to do mechanical excavation for larger groups of items in the mudflats if we find something like a big hit or something in the mudflats. I doubt it, but we could. Or if we find something like our Z004 grid mass.

So again, this thing is about -- Kathleen, it's about three foot by three foot. It looks kind of like an egg. You can see it here. We've seen similar things like this, much larger ones, but similar masses of fused metal in the dredge pond areas; but, like I said, we can't break it apart by hand, we can't look inside it to see if there's any munitions in there, so we are going to move that to what we call the open burn open detonation or OBOD range, and break it apart with mechanical equipment.

So there are implications to performing munitions and removal. And one of those implications is the generation of exclusion zones. So exclusion zones are for the safety of the public. And essentially that means that there are going to be areas that are impacted with restricted access during this project. So how do we determine these zones? We find an item, a typical item that's determined to be representative of items that are likely to be found in this area that will have a maximum generated fragmentation distance or MGF, D,

inside which only authorized personnel are allowed. So we call this the primary item. And the area that's generated by the distance around that primary item is what makes up the exclusion zone.

So, for instance, our primary item -- well, I can't even read it. But let's say it's the inner circle here, if you will, the orange. The good news is that if we stick with this primary item, even go to a secondary item if we find something that's a little bigger than our primary item, we have to go step-wise up and increase our exclusion zone. It's still not going to be affecting too much beyond the site area.

Obviously if we find something bigger it might impact the strait here, as you can see. That would be something like the MK-6 depth charge that we've found in the past. But the good news on that is that the exclusion zones are only in effect when we're working. So, for instance, if we

did, --worst case scenario, find another depth charge, but we still want to keep working, we would have to stop when the ferries come by.

MR. COFFEY: That was my question, because your exclusion zone, the ferry is right in it.

MS. PAULY: You're exactly right.

MR. COFFEY: So, I mean, basically you guys have to stop when -- you don't stop the ferry?

MS. PAULY: Nope.

MR. COFFEY: Or tell the ferry to move further out while you're doing this?

MS. PAULY: Nope, it doesn't take them too long to go by.

MR. COFFEY: How many times a day?

MS. PAULY: Several.

MR. COFFEY: Yeah.

MS. PAULY: Do you remember?

MR. GEMAR: We would just have to stop until they got out of the area. But again, this is only if the depth charge is found. If we find these smaller items, then that won't impact the ferry.

MS. PAULY: Yeah. So getting to the next scope item is repairing and installing the new shoreline stabilization once we've removed the munitions items.

But, you know, how big does it need to be?

Obviously if we make it too big we're going to obstruct the view of the strait. But if it's not big enough, it won't reduce the erosion and the potential for munitions daylighting. So, you know, we have to come to a balance on that. Obviously a site specific design is critical. And so we are using site specific design inputs to getting the right size. One of those inputs are the wave heights, however they're generated. And we have come up with historical wave heights at different locations along the site, so different transects along the shoreline.

MS. DIOHEP: So the intent? What's the lifetime that you're anticipating here to with rip rap?

MS. PAULY: Well, obviously with proper maintenance this could be indefinite, but I think the design life is something like -- I don't want to misspeak. Dwight, do you?

MR. GEMAR: It's a 30 year maintenance period.

MS. PAULY: It's a 30 year maintenance period but it actually has a longer life expectancy.

MR. GEMAR: Certainly the quarry stone, you know, will have a long life, much beyond the maintenance period.

MS. PAULY: Right.

MR. GEMAR: But the maintenance period really is impacted by sea level rise assumptions and those kind of things.

MS. PAULY: Right.

MR. GEMAR: And the fifty year storm events.

MS. PAULY: Right. And I think we were going with the average EPA sea level rise as well because that's one of the factors that factors into it.

So there's a lot of variables, but that's sort of the time horizon.

MS. DIOHEP: Is that the 55 inch? The low rise, that's like the number --

MS. PAULY: No. No.

MS. DIOHEP: Because the boulder's almost as tall as me.

MS. PAULY: No, that is not what -- no. I think it's -- again, I don't want to misspeak from the design report, but that is in the design report. I think it's somewhere around fifteen inches.

CO-CHAIR HAYES: But it does take into account sea level rising modeling?

MS. PAULY: Absolutely. Let's see. And I said basically this is a custom design. You know, the filter fabric, the thickness appropriate for each segment because, again, if the waves are bigger here you're going to have a little bit larger section here, but maybe they don't have to be as big where the significant wave height, the HS is lower. So that's all I wanted to say about that. And so this is kind of what our typical cross-section of the stabilization would look like. And again, this would be different for each segment along the shoreline based on the various input factors and the design factors. But this is sort of a typical cross-section.

So right here you've got the existing grade. You've got the future grade, the FG on this figure. The delta there. The mean high water line. And I know this is kind of conceptual so -- it's a little hard to see it -- so that's why we created this rendering of the scale of the stabilization along the shoreline. And so you can see this view is from the shore looking toward the water, and you can see we've got a person in there, so it's not obstructing the view significantly. But keeping in mind it will definitely be reducing the likelihood of potential residual munitions exposure, which is our goal.

MR. COFFEY: How deep is that?

MS. PAULY: What do you mean by deep?

MR. COFFEY: Well I mean it's like, these are much finer rocks, it's not giant boulders and stuff like that, and it looks like it's basically rubble. So is it what, two, three feet deep, or is it just one boulder sitting on top of the shore?

MS. PAULY: It's definitely going to be multiples, but it's going to vary in height along the segment. This is, again, an artist rendering.

MR. GEMAR: I should mention that's superimposed on a photograph of Larry standing out on the mudflats.

MS. DIOHEP: I was assuming somebody knew who the guy in the picture was.

MR. GEMAR: Yeah.

CO-CHAIR HAYES: Everybody in the room but you probably, or maybe Jonathan.

MS. PAULY: All right. So going forward we're completing our planning documents, the action memorandum. The draft was issued in January. Reviewing comments from the agencies -- thank you, guys. And we'll issue a final upon resolution of those comments obviously.

The work plan is also, a draft has been issued and we're expecting some comments very soon. And our fieldwork is anticipated for late summer, early fall. Does anyone have any other questions?

MS. DIOHEP: So this was -- the time critical means it felt like it had to jump the queue that you needed to do sooner?

MS. PAULY: Yeah, so the non-time critical removal action had to do with subsurface items. When we saw the items in the rip rap, we said, hey, this needs to be a little bit more.

MS. DIOHEP: So does that mean it jumped the queue and there's something else you guys were going to be doing that was just later?

MS. PAULY: No, not in this case.

CO-CHAIR HAYES: And I'll just note for the record that according to the City of Vallejo's specific plan for Mare Island at this time, this area is slated for transfer -- well, it will be actually State Lands reversion, and then granted to the City, and then become a part of the preserve.

MR. COFFEY: Really?

MS. DIOHEP: It's designated as being part of the Regional Shoreline Park.

CO-CHAIR HAYES: Correct. Same thing.

MS. PAULY: That's the phrase I've heard.

CO-CHAIR HAYES: Well, it doesn't matter, whatever it is.

MR. COFFEY: So if it's going to be part of the park it's going to be open to the public eventually?

CO-CHAIR HAYES: It's supposed to be.

MR. COFFEY: And we were just talking about the fact that munitions will never go away.

CO-CHAIR HAYES: Right. Yeah. I mean, it's technically, you know, unfortunately open to the public now because it has total water access without any patrol.

MR. COFFEY: Right.

CO-CHAIR HAYES: So again, that's why whatever you want to call our, the property that we day-to-day manage, the little names here and there, the visitors center and our guided walks -- which have been suspended but hopefully not for long -- are educational opportunities, public informational opportunities; not just for the people who go, but the people who go and post on Facebook, and for the press releases we've sent out for our website information. And so this is very, very important in terms of securing the property for public access, whether it's in the future or it's now, currently.

So we really appreciate the effort that you're making to secure this property and make it safe for public access, which we know is taking place day-to-day right now. So there will be a day when it will be appropriate public access; right now we might call it inappropriate public access.

MS. DIOHEP: And effectively the upshore side of that rip rap will be the right place for the public path?

MS. PAULY: That is a good question.

MS. DIOHEP: So as you guys -- well, what I'm saying is as you are going in there, you're doing construction, you're doing things, will that help improve that area above the edge to be a better path? I mean, it's not the deliberate intent, but the effect of it?

CO-CHAIR HAYES: It's got an awfully wide laydown area between the hillside and this area. So in some cases I think this will provide the -- potentially, I mean, along the edge. I don't know what -- we don't have a management plan laid out for that portion of the property, so we'd definitely be working, you know, with the Navy and the City on that. But, you know, there might be areas where you would use the rip rap as a walking path, and other areas where it might actually prevent the public from getting into sensitive shoreline areas.

MS. PAULY: Maybe the wetland areas.

CO-CHAIR HAYES: Right.

MS. PAULY: Right.

CO-CHAIR HAYES: So it would -- but you can see how wide that laydown area is generally.

MS. PAULY: Yeah.

CO-CHAIR HAYES: It's not going to impact the path except for to the pier. How have you decided how, where you're putting it? Where's that edge where you're drawing that line?

MS. PAULY: Right. Well, that's actually a good point. Let's actually move to that slide which is here. We're putting it behind the wetlands, so they would be protected. And also it's basically just, our whole goal is to shore up, to stabilize the uplands area so it doesn't erode. So it's all on the edge of the uplands.

CO-CHAIR HAYES: There is a section up there, and I don't know if it's not, if it's further east, but that -- it appears to be a -- it would appear to the public to be a beach area. And I don't know if this area, this project includes that or not. I guess --

MS. PAULY: Where are you?

CO-CHAIR HAYES: -- what I'm trying to see in my mind's eye is whether you are using this to not only stabilize, but also to prevent the public from getting out into the marshy areas or beach areas or tidal mudflats. Because I know, I've observed people in, like, kayaks, just slip up onto the property at times. So I'm --

MS. PAULY: I think the --

CO-CHAIR HAYES: -- can you talk about what your intent of this gabion or whatever this is is?

MS. PAULY: The sole intent is to shore up the uplands areas, but it does sound like it might have -- I can't, you know, commit to anything -- but it might have these secondary effects of preventing people.

MS. DIOHEP: So, Myrna, I'm not sure on the kayaks. Would you rather it be structured in a way that was hard for somebody to climb up out of a kayak or easy? Because remember, there's a park I dealt with in a prior life, and they were deliberately deciding what scale of rip rap, but they didn't want the kayaks just coming up in one place and they did want them in another.

CO-CHAIR HAYES: This is such a good, this is exactly what I'm asking you, whether you're -- whether you are setting this up as a deterrent, or whether that just isn't factoring into your project.

MR. COFFEY: It sounds to me like they're not even considering it.

CO-CHAIR LEAR: That's not the purpose of the rip rap.

MS. DIOHEP: Yeah, I understand. But if you're doing it -- if there's a slight difference that in the long run gets us in a good direction --

CO-CHAIR HAYES: Right.

MS. DIOHEP: -- that might be worth --

CO-CHAIR HAYES: Right. Right. Right.

MR. COFFEY: -- incorporating into the plan.

CO-CHAIR HAYES: And certainly with your experience that's just a really important piece of the puzzle.

MS. DIOHEP: But I'm not sure if we want to encourage or discourage.

MR. COFFEY: Isn't that something the City needs to determine?

CO-CHAIR HAYES: It depends on where -- I would think where you feel that, I mean because you have two goals, or three. One to remove the munition items. Two, to make a more uniform and stable and protective of potential exposure to munitions that might still be there.

MS. PAULY: Uh-huh.

CO-CHAIR HAYES: But then you have that third need, in some areas anyway, I don't know if it's the whole area, to protect the, for biological, for endangered species and other species.

So this could be a really good time to get a kind of, this early and often dialogue that the RAB is about, and just do at least a straight face test about where there's areas about -- because I mean generally kayakers, in my experience, are going to go wherever they feel like, wherever it's convenient.

And if you do have areas that you are specifically protecting, then you might want to build your rip rap a little different way. But, you know, and it may be, it may just be logical that some areas aren't going to be suitable. Like on the pier road leading out to the pier, that's just too narrow and too steep.

But if you think there's a potential for any kind of wetland restoration or that you, you know, whatever it is you're thinking in terms of this biological protection, it would be a good time to be thinking about the, you know, the future user.

MR. COFFEY: Particularly in the areas where the wetlands are. I mean, you'd think that they, the wall behind the wetlands you'd want to do everything you can to discourage a kayaker from coming in that direction, so you would -- you would facilitate the wall to be something that would be discouraging for that, especially if it's a habitat for the Salt Marsh Harvest Mouse --

CO-CHAIR HAYES: Right.

MR. COFFEY: -- you don't want to have --

CO-CHAIR HAYES: But then direct them -- if it looks like an easy place to land, maybe up on that beachy area further up --

MS. PAULY: Yeah. Yeah.

CO-CHAIR HAYES: -- those are just, and of course there's going to be facilities that are going to be designed and built that are going to be appropriate for small craft, you know, non-motorized to put in and launch.

So, but just kind of having our thinking caps on ahead of time for that one would be valuable.

MR. COFFEY: It's more cost effective too.

CO-CHAIR HAYES: You can't come in on a mudflat generally on a low tide with a kayak, that's what those rubber mats sometimes get laid out for that are floating.

But if you think there's areas that you just don't want kayaks coming in and out of at all, then you could design it so that it would be a disincentive. But on a high tide it might be that they'll hop up there and there wouldn't be any impact.

I'm just saying that if one of your goals is biological, you know, species protection, habitat protection, then I'd like to see a little bit more about where you're doing that and what other potential public uses might be in conflict with that.

CO-CHAIR LEAR: There is no habitat protection goal for this action. We are doing biological avoidance during the construction.

MS. PAULY: Construction, yeah.

CO-CHAIR LEAR: But there's no component goal of this action for habitat protection.

MR. COFFEY: Maybe there should be.

CO-CHAIR LEAR: Well, what your saying Brooks is we have to make the wall a certain height, we have to make the rip rap a certain height to deal with the wave design height.

MS. PAULY: Yes.

CO-CHAIR LEAR: And what I'm hearing from the group is that we should consider making the wall higher than necessary for the wave issue to discourage people from landing with their kayaks in certain areas. CO-CHAIR LEAR: Is that what I'm hearing?

MS. DIOHEP: Well, my other thought was that once you put this wall, people want to go as far out as they can, right, so that should be, would in a sense be the barrier that we want people walking out to your wall but not, you know, so what does this area end up like here? The idea would be that it would still be safe enough to be walked on. But then I don't --

MS. PAULY: I see what you're saying about the walking, yeah.

MS. DIOHEP: This would be defining. And I think you're probably putting this -- I don't have a good sense of what's out there on the topography, but to not put it here and then there's another ditch and then there's, you know, so something that -- so how do you get my hand gestures in the notes? And then the --

(LAUGHTER.)

CO-CHAIR HAYES: Well, I mean, we do have another presentation, but definitely --

MS. DIOHEP: Those weren't rude hand gestures. That's what you were thinking.

CO-CHAIR HAYES: Yeah.

MS. DIOHEP: This is why people read the minutes though.

CO-CHAIR HAYES: They love these minutes, they do. Obviously, I think that probably where we're headed is probably on a little site visit, just a site walk one day, a casual one. Because definitely all the restoration, well and restoration that's gone on IR-05, we're really not going to want to encourage people to get out into those wetlands on your left most westerly pink rip rap there.

MS. PAULY: Uh-huh, right.

CO-CHAIR HAYES: And definitely all of these little coves that are made by these piers become very important rafting, resting, feeding habitat for waterfowl during the migratory bird season. But they also happen to be tremendous places to view that, those waterfowl rafted up in high numbers there.

So I would think that as you go along those shores you're just going to either, you know, it looks like a locality of it is just simply going to go up to that kind of no man's land laydown area that used to have, that has roads and used to have the railroad track and, as Kathleen says, people will just want to go as far as they can.

MR. COFFEY: Yeah.

CO-CHAIR HAYES: So if you have some marshy areas inboard of that barrier, then that's going to just be a management issue down the road that just gets addressed.

But if it appears like it's a great place to slip in on a boat, and that includes copper thieves, we've seen them do it a lot, you know. They've made makeshift PVC little racks, and they drag them in on the low tide, and then go and thief buildings. So, you know, whoever -- I think we could go on for several more hours, but it will be a lot easier just to go do a site visit, and I recommend that.

MS. PAULY: Thank you for a very lively discussion.

CO-CHAIR LEAR: All right. So before we get started on our next presentation -- Neal, go ahead and go up to the podium. But Wally set up the room differently to try and make it easier for people to see. And he wanted to get some feedback at the end of the night if you thought this room setup was better. So please let Wally know.

MS. PAULY: It was fine from a presenter's standpoint.

CO-CHAIR HAYES: Did you just have the podium further over so --

MR. NEVILLE: We centered it more so the people on the outward side could see the presentation of it.

MR. COFFEY: Because it used to be sitting over there all you ever saw was the speaker.

CO-CHAIR LEAR: Are you able to see the presentation well, Kathleen?

MS. DIOHEP: Yes. We're talking about putting a white board somewhere in here, could also function as a screen in here, so that's what we're thinking.

MR. COFFEY: Just a melamine board on the wall.

MS. DIOHEP: It's a surplus one sitting around city hall that somebody said this would be a good place to put it.

III. PRESENTATION (Neal Siler [Lennar Mare Island]): – *Application for Closure Request Building 144 Oil/Water Separator Site, IR Site 03, Investigation Area C1 and C3*

CO-CHAIR LEAR: Okay. So Neal is going to give a presentation on Application for Closure Request Building 144 Oil/Water Separator Site, IR Site 03, Investigation Area C1 and C3.

MR. COFFEY: Rock on, Neal.

CO-CHAIR HAYES: Neal's presentations always -- he has a hard act to follow after ammunition.

MR. SILER: That's what I've been saying for years.

CO-CHAIR LEAR: But he has these titles that are very impressive.

MR. SILER: I just do that for you, Janet.

CO-CHAIR LEAR: I know, I figured that out.

MR. SILER: So you may wonder what two sites that are separated by about three quarters miles have in common. And one of these sites we've done a lot of work at, and one of them we're proposing to use the same type of technique to close out the other site, but they do have a lot in common.

And some of the items that they have in common are the fact that they're located right on the strait, very, very, right up against the strait.

They have the same contaminant of concern, which is diesel, and it appears to be weathered diesel. The source area appears to have been removed. And what we're looking at now is just what's in the groundwater. And what we've been seeing in the groundwater is above our Tier 2 screening level which is our cleanup goal at this site.

So one of the sites we've done a lot of work at, and that's the Building 144 oil/water separator site. So I'm going to run through that site, tell you what we've done, where we're at with that, and talk about how we're going to use the same technique at the Installation Restoration Program 03 Site.

So jumping into the Building 144 site. The main structure that we're interested in is an oil/water separator that was in use prior to the construction of Building 144. It was associated with the adjacent paint shop that was located in Building 334.

So this is Building 144 right here. You can see where the oil/water separator is located. Building 334 is located just to the southwest of that.

So that oil/water separator -- we're not really sure when it was installed -- it was decommissioned in 1983. And the reason it was decommissioned was because that was the year that they constructed Building 144 which was about a 5,900 square foot facility that was known as a work facility, whatever a work facility is, and what that entailed.

This area was part of the Investigation Area C3 Remedial Action Plan. It's in a portion of that called Installation Restoration Program Site 09. The proposed remedy for that area was excavation and off-site disposal of contaminated soil.

At this site it appeared that the contamination was lead. That excavation took place in 2009, between June and September of 2009. Excavated that area down to about eight feet below grade. They weren't sure if the oil/water separator was there.

Of course, this being Mare Island, of course we found it, you know. We actually were able to take part of it out, but there was a part of it that was under the building that we couldn't take out without concerns over the structural integrity of the building. So we had to leave a portion of it in place. But when we did take it out, there was no visual evidence of hydrocarbon contamination at the site. We did get, when we opened up the oil/water separator, some petroleum hydrocarbon odor, but we went ahead and looked at that.

So the next slide just kind of talks about what I have been just talking about. So that's if you want to follow along with that or want to look at that later on, there it is right there.

But this slide right here are photographs of the 2009 excavation. This is the oil/water separator. It's right up against this support, structural support right here. It was taken out, the majority of it was taken out.

This portion right here we couldn't get to so we had to leave that in place. And this next slide shows you a schematic of what it looked like. The oil/water separator is about ten feet wide by about 20 feet long. There was some green sand -- of course, this is Mare Island, you can find green sand anywhere.

MR. COFFEY: Gotta have it.

MR. SILER: We excavated that all out, took out the majority of the oil/water separator.

And because we thought this was lead, that was the principal contaminant of concern, and we did have some petroleum hydrocarbon data, and we had it right about eight feet at the base of the excavation, it was below our cleanup goal for diesel in this area. But we went ahead and took all our samples around the exterior and the base for lead, they all came back down below the cleanup goal.

CO-CHAIR HAYES: What --

MR. SILER: Go ahead.

CO-CHAIR HAYES: Why couldn't you take any more of this away?

MR. COFFEY: Structure.

MR. SILER: Due to the structural support of the building. You would have had to undermine that. So there's a whole mezzanine that's above that that's part of the structural support of the

building, that would have had to have gotten taken down, and that would have actually undermined the support for the exterior of the building itself. That was the issue.

So we went back and took a look at the groundwater. There was a well that was right downgradient -- and we can go back to the former slide just to take a look at that. I think it's on here.

It's not on there, but I'll show you where it is. It's about right outside the building about right here.

So we went and had done a number of sampling events at that building and looked at petroleum hydrocarbons; gasoline, diesel, motor oil. We looked at some of the aromatic fraction; benzene, toluene, ethylbenzene, and total xylenes and some other things that are associated with petroleum fuels, polycyclic aromatic hydrocarbons.

The only thing that we detected of concern, again, was this diesel that was above our Tier 2 screening level which is 640 micrograms per liter.

And because what we were principally concerned about was lead, this well was abandoned back in 2011. But then in 2012, again this being Mare Island and nothing is easy, the Department of Toxic Substances Control requested additional groundwater sampling for diesel, and then handed this project off to the Water Board, who were very grateful that they got it back.

MS. WELLS: Thank you very much.

(LAUGHTER.)

MR. SILER: So we actually installed another well inside the building as close to the excavation as we could. This was this temporary well, the 144MW0200. Again, the only thing that we detected was the diesel above our cleanup level.

And then later on, in 2014, while this well was still in place, we put in another groundwater well that took the place of the well that we had outside the building.

CO-CHAIR HAYES: What was the level of that diesel?

MR. SILER: Well, you'll see it on the next slide. You can't see it really well on the screen. There's an 11 by 17 figure that is at the end of this one, there's another one too so you can take a look at it.

So when we tried to put this well in, we tried to get it as close to the strait as possible. We had to put in seven borings. And each one of these borings, as you tried to put it in, which was the problem with doing things on Mare Island, is the fact that we got refusal every time we tried to put it down. We hit wood or we hit concrete or metal or anything else that they used to build up that portion of the island.

MR. COFFEY: That's why the holes are in such weird positions.

MR. SILER: Yeah, because we're just trying to figure out where we can get a boring in, you know, to be able to install a well.

So we came up with this boring right here, which is very close to where the former well was right here, so we installed that well.

So now, as Myrna has asked -- and you can't see it really well up here but you can see it pretty well on the 11 by 17 figure -- this temporary well inside the building, MW0200, when we first started out we had about 1,100, 1,200, and then it started to go down as we started looking at it in 2014, from 2012 to 2014.

Now, this well out here was a little bit higher, and I think it was like 4,100 was the highest we got there, 4,100 micrograms per liter. And -- but what's kind of interesting is when you do silica gel cleanup, which was the way we used to look at these things being anthropogenic or not, it looked like it was non-detect or below our cleanup goal.

Unfortunately, the Water Board does not accept the silica gel cleanup anymore.

And so what they're worried about is the fact that there's some anthropogenic compounds in that fraction that's still toxic, so they're very reticent to close it when you use that silica cleanup data.

So we had to come up with another technique to figure out how we're going to close this because it looks like we've removed the source, you know, we have confirmation samples looking around there from before we did the excavation samples telling us there was nothing there, so how are we going to do this?

So what we tried to do was use existing information, and we collected some additional information. We knew what the soil conditions were, it was silts and clays, very tight.

We looked at the chromatographic pattern of the principal contaminant of concern, which was diesel, it appeared to be weathered diesel, the lighter fraction appeared to have been stripped off which is where you see things that are called the bad actors, benzene, methyl tert-butyl ether, which we wouldn't expect to find here but we made sure and took a look at that.

We wanted to take a look at some parameters, sulfate, nitrate, trivalent iron, things like that that told us that something was going on here that was biologic activity that could break down the diesel. We looked at groundwater fluctuations in the area. What we're trying to find there was the gradient, to try to get an idea of what the gradient was here. And we looked at all that information and we took it over a number of weeks to figure it out. The gradient is really, really low as you move from the upland area toward the strait.

Right here it was 0.0108 foot per foot. And that's, you know, foot per vertical fall per foot of horizontal distance it travels. And then we did a bunch of recovery tests to get an idea of what the hydraulic conductivity was. And it was pretty low, it was 0.036, I think, centimeters per second. And that was representative of the type of soil we saw so we thought that looked like that was a reasonable amount.

Then we were worried about the distance between that well and the strait.

So what we did was we took all those parameters, put it into a model called Bioscreen to see what would happen if we took some assumptions and what would the concentration be at the strait. And so this is the results of the Bioscreen model. And so when we get down to the strait it comes down to about 0.150 milligrams per liter, and so that's 150 micrograms per liter. So we're down below our screening level 640, so it looks like it cleans up at the strait.

It's kind of weird. If I took a sample at the strait, and took a million samples at the strait, I guarantee you'd never see TPH diesel in them it would be so diluted, but that would be cheating, so I have to figure out a way that everybody feels comfortable with what we're doing, and this is one way that we can do that.

So what we did was we used the modeling data, and we applied the low threat underground storage tank closure policy guidelines to evaluate the conditions. And in this area there's a public water system, so groundwater is not being used. It also meets the groundwater quality exception. It's very, very salty and you can't get very much water out of it so it's not going to be used for domestic water supply on Mare Island.

The release only consisted of diesel, it didn't, you know, have any of these bad actors. Diesel is not usually a component -- I mean MTBE is not usually a component of diesel fuel.. We tested for it to make sure it wasn't there.

The release has been stopped. So the primary area, the oil/water separator and its contents, as much as we could, was removed. There's no free product anywhere. Didn't see any free product or any sheen on the water.

The secondary source, the soil around the oil/water separator had been removed. No nuisance conditions where there were any bad smells, anything like that in the thing. And it appears to be a low threat to the public health and to the environment as you move toward the strait. So on May 2nd of this year we submitted this request for closure and that right now is in the Water Board's review. We hope to get comments back from the Water Board about the middle of next month.

MS. WELLS: End of next month.

MR. SILER: End of next month. Okay. Promise one thing one day, take it away the next.

MR. COFFEY: Probably going on vacation. Come on.

MS. DIOHEP: Can I make sure I followed that? So essentially there were new facts that gave to more concern, but you were able to test and show that it wasn't, you didn't actually have to do any new remediation?

MR. SILER: No, we didn't.

MS. DIOHEP: Okay.

MR. SILER: And the reason we did that, again, like I said, I could take probably a million samples in the strait at certain levels in the strait, and I guarantee you, I'm really confident that you wouldn't find diesel --

MS. DIOHEP: But you might find something else and open up another path.

MR. SILER: The only trouble is if you look at what goes up and down the strait, you know, all of those two stroke engines and everything else that are shooting out oil anywhere, nobody's concerned about that.

But, you know, if you're going to take a look at what is actually in the water as it comes right out of there into the strait, I guarantee you with high probability you would not see any kind of diesel in there, it would be non-detect. But that would be cheating so, and I never cheat.

CO-CHAIR HAYES: Yeah, you don't even seem the cheating type, and you don't work for a company that cheats, for sure.

But here's the thing I don't -- I'm not tracking with you. You're not going to go do those million tests, and you're saying that would be cheating, but you're asking for --

MR. COFFEY: Closure.

CO-CHAIR HAYES: -- closure by doing nothing.

MR. SILER: Well, it's not that I'm doing nothing.

CO-CHAIR HAYES: So I'm confused.

MR. SILER: We didn't do nothing. We actually went back and we --

CO-CHAIR HAYES: Well it's not that you didn't do nothing, you did a modeling that showed you didn't have to do anything.

MR. SILER: And we took the parameters that we needed to support that model.

CO-CHAIR HAYES: but why is that not cheating?

MR. SILER: No, it's not.

CO-CHAIR HAYES: I mean maybe the Water Board could weigh in here. Ms. Wells could explain or --

MR. COFFEY: Enlighten us, Elizabeth.

MS. WELLS: Okay. So as Neal said, what we're interested in, and it sounds like what you're concerned about is, are there chemicals that are in the groundwater that are going to be migrating from the groundwater into the strait?

And with the diesel, what we did at this particular site is looked at it in a kind of a multiple line of evidence approach. So what we said to Lennar was that they could take samples of the water from their wells and do some actual testing on some fish, and see what happens to the fish.

Or they could look at the site conditions and develop, using a model -- and we're okay with modeling, but you have to do it very site specific. That's why they had to go out and look at what is the hydraulic conductivity of the soil itself. So is it a sandy screaming highway of flowing groundwater, or is it really tight clay that the groundwater is not moving and that kind of thing.

And so they -- it's been a lot of back and forth with Lennar on how to approach this problem. And the thing that, it took me a while to come to sort of all of this as well, because I was working with someone in-house who's an expert on petroleum. And the thing that I really got in talking with him was the cleanup number, the 640 cleanup number is applied for this giant 300 foot area, it's a 300 foot buffer that comes from the edge of the island that goes inland. And what we want to know is what's the number that's actually, we think would be discharging into the strait.

And so it's pretty standard, whether you're working at a solvent site or a petroleum site or another kind of site, to do modeling for groundwater. But we made them do it with site specific data. So that's why with Bioscreen they had to look at what are the actual biological or degradation type things, sulfites, nitrates, or whatever it is that they were sampling for.

So I hear your concerns. And when we first got the first request for closure, we basically said no. And one of the reasons they drilled seven holes trying to put a well is because we said if you can put a well closer to the strait that shows you've got this drop-off, and you can show the concentration is decreasing, then we would have confidence that we're getting there. But they tried the best they could and they couldn't put the well in.

So we also look at what's the level of effort that's gone into it and all of that. So we're pretty -- I haven't reviewed the report and the model, and the person I'm working with at the Water Board is reviewing it for me and we're going to talk about it as well. But we feel pretty confident that if the input parameters make sense, and the model that was used make sense, that this is a strong way to go toward the closure.

CO-CHAIR HAYES: Okay. Thank you.

MS. WELLS: Sure.

MR. SILER: So then moving along to IR03. IR03 is represented by this green line, very large area. It has both a source and a non-source area. So the source area is this area up in here where there were a number of aboveground storage tanks. There were four underground ground storage tanks here associated with Building 693. There's the fuel oil pipeline segments that run through here. There was a number of aboveground storage tanks right in here, in this area right here.

There was one underground storage tank, 541 that was down here in the non-source area that was removed quite a while ago.

So all of those similar petroleum hydrocarbon source areas were things that we looked at and were removed. So this area was excavated. This area right here was excavated quite a bit, this tank was taken out.

Since this was the non-source area, and all these issues down here had been dealt with, in 2008, 2009 both the Water Board and the Department of Toxic Substances Control said that this area could be closed out, but not this area up in here, it's a little more complicated and there are a number of things that are going on.

So the investigation and remediation activities in this area have been going on since 1983, and they continue to the present day. There was a very large removal action that took place in 2009 in the IR03 source area. That's just the slide there that talks about -- if you want to take a look at that later on what I'm talking about right now.

But this is the excavation that took place. It's over an area of about 21,600 square feet. About 10,500 tons of soil were removed from this area, contaminated soil was removed from this area. Got really good results for confirmation samples around this area.

One of the areas we had a problem with is right in here. This is a wood deck that we found about eight feet below the surface. We can't take this wood deck out because we would lose our support for the wharf in that area. Below it there's little pockets about a foot thick that has diesel in it that are really hard to get -- they're kind of sporadic and they're really hard to get rid of. So we just had to backfill this area because we looked at it.

Now we've gone back and tried to deal with these other issues that are in the area. We did a pilot test in the Installation Restoration Program 03 area. We hoped to get all these injection points. You can see this grid right here. We tried to get all these injection points, but then this is one of these problems in working with these former areas where things have been built on top of each other. This was our plan, but those blue dots are the only places we could actually get an injection point in. So we injected what's called oxygen releasing compound to deal with the petroleum hydrocarbon that was down in this area here, and that's what you're seeing by these blue dots.

There's a little bit of an issue again with the diesel as you come down here. We've been monitoring this area for quite a while. There's an 11 by 17 figure that's associated with your packet here, but the -- to quote Frankenstein, green bad, blue good. And so you can see we have an area down here that we tried to do some injection with, but we still have some high numbers of diesel, and it looks like it's weathered diesel.

Most everything else is pretty well cleaning up.

There's a couple areas in here that we're looking at.

So what we've done is we've continued the groundwater monitoring, and we've gone back and we're going to collect the site specific data that Elizabeth talked about.

Look at the soil conditions. Look at the chromatographic patterns again of the constituent of concern. You know, test for these natural attenuation parameters, and we have a lot of tests for these natural attenuation parameters.

Get an idea of the gradient in this area. And just in the last month they've been out there doing recovery tests on these wells to try to figure out what the hydraulic conductivity is so that they can input that into the model, and then look about the distance from the strait. So again we're going to go back and use this Bioscreen model. We're going to try to predict the petroleum hydrocarbon as diesel concentration at Mare Island Strait.

And again use the modeling data and the low threat underground storage tank risk guidelines to see if we can close the site out this way. So we haven't done this yet, and we haven't gone through everything. When we do it we'll see if it works.

If it works, we'll go in and talk to the Water Board, make sure they're comfortable with everything. And then if it looks like this is something that we can utilize, then we'll go ahead and submit a formal request for closure just like we've done at Building 144 oil/water separator.

So that's the end of my presentation. Do you have any questions? Please feel free.

MS. WELLS: Myrna, do you have any questions about that?

CO-CHAIR HAYES: No.

MS. WELLS: So I wanted to add one thing is that we appreciate the effort that Lennar has gone to out at this site, IR03, and the oil/water separator, but at this one site, the IR03, because of where the product is located it's really difficult in having this decking with the product underneath. And we recognize that there's only so many things you can do. And so the fact that they tried the pilot study.

So we're working together to kind of, to find some solutions where we, because we all have the same goal, to get to closure in a way where everything is safe for human health and the environment.

So we actually have spent quite a bit of time, DTSC and the Water Board and Lennar, talking about what are some things to do out at that site and what are some options. Because the longer things take, the less, you know, sites don't get redeveloped and all of that.

So we're -- I'm interested to see what the results of the Bioscreen are for that particular site and where it goes. I don't know what the answer is going to be when they do that analysis.

MR. SILER: Okay. Thank you very much.

CO-CHAIR LEAR: Thank you, Neal. So we are at our first public comment period. Do we have any comments?

(NO RESPONSE.)

CO-CHAIR LEAR: All right. Ten minute break.

(Thereupon there was a brief recess.)

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

CO-CHAIR LEAR: So we're at administrative business. If you have any comments on the last meeting minutes, please let me know. There are copies of the meeting minutes on the table as usual.

CO-CHAIR HAYES: Here's our latest request or invitation for individuals to participate in the Restoration Advisory Board. I love it as Nitro and Paula and me are right there in the center. It looks like we have a huge RAB, but it's all our great team, cleanup team, I think. Yep. Are you there, Mike?

MR. COFFEY: Wait --

CO-CHAIR HAYES: Well, I'll pass it around.

MS. DIOHEP: Would you like me to see if we can get that in one of the key city communications?

CO-CHAIR HAYES: Wouldn't that be great?

MS. DIOHEP: Are there any criteria for serving on the RAB?

MR. COFFEY: No. You can breathe.

MS. DIOHEP: All right.

CO-CHAIR LEAR: Actually we do have an application.

CO-CHAIR HAYES: I was just telling Patrick and Jonathan that

22 years ago April, or March probably, there were 65 applicants for initial Restoration Advisory Board, and 18 were selected to serve initially. And Paula and I have served since that first day, April 14, 1994.

MS. DIOHEP: We probably have all those applications in that storage stuff there.

CO-CHAIR HAYES: They went to the Navy.

So as I've said in many other RAB meetings but reiterate today, that I really appreciate all the RAB members who have served.

At the time we had applicants from throughout the Region because the economic impact and, therefore, the environmental cleanup concerns were perceived by the then-Navy and State and Federal regulators who were forming that board as significant in a very large geographic area.

So we have had community members from Vacaville, Benicia, certainly Vallejo, American Canyon, and Napa. And for very long periods of time, you know, they've maintained their interest.

As I've also said in the past, recently even, one of the challenges I think in maintaining a very large community pool is that the -- well, there's several; the island was never open to the public, unlike the Presidio which was always open to the public, was never closed a day in the Presidio to the public.

So you don't -- you haven't heard this from me in a while, you don't love who you don't know. So it's going to be hard to attract people to serve on this Board because they just don't know Mare Island, they have no investment in it, no interest in it, no knowledge of it.

MR. COFFEY: And it's kind of winding down.

CO-CHAIR HAYES: Well, the environmental cleanup we've heard, you know, might be winding down, but the concern on the public's part will last forever.

I just spent at least 40 minutes with a couple on Sunday afternoon at our preserve who have just bought a house on Poplar, and their son is a doctor of osteopathy student, they have a home in Fremont, they bought a second home here, and they just grilled me, man, everything from the nuclear propulsion program, from, you know, where there was still nuclear waste, blah, blah, blah, blah, you know, through the entire, you know, concern they had.

Now, they probably should have gotten, someone said in the room maybe I should be getting a commission from these realtors who are selling the property, but they haven't even heard of the environmental cleanup program probably, and make sure it's well buried in the disclosures.

MR. COFFEY: Should get some of them on the Board.

CO-CHAIR HAYES: It certainly was pretty well buried in the first sales, I just have heard that. Just saying. But I think the other thing, of course, as I said, the contaminants here don't flow in mother's breast milk. They are not contaminating the water, the drinking supply, and we're very grateful and very lucky for that.

All the conditions that Neal discussed in his presentation are in our favor, you know. Well, and that Elizabeth said that we generally don't have sandy soil and, you know, just a lot of factors. That does not mean, in my opinion, that people don't care. And, as I said, there are -- the eyes of this community are on the minutes as they go out, because I have very frequently been called or e-mailed or Facebooked about the sort of friendly nature of our discussions and sometimes the funny things that we say that are recorded -- I don't know about Kathleen's hand gestures, but -- So to go on for a while on that is to say that I feel that it's all of our responsibilities to make sure -- and thank you for this updated application -- to just make sure that this application does get out and about.

And it is pretty simple. We really don't have any reason to keep you off of the Board, even if we suspect that you're an infiltrant of some kind. It doesn't matter to me.

MR. COFFEY: I got on.

CO-CHAIR HAYES: You got on, yeah. I got on.

MS. DIOHEP: Can somebody send me that as a PDF or a document so I can --

CO-CHAIR LEAR: Uh-huh.

CO-CHAIR HAYES: Sure. So the last thing I'll say on that is that I think Chris is in this photo.

MR. COFFEY: No, he wasn't.

CO-CHAIR HAYES: He's not? Chris Rasmussen passed away two weeks ago, a long-time RAB member. So I've brought a card. And if you would like to sign a condolence card, I'll get that to his wife Karen. He did die of brain cancer. He wasn't too keen on letting anybody know that, and maybe he was in a little bit of denial. They'd had a pretty rough last four years with his wife having an aneurysm, their only daughter killed in a head-on collision a year later at 31 years old, and then Chris dying of brain cancer. So we'll just send our condolences to his wife, and publicly thank Chris for all he did in his time serving here on our Restoration Advisory Board as a community member.

V. FOCUS GROUP REPORTS

CO-CHAIR LEAR: Yes, we'll definitely miss Chris. So we are at the focus group reports. And technical group, do you have anything to share with us, Paula?

MS. TYGIELSKI: Nothing to report.

CO-CHAIR LEAR: All right. Now, I am positive that Kathleen has something to share with us for the City report.

a) City of Vallejo Update (Kathleen Diohep [City of Vallejo])

MS. DIOHEP: I actually was driving over and I was thinking I should say the City has nothing to report. But, yeah, I actually --

CO-CHAIR HAYES: Can you use the microphone?

MS. DIOHEP: Sure. If you didn't see the front page of yesterday's "Chronicle," we are entering -- are proposing, the council is going to consider an action next Tuesday to enter into a six month negotiating period to put an electric car manufacturing facility on north Mare Island.

I've got copies of the document here. The most interesting piece of this is that there's a three page letter from the company stating what their vision is. And part of this is they really kind of get it about what we need are jobs, what we need is a very green, clean building. And they looked at 187 sites around the country.

MR. COFFEY: Holy moly.

MS. DIOHEP: We sat in this room like two or three different times. The first time they showed up they weren't allowed to say their last names. And then they, you know, came in and all of

this. They needed to have a start-up production as fast as possible. They were trying to get a 2017 start of production, and it just took too long to do Mare Island.

So their first facility is being built out at north Las Vegas. So their first vehicles will be produced there. They expect, they have dynamic and expansive growth plans, and then their second facility would be here.

MR. COFFEY: Did they tell you who's funding them?

MS. DIOHEP: They are a privately held company, and we have validated and verified that they have funding.

MR. COFFEY: Okay.

MS. DIOHEP: And they have already spent -- one of the things they want -- you know, it's not a developer. A developer's aim is to get something, spend as little money as possible and tie something up as fast as, as long as possible to figure it out.

They actually spent a good bit of money. They did arrange some geotech borings. The Navy helped us with getting access out there. One of the things they were happy about is all of the geotech borings they did came back clean. And this was testing to what degree this really is ready for an industrial use. And so it's real exciting.

They are a start-up. It's an extraordinarily well funded start-up.

MR. COFFEY: They'd have to be sure.

MS. DIOHEP: But I think it's really exciting and it's what Mare Island needed is to take it all and just move forward.

This is just the beginning. There will be times and places for people to comment. That's actually one of the things I was thinking this might be a good, might be a really good window for us to put an outreach for more RAB members because there's going to be more attention on Mare Island and so that we could in --

MR. COFFEY: That's huge for Mare Island, that is huge.

MS. DIOHEP: It is.

MS. TYGIELSKI: That is good news.

CO-CHAIR HAYES: What kind of -- I don't mean to be negative, but what --

MR. COFFEY: Yes, you do.

CO-CHAIR HAYES: But my view -- well, I'm painting this beautiful photo in your mind. My view from my home is the Highway 37 bridge, and Highway 37 clear to Sears Point. I'm just curious, are they going to airlift vehicles out of their manufacturing facility? How would they get supplies in and --

MS. DIOHEP: Trucks.

CO-CHAIR HAYES: But on what road?

MR. COFFEY: 37.

CO-CHAIR HAYES: Have you seen 37?

MS. DIOHEP: So in, as you're well aware, the City adopted and prepared a reuse plan. This fits very much with the reuse plan.

CO-CHAIR HAYES: Oh, it does, yeah.

MS. DIOHEP: There were traffic studies done, analysis done. The reuse plan called -- showed and studied 19,000 jobs, seventeen or 19, a substantive number of jobs, well beyond what we have now, and even kind of well beyond what I think is probably probable.

CO-CHAIR HAYES: Right.

MS. DIOHEP: You know, part of the scenario was you wanted to justify an economic development conveyance, so you're justifying that you can create as many jobs as possible.

So, you know, I think the other thing with a large employer, you can do things like coordinate shifts. We could actually justify public transportation. We could do any number of things that actually manage transportation.

But, you know, to actually get this island back in use, it's going to be more traffic. It's just going to be, but that's a good thing.

CO-CHAIR HAYES: Well, I don't have a problem with more traffic, and I don't have a problem with whatever people want to do on that end of the island, however I'm just saying, I'm just wondering, it's an industrial operation which I assume is going to have a lot of material coming in, raw material, and it's going to have, I would assume that it's going, you know, aside from employees -- cause Tesla, if you checked them out, they don't -- I heard a really long presentation on NPR, they don't have hardly any employees, they have a lot of robots.

MR. COFFEY: It's true, it's 90 percent automated.

CO-CHAIR HAYES: But just the same, I'm just wondering, I mean like if you had a call center or an R and D or something like that, you would have a lot of people coming and they'd be hanging out working away in front of their little computers or something; but like here you have so much material and transportation, and I don't know, maybe people haven't updated the study --

MS. DIOHEP: That's what we'll be doing in the next --

CO-CHAIR HAYES: -- on Highway 37.

MS. DIOHEP: -- the next six months. Myrna, the other thing is --

CO-CHAIR HAYES: Cause it's like a truck stop for hours, so I'm just curious.

MS. DIOHEP: We worked with the Governor's office to bring this together. 37 needs upgrades. Things need to happen on 37. I think this can help us get the attention and the resources to upgrade 37. It's not clear to me that Mare Island or Vallejo alone should take the responsibility for funding and upgrading 37.

CO-CHAIR HAYES: And we could stay here all night on that.

MS. DIOHEP: Yeah.

CO-CHAIR HAYES: And there are some proposals.

MS. DIOHEP: Right.

CO-CHAIR HAYES: But I'm just saying that seems like that would have been the first thing they would have analyzed, and I would just be interested to see what their projection is on that.

MR. COFFEY: One of the things that I've learned from my wife being in government is that anytime there's a development like this done, and they do an EIR, there's always mitigation that has to be done, and a lot of it has to be borne by whoever is doing the development.

And a lot of times what will end up happening is the EIR will state that they have to have, that this much traffic is going to happen and all that kind of stuff because of it, and if they are as well funded as you say they are, what will end up happening is as part of the agreement of them building this whole facility is they're going to have to do mitigation, and they're going to have to pay for it.

CO-CHAIR HAYES: Like American Canyon's had for traffic.

MR. COFFEY: They have to deal with a state entity, you know, CalTrans, and in 2017 that whole section of Highway 29 is supposed to be widened, two lanes on either side, all the way into Napa. And there's a whole other road coming in behind American Canyon that goes all the way to Jameson Canyon Road.

But as part of that development I'm sure that there will be all kinds of attachments that they'll have to pay for in order to build on Mare Island.

MS. TYGIELSKI: In the past developments have come and it's like people didn't take traffic into account.

MR. COFFEY: Well, they will now.

MS. TYGIELSKI: Like all those houses put in there, it's like how are people going to commute on this one little causeway?

MR. COFFEY: The biggest worry though is they have to have the labor force already here because you can't afford to live here if you, move here and work a basic job. I mean the cost of living is just too high. They'd have to get --

MS. DIOHEP: Well that's actually -- they actually did -- one of the early due diligence they did was labor force due diligence, going around and identifying that we have, and we're having, starting to have conversations about job training, their ideal candidate is a high school grad with certain skills. Really this fits the demographic and the workforce that we have.

So we're -- I mean there's many, there's a lot of issues, there's going to be a lot of time to ask questions, but I think people rally around making something happen.

And so we're pretty excited.

But, you know, definitely it's an agreement to negotiate. I know it's legitimate for people in town to have skepticism. I know I have read through I think four or five different developer proposals and things you've been through, and different, you know, there's been any number of people who have tried to take a run at north island in the last fifteen years.

CO-CHAIR HAYES: Well, here again this is a good example of environmental cleanup making reuse possible.

MS. DIOHEP: The other thing to know is, I mean, other things are moving forward on the island. There's more going on. There's a lot of interest. There should be a snowballing effect. It's good.

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

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

MR. SILER: Okay. There's no handout this time because what we're really focusing on right now is trying to get a number of the investigation areas closed. We're very close. We're very close to getting Investigation Area B.2-2 closed, which is the area that's between Azuar Drive, Walnut Avenue, Connolly Street and -- or Kansas, excuse me, and then back to A Street. So we're trying to get that closed right now. In addition we're trying to get Investigation Area H-2 closed, which is the one that's really close by to B.2-2, just directly to the south. And then we're trying to get Investigation Area C3 closed which is where the dry docks are. So hopefully by the fall we will have B.2-2 and H-2 closed, and hopefully by the end of the year or sometime early next year we'll have Investigation Area C3 closed.

In addition to that, we continue to move forward with Remedial Action Plans and the finalization of those for the two remaining areas which are Investigation Area C1 and C2. So hopefully those will be finalized sometime in the later part of this year. So once we get those three areas closed, B.2-2, H2, and C3, we'll have about 75 percent of the Eastern Early Transfer Parcel cleaned up at that point and no further action.

So that's it.

MS. DIOHEP: I think what's really an accomplishment is when we're referring to who's doing what where rather than the remediation names, you know.

CO-CHAIR LEAR: So that brings up a good point, Neal. So Lennar is looking at 75 percent complete at the end of the year. The Navy has a lot of fieldwork going on this summer, and we also have a few parcels right in queue to transfer out of federal ownership. So our cleanup program is going to be considerably smaller by the end of the year also. I think probably this fall we should start talking about reducing the RAB meetings to quarterly instead of every other month. So I just thought I would throw that out so we can start talking about what makes sense.

MS. DIOHEP: As we put the RAB applications out there again and promote for it, it might be that there would be more people who would step up for four times a year rather than six times.

CO-CHAIR LEAR: Sure. We'll continue to talk about it as we move forward.

So Dwight, Weston update.

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

MR. GEMAR: Well, as usual a pretty short update for Weston as we are winding down our work under the Environmental Services Cooperative Agreement.

So basically there's just two documents left, and this is for the IR05, Dredge Pond 7 South, Western Magazine Area, which are down at the southwest corner of the island, and that's the Record of Decision/Remedial Action Plan and the Remedial Design for the future land use controls. So those are the only two remaining documents that are still outstanding.

Other than that, Investigation Area H1 which includes our 72 acre containment area and historical landfill. We continue to operate the groundwater collection system. And again, that's been operating satisfactorily since we started it up back in 2005.

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

MS. WELLS: Okay. So the Water Board update. The reason that the Record of Decision and Remedial Action Plan, right, for the IR Site 05 Dredge Pond 7S and Western Magazine Area is not complete is because of the Water Board. So we are working through some final comments that we have on that Record of Decision. And hopefully we can come to a final agreement next week and move that forward.

The other thing that we've been doing is we continue to review and comment on documents. Recently we've been reviewing documents for the Defense Reutilization and Marketing Office, the Crane Test Area North, and Installation Restoration Program Site 04.

And I am also going to say I will not be at the RAB meeting next time, and I will not be thinking about the RAB meeting next time because I will be in the Galapagos.

MS. TYGIELSKI: Ooh, lucky you.

MR. COFFEY: Oh, wow.

MS. WELLS: I know, right.

CO-CHAIR HAYES: Wow.

MS. WELLS: So if I --

MR. COFFEY: Will you be testing water in the Galapagos?

MS. WELLS: Yes. If I can get some nice photos of blue footed boobies and iguanas and all those other things, I can show a couple of slides.

MR. HSIEH: Okay. So the big news for me is that I have accepted a tentative offer for a job promotion within the department. It's with the Office of Criminal Investigations.

MR. COFFEY: Woah.

MR. HSIEH: Which means I will be leaving the cleanup program. As of right now I still don't have an end date or a start date for my new position, but we are starting on a transition. And so I have with me Jonathan Largent. He will be taking over Mare Island, the Navy side, not the EETP side. That will still stay with Alan Fone.

But you are in really good hands with Jonathan. He has years of experience with the department. He has experience with the Department of Defense sites, and he's an engineer. So, you know, go start asking him questions.

But in the meantime, I'm also still working on Mare Island. And so is Jonathan actually. That's part of the transition, he is picking up some documents to review. IR17, Installation Restoration Site 17 which is in the north Mare Island project that Kathleen talked about is a huge priority for us, and so that is what I am still working on. That's my first priority.

We're working on the California Environmental Quality Act compliance documents on that still, but I'm looking to get that finished pretty soon. And I'm also working on the South Shore Area

project that Brooks just gave a presentation on, being a time critical action is also a pretty high priority too.

So, you know, I'm still working on stuff, but Jonathan is also working on stuff.

CO-CHAIR HAYES: Well, thank you, Patrick, and welcome, Jonathan.

MR. LARGENT: Thanks.

CO-CHAIR LEAR: Oh, no, you don't get off that easy. Tell us about yourself.

MR. LARGENT: Okay. So my agency report is I'm going to talk about myself. I'm Jonathan, and I have worked for DTSC for ten years. I worked in private industry for four years with a small cleanup firm out of Northern California, out of Eureka, it's called Selvidge, Heber and Nelson. My background; I have a Bachelors in chemistry, Masters in engineering. I like to take hikes with my family. My wife is an avid birder, so I stand there while she looks at birds. I have two small children and I live in Oakland. So that's about it.

MS. TYGIELSKI: Thank you.

CO-CHAIR HAYES: Welcome aboard. We'll invite you to the Fourth Annual San Francisco Bay Osprey Days June 24th through 26th. That ought to be fun.

MR. COFFEY: You can watch your wife watch.

MS. DIOHEP: No, he probably has to watch the kids while the wife watches.

MR. LARGENT: Now I do.

MS. TYGIELSKI: Yeah, you watch the kids while she watches the birds.

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

CO-CHAIR LEAR: Okay. So Co-Chairs' report. You should have the Navy monthly progress report. This last month we did some investigative waste disposal from some work at IR17 as well as some PCB work in IA F1 also known as the Production Manufacturing Area. We are continuing PCB cleanup. Also down in F1, that's planned for June. And as you could tell from the presentation that Brooks gave, we have a lot of fieldwork coming up, not only with South Shore Area, but also IR17 ramping up to do the remedial action in the fall. So we'll be quite busy during this field season.

We submitted one document to the regulators and we received comments back on three during this past period.

Let's see. So we have our regular RAB meeting on July 28th. Elizabeth will not be here; Jonathan, will you be?

MR. LARGENT: Yes.

CO-CHAIR LEAR: Okay. Great. And then just so you're aware, in our November RAB meeting, usually it ends up falling on Thanksgiving so we always kick it to the first week in December. So you'll notice on the back of the handout December 1st is marked in bold, so that's basically our November RAB meeting. So that's all I have.

Myrna.

CO-CHAIR HAYES: We should schedule in that schedule at some point a RAB tour --

MR. COFFEY: Uh-huh.

CO-CHAIR HAYES: -- cleanup site tour in the fall at some point. And again, the only thing I have to report in addition to whatever else I've talked about tonight is the upcoming San Francisco Bay Osprey Days. That's three days, the 24th, 25th and 26th of June. And guided walks, guided boat trips, guided driving tours of an estimated twenty nests at Mare Island, as well as presentations. Specifically we know that we'll be talking about the explosion of osprey nests in Richmond, going from three, two years ago, to eleven last year, and thirteen this year. But we're still staying ahead of them.

And we will have on Sunday a special presentation, actually several hours of touring and journaling as well as demonstrations of how to sketch osprey by John Muir's great grandson John Muir Laws. So that's an exciting component of this year's festival.

So we'll be working with the city and hopefully with the Navy to hopefully have some tours on the south shore as we usually do.

CO-CHAIR LEAR: Okay. Final public comment period. Anybody have anything else to say?
(NO RESPONSE.)

CO-CHAIR LEAR: All right. Thanks, everyone, for coming. Drive safe and see you next time.
(Thereupon the proceedings ended at 9:10 p.m.)

List of Handouts:

- Presentation Handout – Former Mare Island Naval Shipyard SSA Shoreline Munitions TCRA
- SSA Shoreline Munitions TCRA Figures
- Presentation Handout – Building 144 Oil/Water Separator Request for Closure, Application to Closure of Installation Restoration Program Site 03
- Weston Solutions Mare Island Update
- Navy Monthly Progress Report May 2016

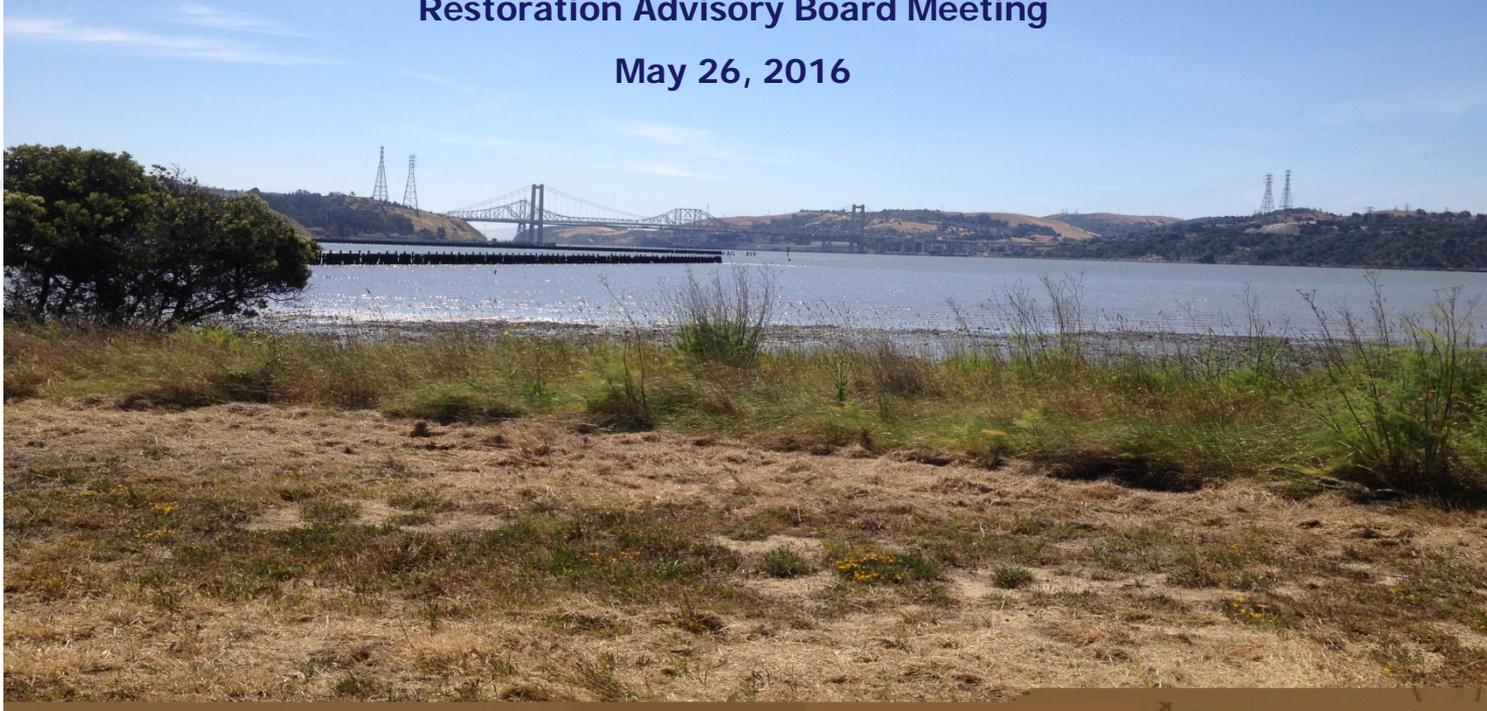
**Attachment 1. Presentation Handout – Former Mare
Island Naval Shipyard SSA Shoreline
Munitions TCRA**



Former Mare Island Naval Shipyard South Shore Area (SSA) Shoreline Munitions Time-Critical Removal Action (TCRA)

Restoration Advisory Board Meeting

May 26, 2016



Presentation Overview



- Site Location
- Site History
- Shoreline Features
- Current Conditions
- Project Scope
- Munitions Investigation / Removal
- Shoreline Stabilization Design
- Planning Documents and Fieldwork Schedule
- Questions

South Shore Area (SSA) : Location Map



SSA : Historical Use



- Created from fill in the 1930s-1940s
- Munitions storage, handling and disposal
- Support activities
 - Incorporation of inert components to underwater mines (batteries, anchors, etc)
 - Maintenance of munitions shipping containers

SSA: History of Previous Munitions Removals



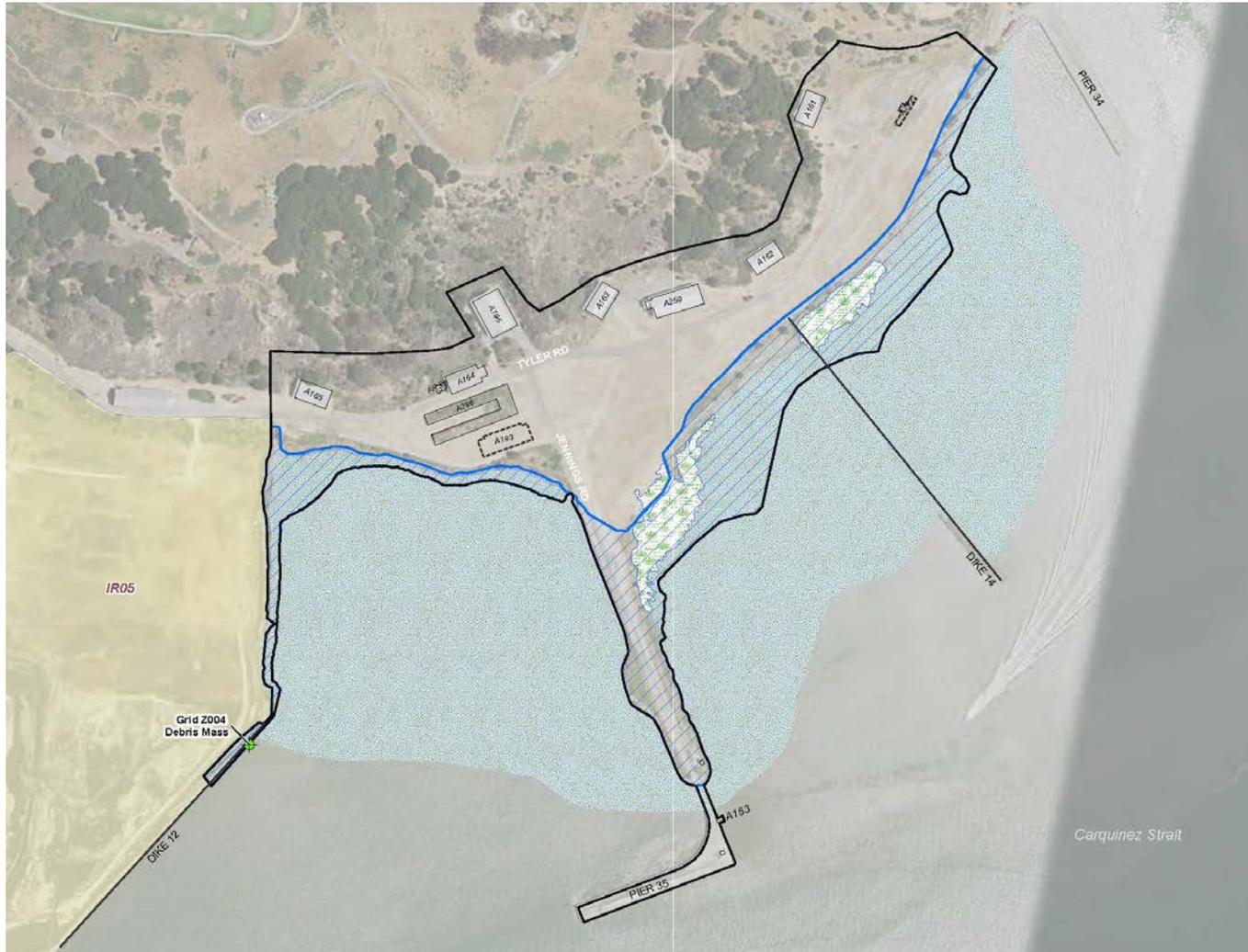
- 1990 – Early emergency surface removals
- 1997 to 1999 – Geophysical survey and removal of over 1000 metallic anomalies
- 2003 and 2006 – Additional Geophysical surveys
- 2012 to 2013 Non-Time Critical Removal Action (NTCRA) conducted to remove metallic items identified during 2003 and 2006 surveys
- 2012 to 2013 NTCRA Statistics for SSA
 - Over 13,000 metallic anomalies dug
 - 100% under building anomalies removed
 - 100% Category A anomalies removed
 - Minimum 20% Category B anomalies removed (actual 59%)
 - Only 1 to 2% of anomalies were MEC

Examples of Removed Munitions



Typical munitions and small arms removed from SSA

Shoreline Features



- **Shoreline Area = 6,200 linear feet
13.1 acres**
- **Tidal Wetlands = 2.2 acres**

LEGEND

-  SHORELINE AREA
-  SOUTH SHORE AREA
-  BUILDING - EXISTING
-  BUILDING - DEMOLISHED
-  TIDAL MUDFLAT
-  WETLAND

Shoreline: Current Conditions



Western shoreline erosions along IR-05 looking north

Shoreline: Current Conditions Cont'd



Limited and inappropriate stabilization materials

Shoreline: Current Condition cont'd



Munitions casings in concrete along Western shoreline

Project Scope



Munitions Removal

- Investigate existing shoreline including stabilization features (rip rap) and remove visible munitions items
- Perform subsurface geophysical survey of accessible mudflat and tidal wetlands areas to locate and remove detectable metallic items
- Disassemble and investigate the Grid Z004 Debris Mass for munitions items

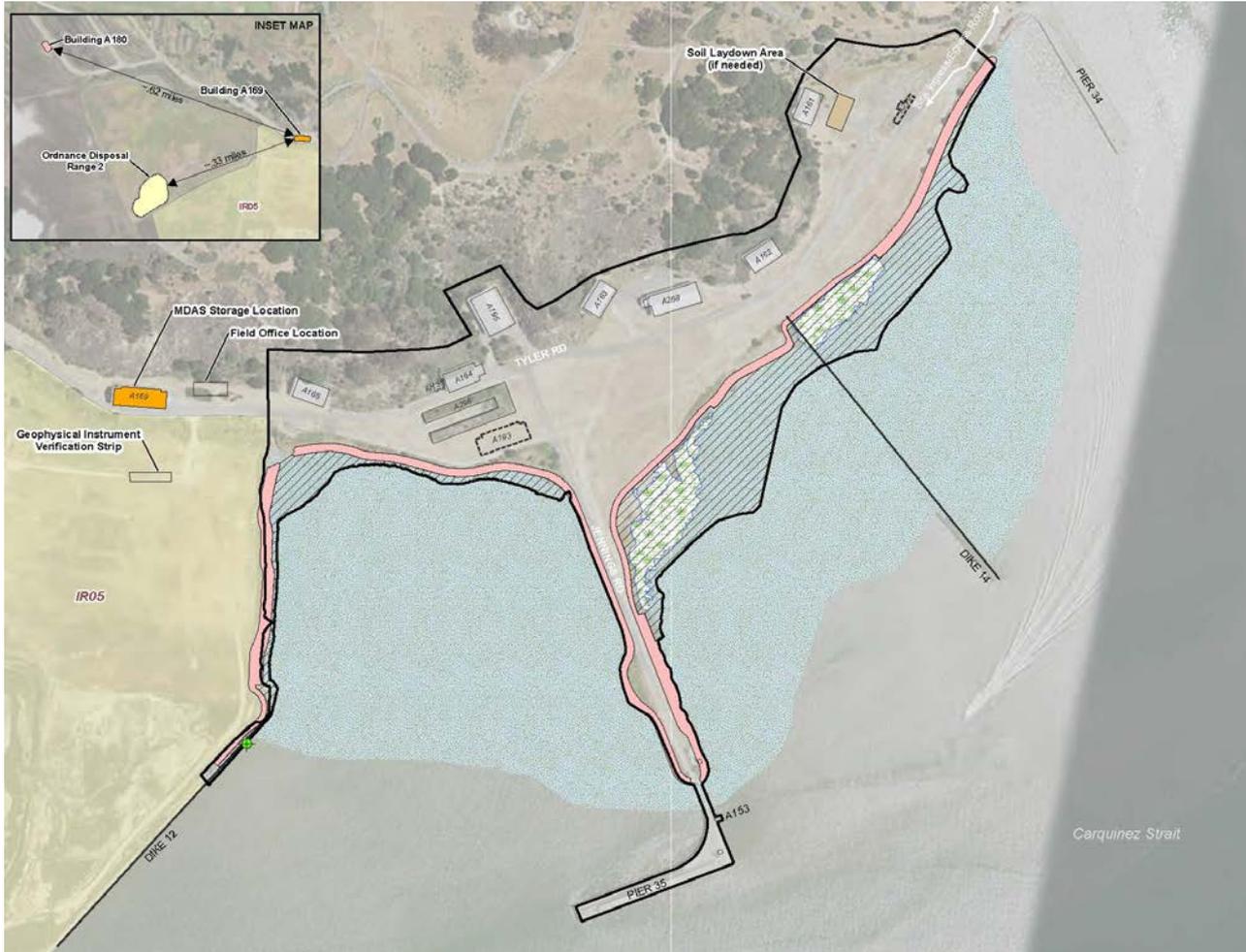
Shoreline Stabilization

- Install new or supplemental stabilization to reduce erosion and the potential for exposure of residual munitions items

Resource Protection

- Biological Monitoring and Avoidance for Salt Marsh Harvest Mouse, Rails, Nesting Birds and Rare Plants

Project Scope



LEGEND

-  GRID Z004 DEBRIS MASS
-  SOUTH SHORE AREA - BOUNDARY
INCLUDES THE AREA ACCESSIBLE AT MEAN LOW LOW WATER LEVEL
-  TIDAL MUDFLAT
-  WETLAND
-  SHORELINE STABILIZATION AREA
(VISUAL MUNITIONS CLEARANCE AND RIP RAP PLACEMENT)
-  GEOPHYSICAL SURVEY AND MUNITIONS CLEARANCE AREA
-  BUILDING - EXISTING
-  BUILDING - DEMOLISHED
-  IR05 SITE BOUNDARY

Munitions Investigation/Removal



Investigation

- Perform geophysical survey at low tide on exposed mudflat to identify and remove metallic items (mag & dig)
- Visually inspect existing riprap for munitions (including MEC and MDAS)

Removal

- Observed munitions in the rip rap and surface and subsurface metallic items in the mudflats will be removed primarily using hand tools
- Mechanical excavation may be employed if high metallic item density is encountered in either area



Grid Z004 Debris Mass



Debris Mass

- Approximately 3-foot by 3 foot
- Fuzed metal similar to larger masses found in other dredge ponds on Mare Island
- May contain munitions items

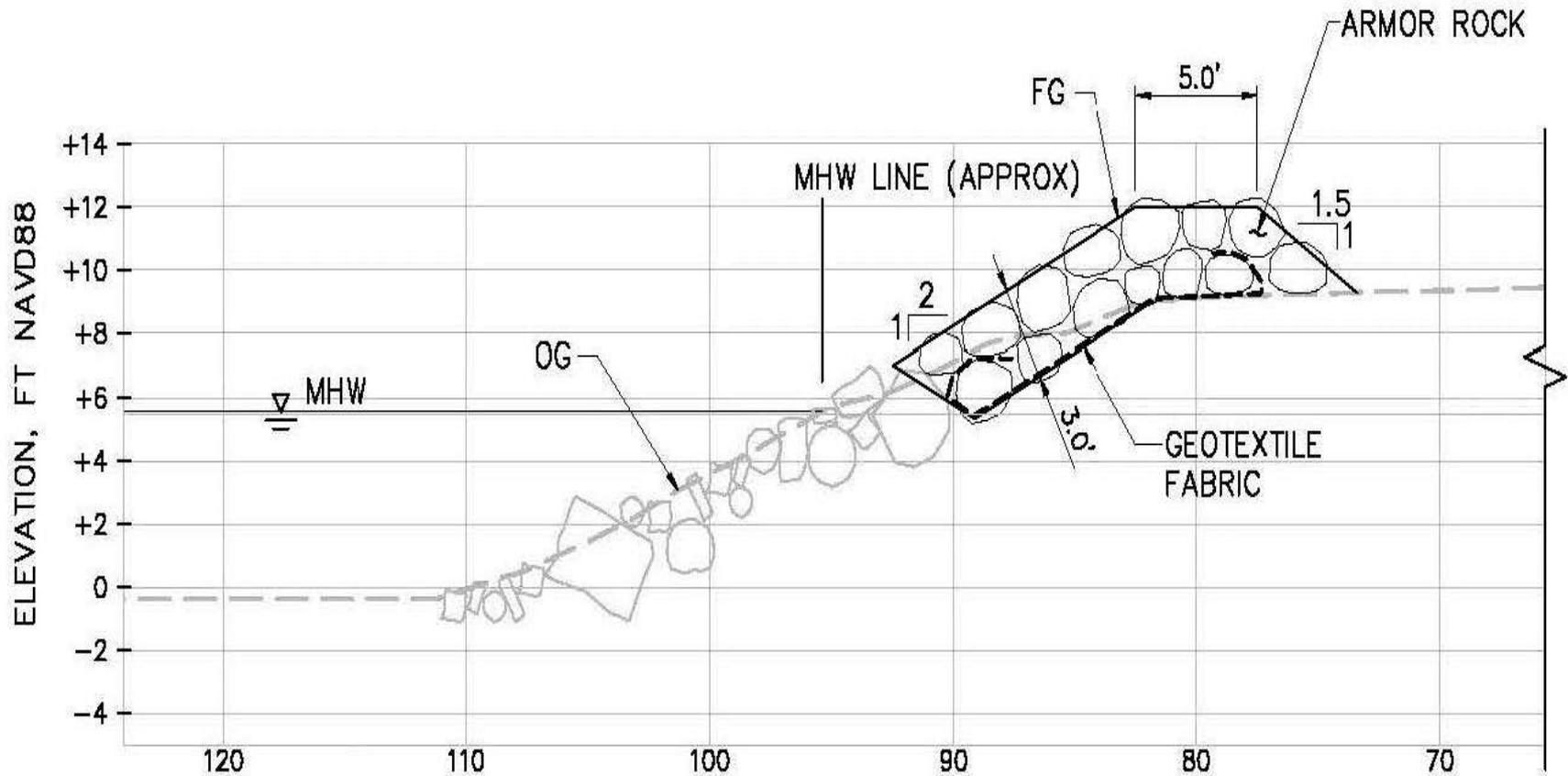
Munitions Investigation/Removal: Exclusion Zones



Shoreline Stabilization Design: Wave Study Transects and Wave Heights (feet)



Shoreline Stabilization Design: Typical Cross-Section



Shoreline Stabilization Design: Conceptual Rendering



- Action Memorandum
 - Draft issued in January 2016
 - Review comments received February and April 2016
 - Final to be issued upon resolution of review comments
- Munitions TCRA Work Plan
 - Draft issued in March 2016
 - Agency review comments expected in June 2016
 - Final to be issued upon resolution of review comments
- Field Work Anticipated Late Summer/Fall 2016



Acronyms



APPROX – Approximately

BRAC- Base Realignment and Closure

CERCLA- Comprehensive Environmental Response, Compensation and Liability Act

DTSC- Department of Toxic Substances Control

FG- Future grade

FT – Feet

HFD –Hazardous fragment distance

Hs – Significant wave height

IR – Installation Restoration

MDAS – Munitions documented as safe

MEC – Munitions and explosives of concern

MFD –Maximum fragment distance

MGFD – Munition with the Greatest Fragmentation Distance

MHW-mean high water

Acronyms Cont'd



NAVD88 – North American Vertical Datum of 1988

NTCRA – Non-Time Critical Removal Action

NOAA-National Oceanic & Atmospheric Organization

OG – Original grade

SSA- South Shore Area

SW- Spectral Wave

TCRA – Time Critical Removal Action

Attachment 2. SSA Shoreline Munitions TCRA Figures

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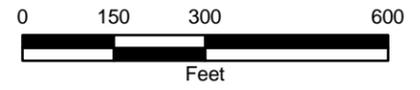
LEGEND

-  SHORELINE AREA
-  SOUTH SHORE AREA - BOUNDARY
INCLUDES THE AREA ACCESSIBLE AT MEAN LOW LOW WATER LEVEL
-  BUILDING - EXISTING
-  BUILDING - DEMOLISHED
-  TIDAL MUDFLAT
-  WETLAND
-  IRP SITE BOUNDARY

NOTES:
 IR05 = Installation Restoration Site 05
 SSA = South Shore Area
 TCRA = Time Critical Removal Action

IMAGERY SOURCE:
 ESRI ArcGIS Online Web Service, World Imagery 6/8/2014

SCALE NOTE:
 The midpoint of the scale bar below indicates a width of 1".
 If measurement to this point is not 1", it is due to reformatting of this figure from the electronic source to hard copy.



Site Vicinity Map

Work Plan - SSA Shoreline Munitions TCRA
 Former Mare Island Naval Shipyard, Vallejo, California



FIGURE

2

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LEGEND

- GRID Z004 DEBRIS MASS
- SOUTH SHORE AREA - BOUNDARY INCLUDES THE AREA ACCESSIBLE AT MEAN LOW LOW WATER LEVEL
- TIDAL MUDFLAT
- WETLAND
- SHORELINE STABILIZATION AREA (VISUAL MUNITIONS CLEARANCE AND RIP RAP PLACEMENT)
- GEOPHYSICAL SURVEY AND MUNITIONS CLEARANCE AREA
- BUILDING - EXISTING
- BUILDING - DEMOLISHED
- IR05 SITE BOUNDARY

SCOPE OF WORK:

- Mudflat/Wetland Areas Munitions Clearance
- Rip rap Areas Munitions Clearance
- Debris Mass Removal
- Waste Management
- Shoreline Stabilization Installation (rip rap)
- Site Restoration

NOTES:

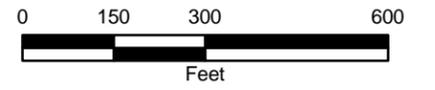
MDAS = Material Documented as Safe
 IR05 = Installation Restoration Site 05
 SSA = South Shore Area
 TCRA = Time Critical Removal Action

IMAGERY SOURCE:

ESRI ArcGIS Online Web Service, World Imagery 6/8/2014

SCALE NOTE:

The midpoint of the scale bar below indicates a width of 1".
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TCRA Work Areas

Work Plan - SSA Shoreline Munitions TCRA
 Former Mare Island Naval Shipyard, Vallejo, California



FIGURE

8

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LEGEND

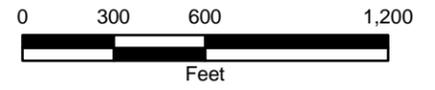
- GRID Z004 DEBRIS MASS
- DEBRIS MASS DISASSEMBLY LOCATION
- ANOMALY REMOVAL**
 - PRIMARY MGFD - 4-INCH MK6 MOD 6 COMMON PROJECTILE (232 ft HFD)
 - CONTINGENCY MGFD - 6-INCH PARROTT SHELL (291 ft HFD)
 - CONTINGENCY MGFD - 7.2-INCH MOUSETRAP ROCKET (399 ft HFD)
 - CONTINGENCY MGFD - MK6 DEPTH CHARGE (850 ft HFD)
- DEBRIS MASS DISASSEMBLY**
 - PRIMARY MGFD - 3-INCH/50 CALIBER MK 27 HE PROJECTILE (1,823 ft MFD)
 - CONTINGENCY MGFD - 4-INCH MK 6 MOD 6 COMMON PROJECTILE (2,062 ft MFD)
 - ORDNANCE DISPOSAL RANGE 2
 - SOIL SCREENING AREA
 - MAGAZINE A180
 - BUILDING - EXISTING
 - BUILDING - DEMOLISHED
 - SHORELINE AREA
 - SOUTH SHORE AREA - BOUNDARY INCLUDES THE AREA ACCESSIBLE AT MEAN LOW LOW WATER LEVEL
 - IR05 SITE BOUNDARY

NOTES:
 ft = foot
 MGFD = Munitions with Greatest Fragmentation Distance
 MFD = Minimum Fragmentation Distance
 MK = Mark
 MOD = Module
 HFD = Hazardous Fragmentation Distance
 HE = High Explosive
 IR05 = Installation Restoration Site 05
 SSA = South Shore Area
 TCRA = Time Critical Removal Action

- Only buildings within or near the fragmentation distance arcs are shown.

IMAGERY SOURCE:
 ESRI ArcGIS Online Web Service, World Imagery 6/8/2014

SCALE NOTE:
 The midpoint of the scale bar below indicates a width of 1".
 If measurement to this point is not 1", it is due to reformatting of this figure from the electronic source to hard copy.



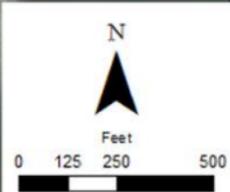
Ordnance Disposal Range #2

Work Plan - SSA Shoreline Munitions TCRA
Former Mare Island Naval Shipyard, Vallejo, California



FIGURE

9



**Attachment 3. Presentation Handout – Building 144
Oil/Water Separator Request for
Closure, Application to Closure of
Installation Restoration Program Site
03**

**Building 144 Oil / Water Separator
Request for Closure**

**Application to Closure of
Installation Restoration Program Site 03**

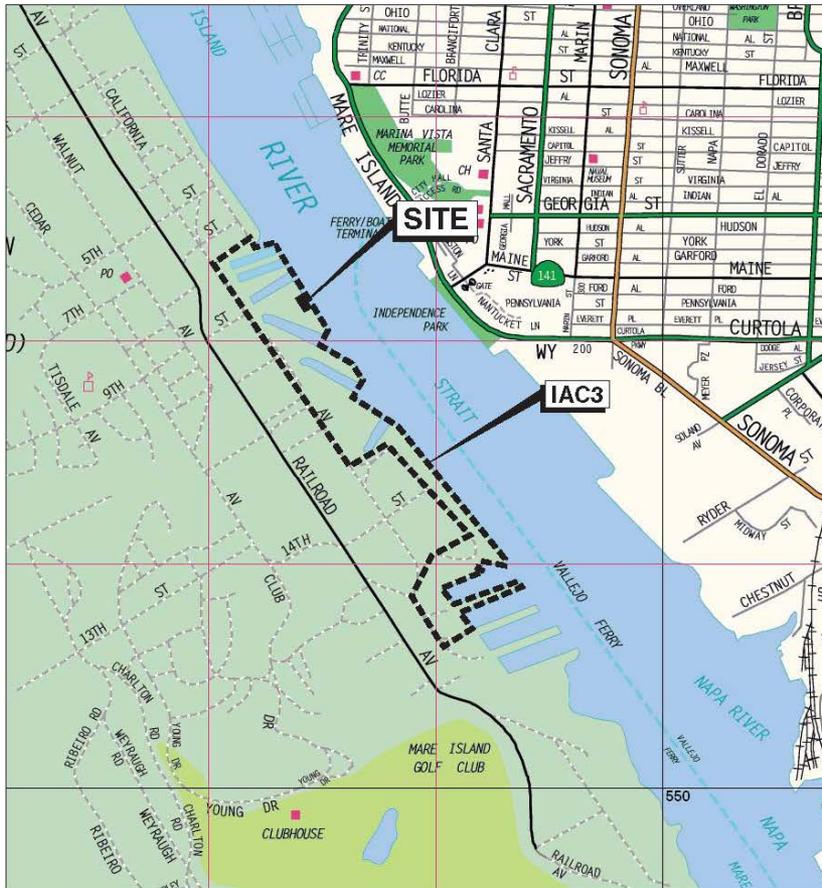
Investigation Areas C1 and C3

Presented to
Mare Island Restoration Advisory Board

May 26, 2016

Discussion Topics

- **The Relationship Between Building 144 and Installation Restoration Program Site (IR) 03**
- **Building 144 – Description and History**
- **Building 144 – Groundwater Condition Summary**
- **Building 144 – Path Forward for Site Closure**
- **IR 03 – Description and History**
- **IR03 – Path Forward for Site Closure**
- **Questions**



Base map: The Thomas Guide
Solano County
1999

0 1/4 1/2 Mile

Approximate scale

**INVESTIGATION AREA C3
MARE ISLAND
Vallejo, California**

**SITE LOCATION MAP
BUILDING 144**

Treadwell&Rolo

Date 09/03/09 Project No. 4752.03 Figure 1



**INVESTIGATION AREA C3
MARE ISLAND
Vallejo, California**

**BUILDING 144 LOCATION
DRY DOCK AREA**

Date 04/21/10 Project No. 4752.03 Figure 2

0 250 Feet

Approximate scale

Treadwell&Rolo

Building 144 – Description and History

- **A Subsurface Oil / Water Separator (OWS) in Use Prior to Construction of Building 144**
- **Associated with Adjacent Paint Shop in Building 334**
- **Date of OWS Installation Unknown**
- **OWS Decommissioned in 1983**
- **Building 144 Constructed in 1983**
 - Located in IR09
 - 5,900 Square Foot “Work” Facility
- **Installation Area (IA) C3 Remedial Action Plan**
 - Proposed Remedy – Excavation and Offsite Disposal of Lead-Contaminated Soil
 - Soil Excavation and Disposal Occurred in June-September 2009
 - ❖ Depth of Excavation Ranged from 7.25 to 8.00 Feet Below Grade
 - OWS Encountered During Excavation. It was Partially Removed.
 - Complete Removal Not Possible – Concern Over Structural Integrity of Building
 - No Visual Evidence of Petroleum Hydrocarbon Contamination Observed

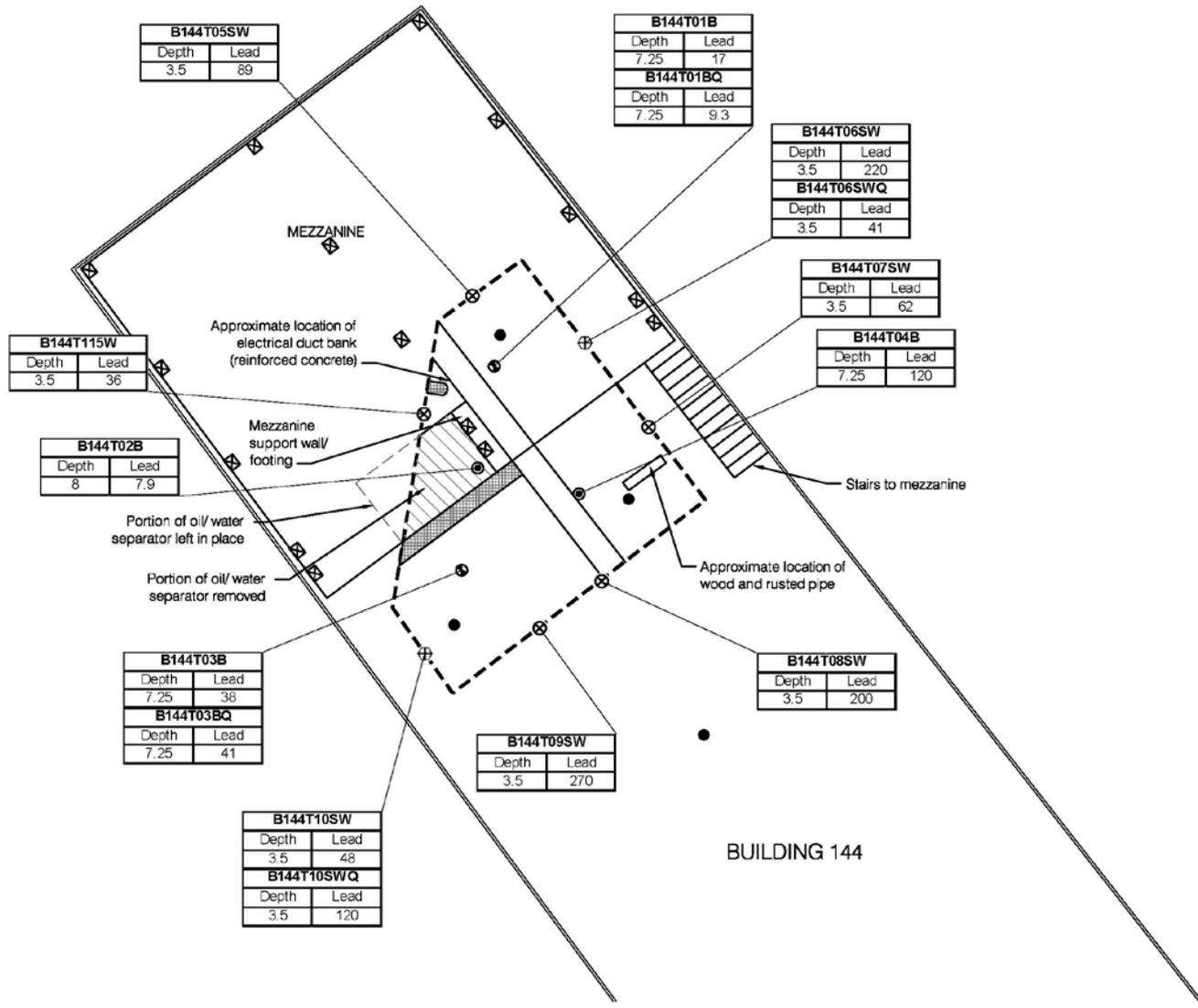
2009 Building 144 OWS Excavation



Oil / Water Separator



S:\Trenching-06\4700\4752.03\4752.03 Remedial Excavation and Confirmation Sample Results Building 144.Fig. 4.dwg 4/28/10



EXPLANATION

- Approximate location of previous soil sample
- ⊙ Excavation base verification sample
- ⊗ Excavation sidewall verification sample
- ⊕ Excavation base verification sample and QA/QC sample
- ⊕ Excavation sidewall verification sample and QA/QC sample
- - - Approximate extent of excavation
- - - Approximate extent of mezzanine structure
- Approximate extent of Building 144
- ⊠ Approximate location of mezzanine support column
- ▨ Location of encountered Abrasive Blast Material (ABM)

Sample Number Explanation

B144 Building number
T Collection method; T for trowel
07 Sample number
SW Location in excavation;
 SW - Side wall
 B - Base

Lead concentrations in milligrams per kilogram (mg/kg)

Depths in feet below top of floor slab

**INVESTIGATION AREA C3
 MARE ISLAND
 Vallejo, California**

**REMEDIAL EXCAVATION AND CONFIRMATION
 SAMPLE RESULTS - BUILDING 144**

Date 04/27/10 | Project No. 4752.03 | Figure 4

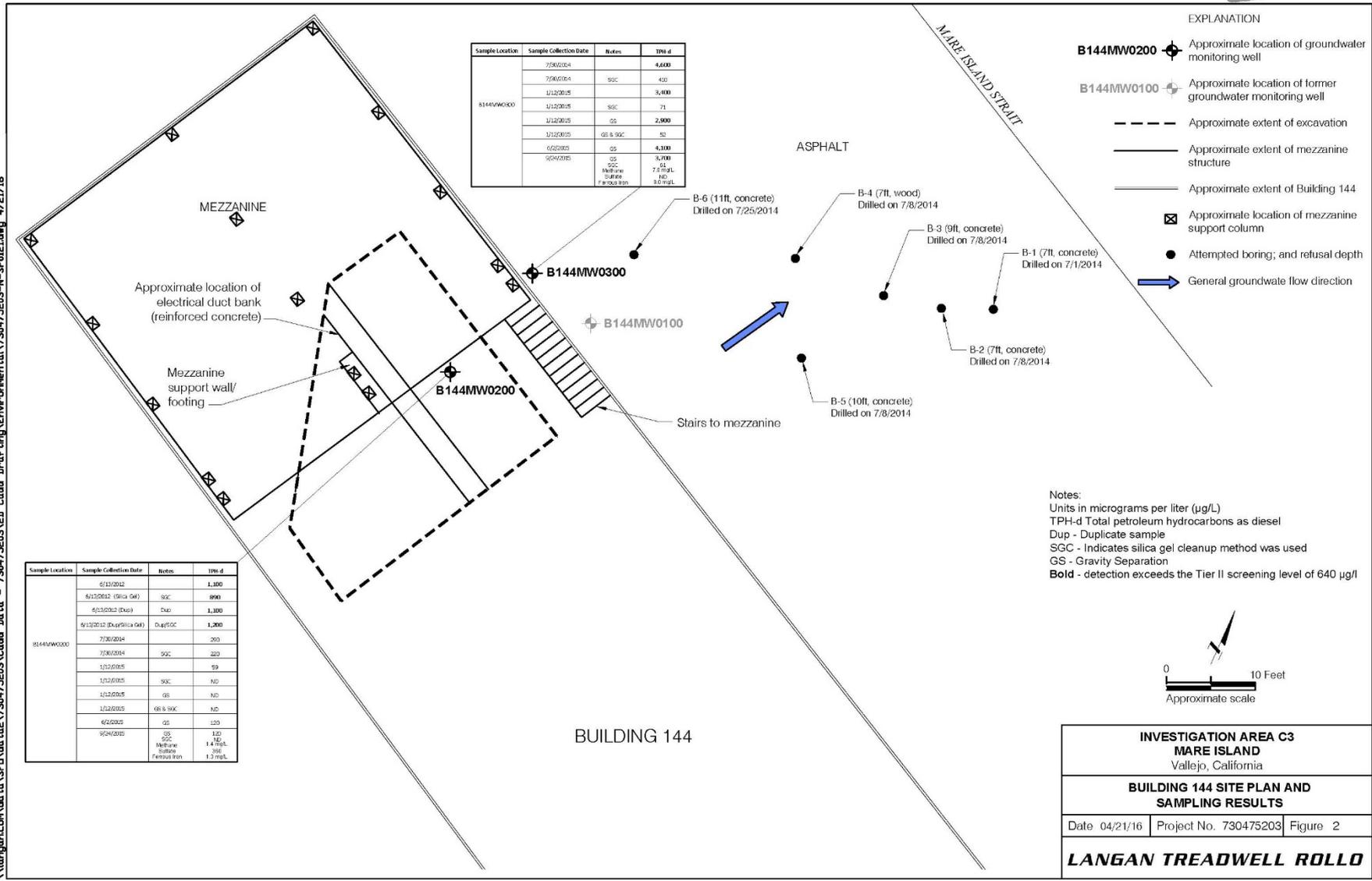
Treadwell & Rollo

Building 144 – Groundwater Condition Summary

- **Well B144MW0100**
 - Located Immediately East of Building 144
 - Sampled Between 2003 and 2010 (7 Sampling Events)
 - Samples Analyzed for:
 - ❖ Total Petroleum Hydrocarbons as Gasoline (TPHg), Diesel (TPHd) and Motor-Oil (TPHmo)
 - ❖ Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX)
 - ❖ Polynuclear Aromatic Hydrocarbons (PAHs)
 - Only TPHd Detected Above Tier 2 Screening Level (640 micrograms per liter [$\mu\text{g/L}$])
 - Well Abandoned in 2011
- **In 2012, California Department of Toxic Substances Control (DTSC) Requested Additional Groundwater Sampling**
- **Well B144MW0200 Installed and Sampled in 2012**
 - Only TPHd Detected Above Tier 2 Screening Level (640 $\mu\text{g/L}$)
- **Well B144MW0300 Installed and Sampled in 2014**
 - Seven Borings Were Attempted to Install Well
 - Sampled from July 2014 to September 2015

DRAFT

\\langan.com\data\SF\DA\data\730475203\Cadd Data - 730475203\Cadd Data - 730475203\2D Cadd Drafting\Environmental\730475203-N-SP012.dwg 4/21/16



Building 144 – Path Forward for Site Closure

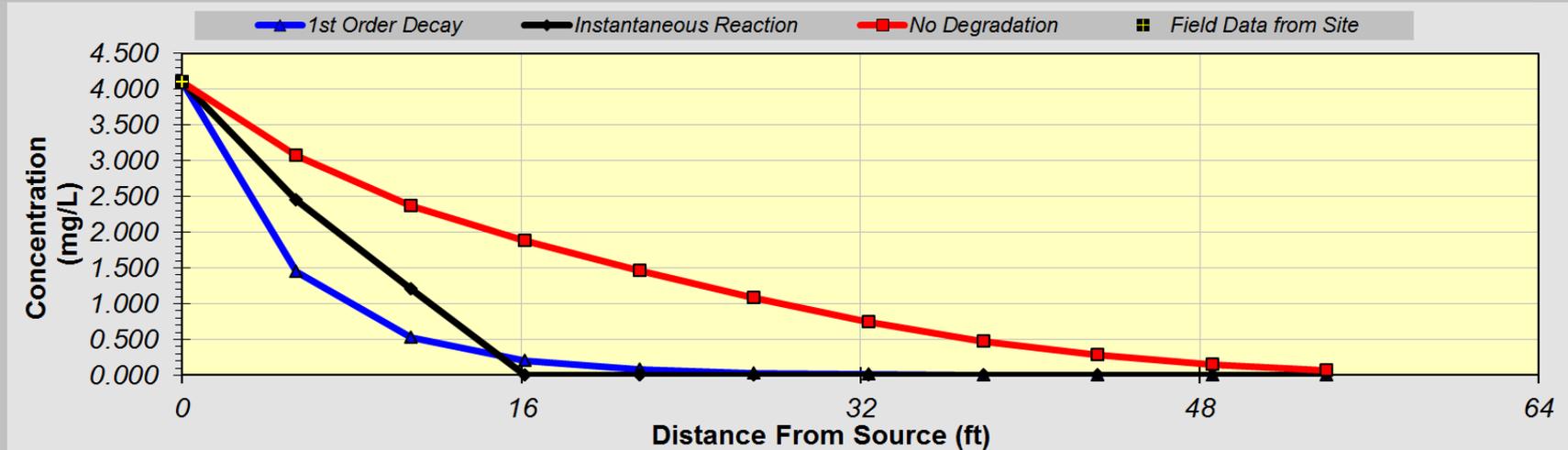
- **Use of Existing Information and Collected Additional Information to Support Closure**
 - Soil Conditions
 - Review of Chromatographic Patterns
 - Natural Attenuation Parameters
 - Collected Continuous Groundwater Fluctuation Information
 - Perform Recovery Test in Wells
 - Distance From Well B144MW0300 to Strait – 54 feet
- **Use Bioscreen Model to Predict TPHd Concentration at Mare Island Strait**
 - TPHd concentration at Point of Compliance (Mare Island Strait) = 157 µg/L < Tier 2 Screening Level (640 µg/L)

Building 144 – Bioscreen Results

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	5	11	16	22	27	32	38	43	49	54
No Degradation	4.100	3.067	2.367	1.875	1.456	1.078	0.747	0.479	0.281	0.150	0.072
1st Order Decay	4.100	1.448	0.526	0.204	0.082	0.033	0.014	0.006	0.002	0.001	0.000
Inst. Reaction	4.090	2.449	1.207	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	4.100										



Calculate Animation

Time:

100 Years

Return to

Recalculate This

Building 144 – Path Forward for Site Closure (Continued)

- **Use Modeling Data Plus Low Threat Underground Storage Tank Closure Policy Guidelines to Evaluate Closure Conditions:**
 - Release is Within An Area of Public Water System Use
 - ❖ City of Vallejo Municipal Water System
 - ❖ Shallow Groundwater – Exception for Use as a Domestic Water Supply
 - Release Consists Only of Petroleum (TPHd)
 - Release Has Been Stopped
 - ❖ OWS and Contents Have Been Removed
 - No Free Product
 - Secondary Source Removed to the Extent Practical
 - No Methyl-Tert Butyl Ether (MTBE) or Benzene
 - No Nuisance Conditions Exist
 - Low Threat to Public Health and/or Environment
- **Summary Report and Request for No Further Action at Building 144 – Submitted to Water Board and Currently in Review (DTSC Deferred)**
 - May 2, 2016

IR03 Area



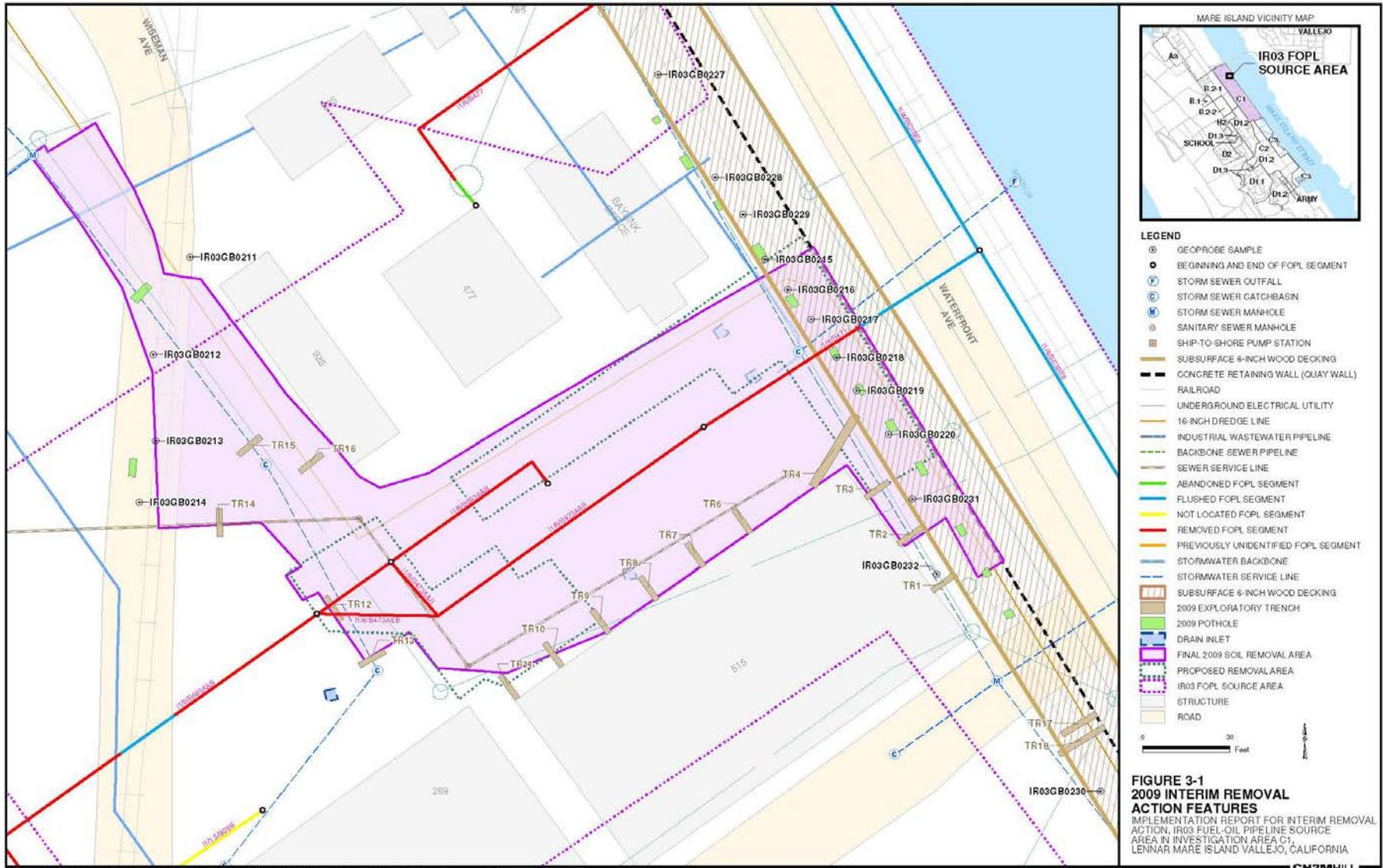
\\CH2M\PROJECTS\VALLEJO\MARE_ISLAND\PROJECTS\IR03\IR03_SOURCE_AREA_MAP_11-19-2008_10:44

CH2MHILL

IR03 – Description and History

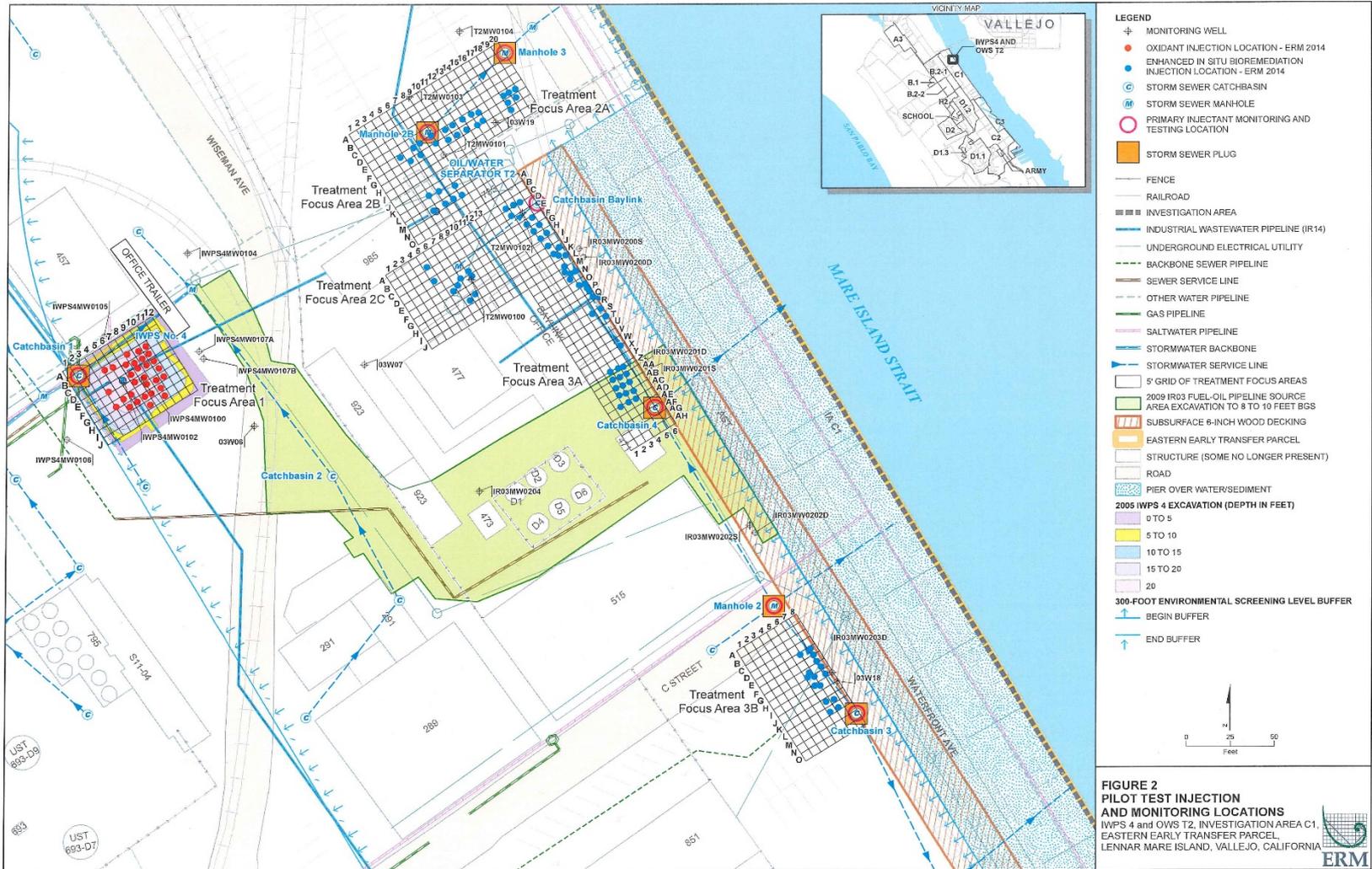
- **Non-Source and Source Areas**
 - Non-Source Areas Granted No Further Action (NFA) Status by Regulatory Agencies in 2008-2009
- **Source Area - Multiple Environmental Sites**
 - Similar Petroleum Hydrocarbon Sources
 - ❖ IR03 Source Area
 - ❖ Underground Storage Tank (UST) 693 Site
 - ❖ Former UST 541
 - ❖ Numerous Aboveground Storage Tank (AST) Sites
 - ❖ Numerous Fuel-Oil Pipeline (FOPL) Segments
 - ❖ Former Diesel Plant (Former Building 471)
- **Investigation and Remediation Activities**
 - 1983 – Ongoing
 - 2009 – Removal Action
 - ❖ 10,500 Tons of Contaminated Soil Removed from a 21,600 Square Foot Area
 - ❖ Excavation Depths Varied from 8 to 10 Feet Below Ground Surface
 - ❖ Subsurface Wood Decking Did Not Allow Cleanup Goals to be Achieved for All Sample Locations
 - 2015 – Pilot Test Implementation
 - Injection of Chemicals to Break Down Petroleum Hydrocarbon Constituents
 - Continued Groundwater Monitoring

IR03 Source Area– Removal Action Excavation



\\GALLUP\PROJ\MARE_ISLAND\26424\NODSSOR_FOPL\03\IR03\IR03C1_INV_TRENCH_FINAL_REM.MXD EQL:AKR 1/12/2011 10:35:48

IR03 – Pilot Test Injection Locations



C:\GIS\LM\ArcMap\workspace\remedy\MAPFILES\IR03_IWPS\12\ERM_Pilot02_RADIUS_OF_INFLUENCE_GRID.mxd OilShrinker 10/20/2014 2:45:15 PM

IR03 – Groundwater Condition Summary

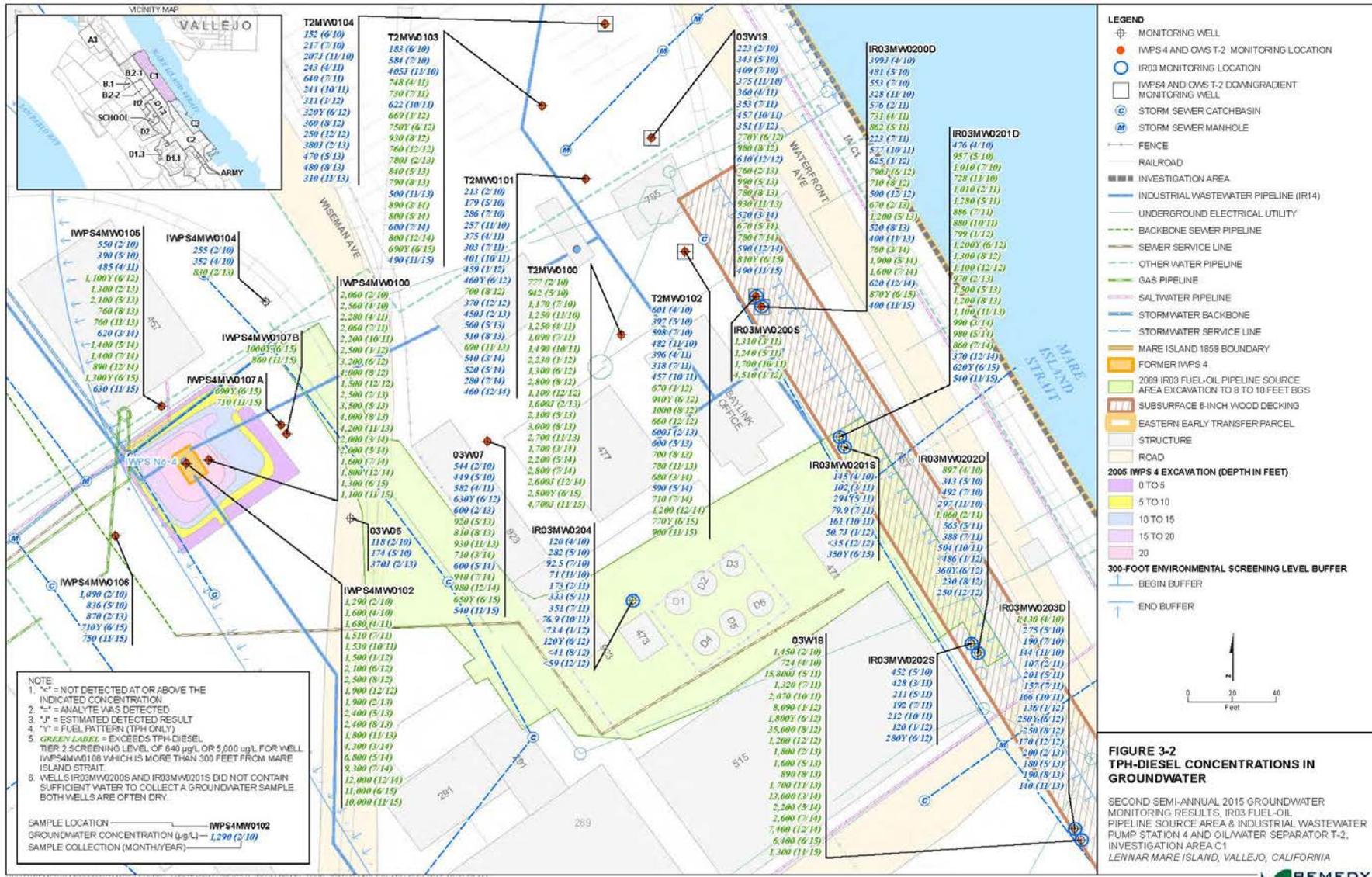


FIGURE 3-2
TPH-DIESEL CONCENTRATIONS IN GROUNDWATER

SECOND SEMI-ANNUAL 2015 GROUNDWATER MONITORING RESULTS, IR03 FUEL-OIL PIPELINE SOURCE AREA & INDUSTRIAL WASTEWATER PUMP STATION 4 AND OIL/WATER SEPARATOR T-2, INVESTIGATION AREA C1, LEWNAIR MARE ISLAND, VALLEJO, CALIFORNIA



IR03 – Path Forward for Site Closure

- **Review Existing Information and Collect Additional Information to Support Closure**
 - Soil Conditions – Use Boring Logs
 - Review of Chromatographic Patterns
 - Natural Attenuation Parameters
 - Collect Continuous Groundwater Fluctuation Information
 - Perform Recovery Test in Wells
 - Distance From Wells to Strait
- **Use Bioscreen Model to Predict TPHd Concentration at Mare Island Strait**
- **Proposal: Use Modelling Data and Use Low Threat Underground Storage Tank Closure Policy Guidelines to Evaluate Closure Conditions**

Questions?

Acronyms and Abbreviations

- $\mu\text{g/L}$ – Micrograms per Liter
- AST – Aboveground Storage Tank
- BTEX – Benzene, Toluene, Ethylbenzene and Total Xylenes
- DTSC – California Department of Toxic Substances Control
- EETP - Eastern Early Transfer Parcel
- FOPL - Fuel-oil Pipeline
- IA - Investigation Area
- IR – Installation Restoration Program Site
- MTBE – Methyl-Tert Butyl Ether
- NFA – No Further Action
- OWS – Oil / Water Separator
- PAHs – Polycyclic Aromatic Hydrocarbons
- SAP – Sampling and Analysis Plan
- TPHg – Total Petroleum Hydrocarbons as Gasoline
- TPHd – Total Petroleum Hydrocarbons as Diesel
- TPHmo – Total Petroleum Hydrocarbons as Motor Oil
- UST – Underground Storage Tank

Attachment 4. Weston Solutions Mare Island Update



Mare Island RAB Update

May 2016

DOCUMENT STATUS

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

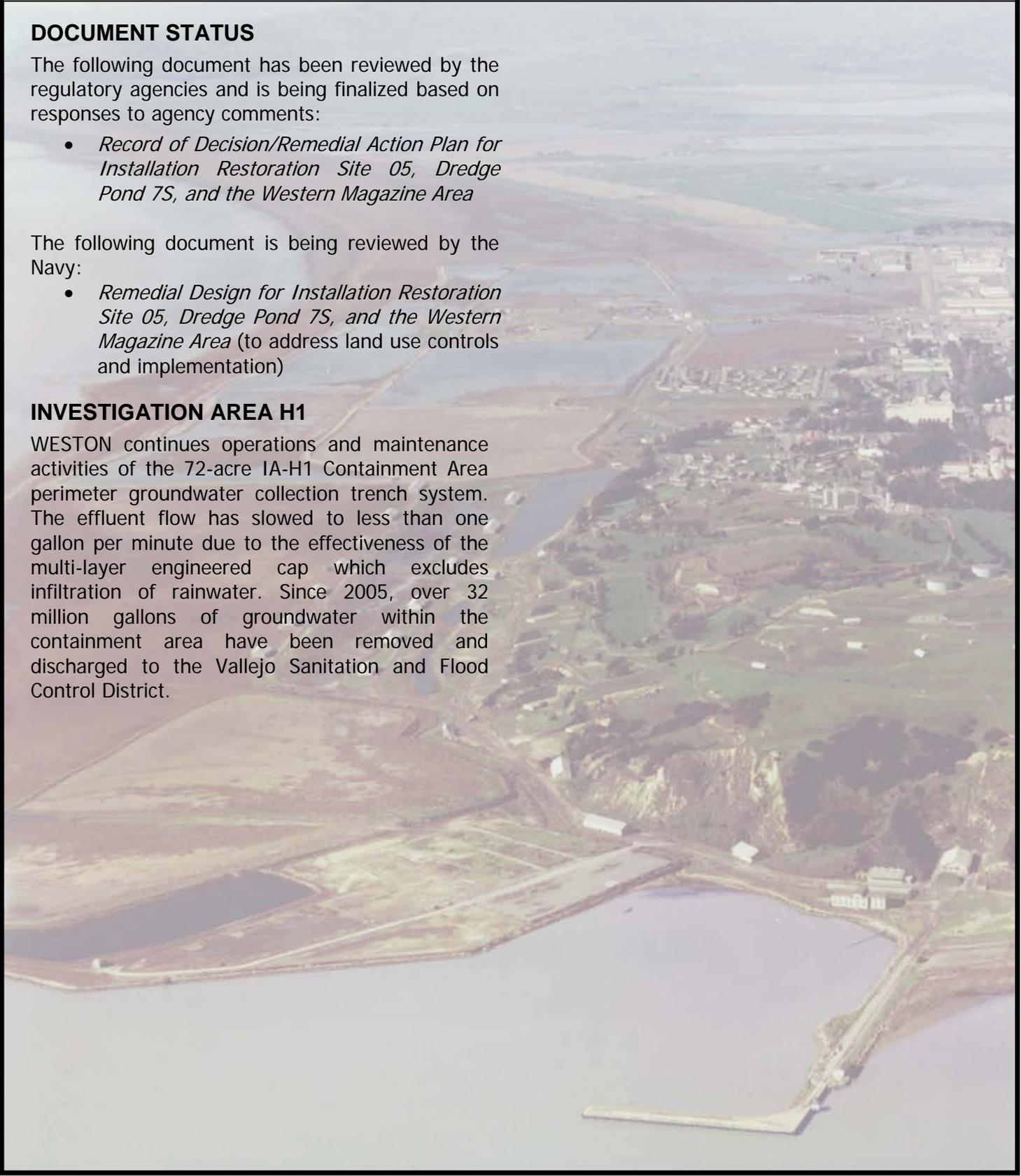
- *Record of Decision/Remedial Action Plan for Installation Restoration Site 05, Dredge Pond 7S, and the Western Magazine Area*

The following document is being reviewed by the Navy:

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

INVESTIGATION AREA H1

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



**Attachment 5. Navy Monthly Progress Report May
2016**

Navy Monthly Progress Report



Former Mare Island Naval Shipyard

May 26, 2016



USS Caiman (SS-323), Mare Island, Spring 1951

1.0 INTRODUCTION

The Department of the Navy (Navy) prepared this monthly progress report (MPR) to discuss environmental cleanup at the former Mare Island Naval Shipyard (MINS) in Vallejo, California. This MPR does not discuss cleanup work by the City of Vallejo or its developers, Lennar Mare Island and Weston Solutions, through the Environmental Services Cooperative Agreements (ESCA). The work completed through those agreements this month is reported separately. This MPR discusses progress made during the reporting period from April 29, 2016 through May 26, 2016. The information provided in this report includes updates to fieldwork and removal actions, document submittals, the progress of regulatory reviews, issues associated with Navy environmental programs, and Base Realignment and Closure (BRAC) Cleanup Team (BCT) and Restoration Advisory Board (RAB) meetings.

2.0 FIELDWORK, REMOVAL ACTIONS AND UPCOMING EVENTS

During the month of May 2016, the Navy performed the following field work at Installation Restoration Site 17, Building 503 Area, and Investigation Area F1.

Investigation-Derived Waste Disposal

Three 55-gallon drums of investigative-derived non-hazardous waste generated from investigation activity at Installation Restoration Site 17 and Building 503 Area were transported off-site for disposal. In addition approximately 1,300 gallons

of non-hazardous liquid and 5 cubic yards of hazardous waste soil and concrete generated in Investigation Area F1 from Polychlorinated Biphenyl (PCB) remediation activity were transported off-site for disposal.

Investigation Area F1 (Buildings A71 and A142)

The Navy anticipates performing field work as part of an ongoing cleanup process for PCBs in June at Building A71 and Building A142. Additional concrete characterization samples will be collected at Building A71. Additional PCB-impacted soil will be removed and verification samples will be collected at Building A142.

3.0 DOCUMENT SUBMITTALS AND PROGRESS OF REGULATORY REVIEW

The Navy submitted the following documents during the reporting period, listed below:

- South Shore Area Letter Requesting Exception from Drinking Water Policy

The Navy received comments or concurrence from regulatory agencies on the following documents during the reporting period:

- Comments received from the Department of Toxic Substances Control (DTSC) and San Francisco Bay Regional Water Quality Control Board (Regional Water Board) on the Draft Action Memorandum South Shore Area (Unexploded Ordnance [UXO] 7) Shoreline Munitions Time-Critical Removal Action (TCRA)

3.0 DOCUMENT SUBMITTALS AND PROGRESS OF REGULATORY REVIEW (continued)

- Response received from the DTSC and Regional Water Board on the South Shore Area TCRA Applicable or Relevant and Appropriate Requirements (ARARs) Request Letter
- Comments received from the Regional Water Board on the Draft Remedial Investigation/Feasibility Study Report for Installation Restoration Site 4

4.0 REGULATORY REVIEW: YEAR-TO-DATE PROGRESS

The documents presented in the following table include only documents that address sites where the Navy remains responsible for the cleanup work.

Number of Documents Submitted by the Navy	8
Number of DTSC Comments Received by the Navy	10
Number of Regional Water Board Comments Received by the Navy	12
Number of EPA Comments Received by the Navy	2

BCT meetings are held regularly with the Navy, DTSC, Regional Water Board, and U.S. Environmental Protection Agency (EPA) to discuss the progress of environmental cleanup at MINS. The next BCT meeting will be held on July 28, 2016.

NAVY CONTACT INFORMATION

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RESTORATION ADVISORY BOARD MEETING SCHEDULE

The RAB meets the last Thursday of every other month, **unless otherwise noted in bold**. The next RAB meetings are scheduled for:

- July 28, 2016
- September 29, 2016
- **December 1, 2016**

Meetings begin at 7:00 p.m. and are held at:
Mare Island Conference Center
 375 G Street, Vallejo, CA 94592