MARE ISLAND NAVAL SHIPYARD
RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES
HELD THURSDAY, MARCH 03, 2005

The Restoration Advisory Board (RAB) for former Mare Island Naval Shipyard (MINSY) held its regular meeting on Thursday, March 03, 2005, at the J.F. K. Library, Joseph Room in Vallejo, California. The meeting started at 7:08 p.m. and adjourned at 9:15 p.m. These minutes are a transcript of the discussions and presentations from the RAB Meeting. The following persons were in attendance during this month's RAB meeting.

RAB Members in attendance:

- Myrna Hayes (Community Co-Chair)
- Kenn Browne (Community Member)
- Mike Coffey (Community Member)
- Jerry Karr (Community Member)
- Paula Tygielski (Community Member)
- Jerry Dunaway (Navy Co-Chair)
- Alec Naugle (San Francisco RWQCB)
- Cris Jesperson (Weston Solutions)
- Dwight Gemar (Weston Solutions)
- Michelle Trotter (DTSC)
- Carolyn d'Almeida (DTSC)
- John Lucey (U.S. EPA)
- Sheila Roebuck (Lennar Mare Island)
- Steve Farley (Lennar Mare Island)

Community Guests in attendance:

- Jim Robbins
- Tommie Jean Damrel
- Mark Kleiner
- Claudette Altamicano
- Bill Karlovitz

RAB Support from CDM:

- Regina Clifford
- Doris M. Bailey (Stenographer)
- Wally Neville

I. WELCOME AND INTRODUCTIONS

CO-CHAIR DUNAWAY: Good evening, welcome. We have a good program for you tonight. This is something that we were planning to do back in January and there was something mailed out back then. I should have reminded you all you need to bring or review that document from over a month ago. But in any event what we have tonight for our main program, if you will, or the presentation for your technical assistance support, Dr. Rhea Williamson and June Oberdorfer from San Jose State University. And they will be presenting their review comments of the draft area H1 feasibility study. But let me start with introductions. My name is Jerry Dunaway, I'm the BRAC environmental coordinator for the Navy as well as the Navy co-chair of this Restoration Advisory Board. And I'll pass the microphone around for your introductions.

(Attendees introduced themselves as requested.)

II. PRESENTATION: *Technical Assistance Review Comments of the H1/Landfill Remedial Investigation and Feasibility Study.*
Presented by Dr. Rhea Williamson and Dr. June Oberdorfer

CO-CHAIR DUNAWAY: So without any further ado, why don't we bring up June and Rhea and listen to their presentations.

DR. OBERDORFER: Is it possible to get it a little darker in here? Okay. We have this lovely blue aquatic background I hope you can see. It sounds like just going around the room that most of the people in this room are really familiar with this project, probably a lot more familiar than either Rhea or I are. But we did want to bring in our perspective and particularly point out what are some of the issues that the RAB members should be thinking about as they go through this FS approval process.

We were hoping if, as we go through this presentation, if you have questions that, for clarification about things we say, then please just stop us as we're doing it. If there are more issues that have to do with more of in-depth discussion, if we can kind of hold that off to the end until we kind of go through the whole presentation. We did have, hopefully the RAB has gotten by now some of our more detailed written comments. And I forget if, they were eight or ten pages or so. So this is kind of an overview of those. We'd refer you back to those written comments for the details.

So what we hope to do with this presentation is go over for the RAB's benefit our interpretation of this draft feasibility study for this area H1 at Mare Island. And this has been prepared by Weston Solutions and submitted to DTSC, which my understanding is the lead agency on this. So clearly there are a number of other state and federal agencies that have a lot of interest in this project, and they're present here tonight.

So this feasibility study has broken this area H1 up into three main areas, and evaluated approaches to cleaning up this site. So you're all familiar, it's a long number of years now that we've been studying this site, or you've been studying this site and, you know, now they're coming to the point of how are we actually going to approach this to clean it up? And the three areas that the site's been broken down into, one is what's called the containment area that contains the old landfill referred to as the RCRA landfill, and some surrounding areas that were also heavily impacted.

The second area is what's referred to as the upland areas. So these are land areas outside of the containment area. And then the third one is the wetlands, the non-tidal wetland areas that are adjacent. So just to orient yourself, we, I guess, are over here somewhere. And so this is the part of the island that is, constitutes this area H1. It's this area outlined here, San Pablo Bay out in this direction, the City of Vallejo over here. And this is a closeup. And this is where I can point out where these different areas are.

The blue line that surrounds here is this containment barrier. Everything within that is within this containment area. Here you can see the old RCRA landfill. There are a series of other areas that were considered heavily contaminated, particularly one area up through here that's, part of it's been excavated and put within the containment area.

Outside of this blue or purple line you can see there land area shown in white, those are the upland areas. And then the areas that are grayed out are these non-tidal wetlands that are part of the same study.

So what was done in this feasibility study is to come up with a series of alternatives that are evaluated, and trying to choose which is then the best approach to be taken. And in this case for this containment area, so this is the area that's considered to have the most, to be the most highly contaminated area, they've come up with three alternatives. This is a table taken straight out of the FS that is used to evaluate these different alternatives.

And let me just go first through what these alternatives are. So I'll read across the top. And then we'll look at the different criteria that were used to evaluate those alternatives. So the first alternative is a standard one to use is a no action alternative. This is sort of a baseline. If we go out, or we don't go out, we don't do anything, what will be the consequences of that? And serves as a point of comparison then for evaluating the other approaches.

Alternative two is essentially, it's referred to as capping with a vertical barrier. If you could think of this contaminated region as my fist here, what they want to do is essentially build a box around this contaminated area and put a lid on top of the box. So this contaminated area is still there, but it's been contained. And then the third alternative is removal with, of the contaminants, and then disposal off-site. So those are the three alternatives that are being evaluated.

The evaluation criteria are actually clearly set out in regulations. The first two are sort of qualitative, but they're sort of drop dead evaluation criteria. If you don't pass these then the, that particular alternative is unacceptable. So the first one, you know, being that, does this particular alternative protect human health and the environment? The second one, does it comply with what are called ARARs, applicable or relevant and appropriate regulations or requirements. These are sort of the regulatory statutes that have to be met by this particular solution.

And if you go through here it sort of comes as no surprise, alternative one, not doing anything, is not acceptable. Doesn't, is not protective of human health and the environment, and it doesn't meet the regulations.

The other two alternatives, either containing it or removing it completely then will meet, be both protective and meet those requirements. And then the second step of criteria that are used to evaluate are evaluated on a numerical basis, and the one that gets the lowest score wins, so it's a little different than playing basketball. And these ones are long-term effectiveness, reduction of toxicity, mobility or volume. Short-term effectiveness, implementability, and cost. And they're given sort of a rating score about which of these is going to be the best of the possible solutions. And in terms of long-term effectiveness, completely removing it, in other words, getting it removed away, there's no contamination, or the bulk of this has been moved off-site to another disposal facility is the most effective when you're looking over the very long term. Second would be containing it. And then no action is the least effective. So you can sort of see you go from one, two, three. In terms of reduction of toxicity, mobility, volume, they all get lousy scores. And I think the rationale for that is, you know, here there's clearly no reduction if you

don't do anything. Here you haven't reduced the toxicity or the volume because you've left it all in place.

And with the third one the idea is you haven't really reduced it, you simply moved it somewhere else. I will point out that you have at least reduced it on Mare Island. Short-term effectiveness. No action is a lousy alternative. But short-term, these are also implementability. Well, doing nothing is very implementable. Number two containing it, implementable.

And the least implementable, in other words, the one requiring the most effort and potential difficulties is number, this, actually removing it. In terms of cost, again doing nothing wins. The containment system is the middle one. And then removing it, always by far the most expensive.

And these scores are numerically added up. And when it comes down to it the scores aren't terribly different, ten here, eleven, and eleven. Since this no action one doesn't meet the basic minimal requirements, that's essentially discarded. And we're left with these two, this being slight preference over that one. So this comes out number one, number two, number three. This then becomes the preferred alternative.

So this is sort of the picture of this area. It was evaluated in the remedial investigation. We have three water bearing zones, a shallow, an intermediate, and deep water bearing zones. These are sandier units, geologic units beneath the site. They're separated by clay or bay mud deposits that provide some isolation between these zones. And then there's some fill and some other material on the top. And within this RCRA landfill there's waste, both hazardous and non-hazardous waste that's been disposed of here. There was also waste that was disposed of outside of that RCRA landfill. And over time a mound of groundwater has built up, so much of this waste is saturated. I think this mound is, I can't remember the exact number, 30 or 40 feet high now, it's a pretty good-sized mound inside of this landfill.

So when you have mounding like that, there's a potential driving force to push water with dissolved contaminants out, and there's been migration here within this area. That's why they're proposing containing the groundwater. And there certainly is potential to dry this down. When they chose this landfill site they sort of unfortunately chose one where there was, the clay layers beneath the landfill to provide that separation were relatively thin compared to some of the other places on site. So there's also this potential for downward migration, and sporadically contaminants have been picked up in that lower, in the intermediate zone.

There's also potential because some of these, what you can't see there is some of the risk assessment numbers, so to evaluate what the risks are. And the first one there that's behind this is human health risk numbers. A cancer risk was 1,700 in a million. So the threat of cancer is that. That's actually quite an elevated number, and hence this idea that you really need, it's important to go out and do something. Non-cancer risk is 26 times the acceptable level. And then there were a series of ecological risks to wildlife that were identified, including from metals, particularly arsenic, pesticides, volatile organic compounds, and semi-volatiles. And that's what we're showing here that you can have volatilization of those compounds, and so there's an air pathway as well. So this is the preferred alternative.

So this is this containment system. So it's not a treatment, they've acknowledged really clearly, you're just, you're encapsulating this. And what's involved in this is to build a slurry wall. And it's my understanding that a lot of the slurry wall is already built. I wasn't really clear from the document if it's completely constructed, is that --

CO-CHAIR DUNAWAY: Yes.

DR. OBERDORFER: It is. You essentially dig a trench down. You want to dig it down so you're into this underlying impermeable zone so you can actually sort of key it into that so that the contaminants can't leak out. You backfill it with a really low permeability material, usually a clay material, an expanding clay with some soil. And it's like building an underground wall. And the idea is that this lower layer, this lower permeable layer is going to be the bottom to that box or containment box. So this has been built around. Have the extraction trenches also, they're also, are they operating now?

UNIDENTIFIED SPEAKER: Yes.

DR. OBERDORFER: Okay. In addition to that, a series of drains were put in. And one of the principal ideas behind these drains was to remove this mounding of water within that waste, within this containment area because, to limit this driving force for outward migration. So these drains are operating. They also provide a sort of really important other function which is to create a potential for inward flow to keep things from escaping. And eventually a sort of upward flow so you can minimize, while these drains are functioning you can minimize some of the other potential escape pathways.

The idea behind these drains for now is to operate them for two to five years, and that's because the view is that this primarily is to remove this mound. And I'm assuming that once that mound is removed then it will stop operating. The water from that that will be removed goes to, my understanding is it goes to the local wastewater treatment plant. So the idea behind this is that you can really minimize the risk by minimizing the way contaminants can get out, either to wildlife or to human health. In addition -- can you go back one, Rhea? I forgot the top of the lid. There's also a cover that goes on top here, a low permeability cover, a cap that will then prevent or minimize both the inflow of water and also contact with any waste.

What I wanted to stress to the members of the RAB is that this is really your window of opportunity now on behalf of the public in Vallejo, and present and future residents of Mare Island, to decide whether this preferred alternative is acceptable to you. The public acceptance part of the feasibility study process is a really important one, and there are very long-term implications of your reaction, your acceptance of whatever, or your selection of what you think that the preferred alternative should be at this site.

We looked at this and sort of came up with some arguments that we felt were either in favor or maybe argued against this. If implemented correctly, this system that's already largely in place can contain the waste components and it can minimize risk. Part of that is simply making sure that it is maintained, it is operated, and that it's properly monitored for the long term to make sure that the system is operating as it was designed to operate. It appears to have regulatory

acceptance. I had heard that from a regulator, but I assume since it's going ahead so actively it appears to have regulatory authority acceptance. It is cost effective and it can be implemented.

And lastly, a, obviously a significant portion of this is already in place, if not the entire system. Arguments against this particular approach would be that you're going to have a hazardous waste site in the middle of a recreational area. It's going to have to have fencing around it. It's going to have to have signage around it identifying that it's a hazardous waste site. And if that's something that you're willing to have in your community. There's a question about what happens once the system is no longer operated and maintained. Generally there's a thirty year post closure period, that's what's specified in the FS. What happens then after that thirty year period, to make sure the cover is maintained, to make sure, you know, monitoring, you know, presumably ends after that thirty year period? And lastly, along with this containment system there go a series of institutional controls, and that's going to limit future land use in that area.

So these are some of the sort of detailed issues, and I'll just go through these pretty quickly. These were some of the ones that we've gone into more depth in our written comments. And some of these don't necessarily have to be answered in the FS. The FS is more of a sort of conceptual scoping document. Although clearly, since it's already largely in place, there's been a design phase. Generally, and this is because, I guess, you've gone ahead as an interim solution. Often, you know, people would be approving this stage and then going onto the design phase. So you've sort of done it in a somewhat different order than it's usually done.

So some of the issues we came up with is just the fact that the groundwater extraction with all its benefits in terms of reducing that mound, of creating inward flow into that site, are only going to take place over a relatively short-term period. And so you're going to lose the benefits of that inward drainage after that two to five year initial period. Concerns would be that even though these caps that they put on top of landfills are relatively impermeable, ultimately there's probably some seepage through it. There's potential for return of that mound if you stop draining it out.

And you could have, again, that's sort of a driving force for flow going out again in the future. Again, the fact that you have vertical gradients reestablished if you do get that return of the mound. One of the questions that was just sort of indicated, and we also looked at the monitoring report, there's a water quality monitoring report. Part of closing a site like this is establishing what are called points of compliance. So these are points where you can actually monitor around the, this particular area to see whether your facility is working properly. And part of those having, they've come out in the, their monitoring plan with proposals for certain wells in certain areas where they're going to put these points of compliance wells.

What also needs to be done is setting action levels for these wells. And that's what was left pretty vague in the report. And how those action levels are set? And particularly, what sort of actions they're going to trigger. What if you get an exceedance of action levels at those points of compliance? Those are things you're all going to have, it's not part of this feasibility study now, but those are issues you're going to have to look for in the future.

There was actually, between the initial monitoring plan and I think the, in conversation with the regulators, they came back and modified that plan somewhat. Initially I don't think there were

any monitoring wells within the containment area, I think there are a couple of them now. Am I interpreting right some of the recent --

MR. GEMAR: Yeah, there's several now inside.

DR. OBERDORFER: There's several now inside, yeah. That's really good. I think monitoring both the water elevation to make sure that that mound has dissipated, that it's been removed, and also simply looking at a history of water quality. I'm not sure if that's part of the monitoring, maybe, I think it may just be for water levels. But knowing what's going on inside that containment area, so at the end of the thirty years you have some idea of what the sort of history, how it's evolved, what the situation is, would be a really important part of that monitoring.

Let's see. It would be really good to review the as-built documents from how the slurry wall was built. Did they really, were they able to assure all around the site that that slurry wall penetrated through the waste, through that shallow fill material, and was really actually well keyed into the underlying low permeability clay materials.

Landfill gas is one that was left very vague in the feasibility study report. It said it would be addressed in the design phase. There are a number of potential issues with landfill gas, everything from having methane buildup and having some sort of gas explosions where your landfill cap could be disrupted, to just VOC's, volatile organic contaminants seeping out through that cap. So, you know, how landfill gases are going to be treated is an important issue and one that was not really dealt with. I think I've covered most of those.

And other things just so that you have in mind when you're making your recommendations, are what are the actual institutional controls that are going to be put in place? What limits are there on access to the area, future development, use of groundwater? What sort of educational, you know, programs might be about? What's in this area? What sort of signs are you going to have to warn people of what's there? And also, you know, how long term are those institutional controls? Are those in place forever? Is there a time limit, at some point in the future at which they expire?

Other things are what are the long term maintenance plans for the cover? Again, there's always this thirty year post closure period, but that doesn't mean that the risk is going to go away after those thirty years. So, you know, what happens that would prevent that from eroding away, from sort of having a return of some greater risk or greater problem in the future, how might that be funded? And my assumption is there's this thirty year post closure, what happens after that?

And just a real close look at the monitoring data or monitoring plan that gets set up both in terms of water quality and also water quantity inside this containment area, so that you have some idea what happens at the end of that thirty year post closure period. And, you know, what sort of things if you still see a potential risk at the end of that post closure period, are there any provisions for monitoring or action beyond that period?

So those are some of the things that as you go through this would be questions to ask to Weston or the Navy or in conjunction with the regulators to try and get clarification. So Rhea is going to go on, she's going to talk about the other two areas.

DR. WILLIAMSON: Great, thank you, June. So I'm going to start in first with the upland areas. And so we have a similar sort of table right out of the FS. And I'll show you a couple of maps in a moment to reorient you. And so I thought I would take this opportunity to remind you with respect to these upland areas that in the remedial investigation there was a, throughout the areas, carcinogenic risks, and those were primarily for child recreation users to arsenic, to lead, to aroclor 1260, to benzyl pyrene at various locations throughout the site, throughout the upland areas on the site.

There were adverse health effects which are non-cancerous to the same child recreational users for arsenic, lead, and aroclor 1260. There were ecological risks to a wide, a large number of metals and pesticides and PCBs, polychlorinated biphenyl compounds, DDT and DDD, mercury and selenium and copper and chromium and etcetera. And these were actually elevated in the various organisms like earthworms and in the soil and in the plants that eco-receptors would ingest. So throughout that upland area these sorts of contaminants had been identified. And so in response to that, of course, the idea is to be protective of human health and the environment in these assessments.

So once again, using the same format for the community members present, we've got the various alternatives across the top, the evaluation criteria. And I won't go through in as much detail as June did because she set it up so nicely for me. But basically once again you have the no alternative, the no action, excuse me.

Then we have what is referred to as a hot spot removal. And this is with a two foot cover of soil that will be spread across the top of the hot spot removal. And there's a big difference in the amount of soil that's actually moved in these different alternatives. I'm sort of throwing out a couple of numbers, I don't know if you're writing them down, but they're actually very nicely detailed in the report, in the FS.

But in this alternative two you're looking at about 32,000 cubic yards of soil being moved, being removed and placed on, placed into the area June just described, the containment area. And then alternative -- so alternative two has got 32,000 cubic yards.

Alternative three has a more limited hot spot removal, so not all of the areas of elevated contaminants of concentration are actually removed, but the number is still quite, and it's 23,000 cubic yards, so that's compared to the earlier 32,000 cubic yards. And again, you get two feet of cover on top of that, those excavated areas. And then alternative three -- where am I here? Okay.

Alternative four, rather, is an actual upland excavation area. And what happens here is that there are about 925 cubic yards of toxic material that are removed, and then there's what's called the debris excavation. So throughout the entire area, the upland area, but there's no two feet of cover placed on top of that. So the soil is basically the top layer, and the debris in that top layer is excavated to the equivalent of 322,000 cubic yards placed in that containment area, and then no soil cover placed on top. So once again, you can see that there's this ranking in terms of long-term effectiveness. We'll just kind of, you can see that for the first two they all meet except for no action alternative. In terms of long-term effectiveness, the most effective mechanism or the most effective alternative is going to be to remove, to actually remove all of the debris on the

surface, the top layer there of the upland areas. And then the alternative hot spot removals are ranked approximately equally.

In terms of the reduction of the toxicity and mobility, there's these numbers, they may be, I have to ask Weston to explain more, but this is more, very effective to actually remove the hot spots and then put the cover on, the two feet of cover, because you're basically, if there's any remedial or residual material left, it's underneath two feet of cover so that any recreators or any children on the site, the potential for erosion, the potential for wind induced dust, etcetera, isn't mobilizing that material. Whereas, as you can see in terms of upland excavation, you do still have the potential for mobility because you don't have that cover.

And so you can go back through and see, you know, you can go through all of these different evaluation criteria, and you come to this ranking with the preferred alternative here being to do a limited hot spot removal and put two feet of cover over the area. So if we go to the next slide we'll be able to see a figure right out of Weston that shows you, and I know this is really small and there's another one coming up but, another slide that's a blowup coming up, but this is showing you the entire area. Here's again the containment area. And you'll remember the white areas are the upland areas outside of the containment area that we're talking about. And then these kind of a hatched greenish area are the wetland, non-tidal wetland areas we'll be talking about soon. But I put this in here because I wanted you to be able to see all these little dots, these spots which are basically showing you where a variety of different contaminants were actually monitored and noted as being of concern. And then if we go to the next slide you can see, once again, the blue containment area, excuse me, and -- oh, gee. The areas for hot spot removal, and now I have to find the little red box, are fairly limited. There's one right in here. And this is for the preferred alternative, so there's a little section right in here. And I believe that's it. So very few, very small area for excavation.

Now this is actually something that came out of the RI that shows you when we did an assessment of sediment soil and subsurface soil we looked at the percentages of the subareas that had these variety of contaminant types. So this was more a reminder of the fact that there are a variety of different contaminants that are spread out throughout the site. So in here you're looking at metals that were, a hundred percent of the subareas had concentrations that exceeded the screening levels, and in the sediments somewhere around 75 percent. So again, for surface soil and subsurface soil we're looking at fairly high numbers for the metals, for the PCBs, we're looking at about 90 percent etcetera. And that slide is, just again, to point out that there's a fair amount of contamination throughout the site.

And next slide. Then kind of summarizes some of what we have already written in our report which is to describe, again, arguments in favor of the proposed alternative, which is, again, to do a limited hot spot removal with two feet of cover. And so in this alternative you're going to have contaminated soil stabilized and covered with clean soil, so you reduce exposure in that way. Again, this is assuming that there are controls at the site such that there isn't any digging, there's not any dirt bike, I don't know if dirt bike riding ends up going below two feet, but none of that sort of activity that might expose the soil below. You've really reduced the erosion which would, again, mobilize contaminated soil. And it's cost effective. It could be implemented.

In terms of arguments against the proposal, there has been some, in our comments on the RI we had noted a number of different areas that we thought needed additional sampling. There's been some limited soil monitoring in areas of the upland sites that could result in hot spots not being noted and, therefore, not being removed. The plans for monitoring and maintaining integrity of the soil of that two feet cover really need to be specified. I think June also, June's made the point that we're looking, well we don't really know how far out that upland area outside of the containment area will actually end up being monitored, and how it would be being maintained over the life of the site.

And then something that I found interesting was the way all of the different wastes, whether they're metals or PCBs or the aroclor, they're all treated the same, which is to excavate, excavate them and then to place them inside a containment area where they, if they do, and then, of course, to cover them. And then, of course, if they are mobilized by whatever mechanism allows them to move, they're contained because of the slurry wall. And if they're mobilized in water they're picked up in the trench and transported to treatment. So there's some mechanism of, of managing those wastes.

But there seems to be an all or none approach that may or may not be the only approach to consider. I mean if you are, if you are removing soil that's contaminated with something that's a carcinogen that is of concern, especially, you know, if you're looking at smaller volumes, transport those to properly constructed hazardous waste landfill that has a liner and a leachate collection system, and that has all of the different regulatory compliance -- and what am I thinking? -- monitoring mechanisms in place already.

And especially since the management of that containment area is unclear after a thirty year period, what is, again, going to happen to that landfill after thirty years? We've just put all these contaminants that we were excavating in there when, again, the alternative of possibly moving them, yes, off-site, but to a site designed for them might be something to consider.

And then we have this issue of institutional controls that limit the flexibility of the land in the near future being something that the community certainly might want to consider in their decision process. There were a number of other issues that came up in our review of the FS, including issues related to subsurface gas migration as gas is reformed from buried material as it degrades.

There are a number of organic compounds that as they break down, even those that are generally considered toxic to bacteria, to soil bacteria, there's a wealth of literature that shows that over time these do break down, and oftentimes they form even more toxic compounds. And some of those are volatile.

Well, some of this concern of subsurface gas migration should be addressed. The migration of dissolved contaminants to the wetlands that are adjacent to the upland areas. Because, again, these upland areas are not within a containment barrier, they don't have the advantage of a slurry wall and collection system. And then the hot spots screening and excavation issue that I've mentioned already.

And long term monitoring of the site. I think it's probably really important for the community to really spend some time thinking about these issues and to ask the questions that are on the next, some of which are on the next slide.

Again, how will these, how will future contamination be monitored? What are the mechanisms for reducing future erosion and transport of surface soil, including the surface soil that's being applied as a top layer? Again, what about taking those hot spots and excavating them and sending them elsewhere? And there's a fair amount of free product in some of these upland areas, a number of 40 million gallons of oil, is that correct? 40 million gallons?

CO-CHAIR DUNAWAY: 4.5.

DR. WILLIAMSON: 4.5 million gallons.

MR. GEMAR: That was inside the containment area.

DR. WILLIAMSON: Okay. Thank you. Thanks for clarifying that. But there are some free products that I don't know now if they're now, if I have this right, if there are any outside of that containment area, but the excavation depth is based on the presence physical free product, okay, and this was in the upland areas. So there was visible free product. And I questioned that because there are a number of mechanisms of doing soil gas vapor, if there was purgeable hydrocarbon sensors that you can use to help make sure that you're actually excavating below levels that are considered harmful.

I know in work that I've done with excavating gasoline contaminated soil, for example, that was certainly the mechanism that we used. So why not use a really simple, an easy to use process for actually determining that you are excavating low enough rather than just relying on whatever that means, visible product. Then there was a fair amount of discussion about the use of the process of stabilization and solidification for the soils that are excavated from these hot spots. So these soils have a variety of different contaminants in them. And so typically what one, what can be done is you can mix these soils with moisture and with usually some sort of a concrete based material. It can vary. There's silicon base, there are clay based, a variety of different clay based. But what you're basically trying to do is to bind the material into this matrix that it is, that immobilizes the contaminant, and then you can dispose of that.

And yet this method, this mechanism of stabilization and solidification isn't effective for all of the different contaminants, but it's the only one that is, that was considered for the soil excavated in the upland areas. So I suggested that there are some other mechanisms that might be considered. This solidification, excuse me, stabilization solidification could be effective for the PCB and metal containing contaminated soils, not necessarily so for any of the petroleum hydrocarbons.

And again, ask the question of, again, is it in the best interest of the longevity of the site, of keeping the contaminants or protecting the receptors that might be on the site in thirty years or forty years or fifty years from the excavated material by taking it to a class four landfill that's designed for hazardous waste.

So these are some of the questions about the upland areas that might be considered by the community as you move on through this process. If you then go to the non-tidal wetlands, once again, just to kind of remind everyone that there are, again, a variety of carcinogenic and adverse health effects or health risks associated with the non-tidal wetlands, including some of what I mentioned before, arsenic, lead, some of the PCBs, and most of these are again to the child recreational user. And there's ecological risk that's been identified for the salt marsh harvest mouse, a variety of birds. And these are, these eco risk receptors are impacted by consuming plant material, earthworms, invertebrates, other mammals that are living on the site and that are exposed to these contaminants. And so again then, they adjust these organisms.

So those are some of the, sort of what the RI uncovered. And so again, in looking at the non-tidal wetlands, one would try to come up with a plan to reduce the potential for impacts from those contaminants. And once again, what we're seeing here is the no action alternative, I'm sorry, the -- yes. The hot spot removal.

And this is followed by sediment monitoring. So sediment is the material, the soil water in the base and below. So when you think about the wetlands you want to be able to isolate sediment from soil. So hot spot removal here. And that's somewhere, that's about 2,700 cubic yards being considered for alternative two.

And then alternative three is to actually excavate entirely those wetlands, the sediments in the wetlands, and that's about 248,000 cubic yards of material. And then, of course, removing those soils into the contaminated area.

So again, in terms of long-term effectiveness, the actual total excavation is the most effective, but you'll also see it's the most costly. And that's associated with the fact that it has such, 2,700 versus 248,000, it's a lot more soil or sediment to excavate and remove in this alternative three.

You, we can also see that in this particular ranking for toxicity, mobility, and volume, the wetland excavation is considered the preferred alternative. And again, this is because that material is excavated and then brought to the containment area and buried under the soil cap in the containment area.

So I think again when you look at these ranking numbers here, the hot spot removal with limited sediment removal to the containment area, and then sediment monitoring is the preferred alternative followed by the wetland excavation. And if you look at the next slide you again can see, let's see, we've got wetland A and there are some areas here. We've got wetland B, and there's a fairly high amount of Terbutaline in this area, and other contaminants in wetland C and wetland D that in the total in alternative three, where the sediments will be excavated, that will be for all of these hatched green areas.

And then in the next slide, in the hot spot removal you're looking at this one little, it's hard to see, but it's a red box area here, and then there's another red box area down here that would be slated for excavation and removal to the wetland area.

So some of the, when we really looked at the pros and cons for these -- we can go to the next slide. And again, this is for the proposed alternative where we just remove those two little areas

of sediment in the wetlands, and then monitor the wetlands afterwards so there's no capping or anything like that.

We see that there's minimal disturbance of the habitat, the wetland habitat, which is a good thing given that there are some endangered species, the salt marsh harvest mouse and others. It is cost effective, and it's implementable. However, there are some concerns about hot spots that aren't going to be excavated, and there are some concerns about institutional controls to limit the land use in the future, and there are some concerns about just how the, the system is going to be managed during and after that, the period of use now and after thirty years.

If we look at the next slide, the highlighting are comments, just again, some of the issues that the public may, the community may want to address like, again, some of the wetland excavation, leaving hot spot areas in place. There's a decision to leave the manganese hot spot in place. And in some ways, if you go back to the RI and our comments to the RI you'll see where we point out in the wetland areas large areas of the wetlands that were never monitored, there were no monitoring samples taken. For example, in wetland B, except for around the periphery of the roadways. And so this is one of our concerns about possibly leaving these hot spots in place.

There's, there are a number of mitigation wetlands that are provided in the alternatives, and there's some question about the design. It's not very well laid out and, of course, it isn't expected to be necessarily in this phase of the FS, but that will need to be looked at very carefully.

And of course, monitoring the wetland areas, as June mentioned, again that's going to be very important. What is going to be monitored and where is it going to be monitored? And there's, there seems to be this concept that because certain of the contaminants of concern, soil to soil particles, and are, that they stay soil to soil particles in perpetuity.

And what the eco risk is showing you is that, in fact, many of these metals, when they are absorbed or bound to clay particles and buried in the sediments, if there isn't any disturbance of those sediments, then that may very well, it may very well be that those metals will stay there for an elevated period of time.

But aquatic chemistry and poor chemistry, poor water chemistry, the chemistry of the water between the interstites of the clay particles is such that if the water has a low concentration of the metal, then there will be a desorption of the metals. And also earthworms and various micro invertebrates and invertebrates in the soil and sediments often ingest the soil in order to strip off the organic material, which is mostly bacteria and other organisms, and they ingest that soil and, through their gut.

And so any of you who fish know when you see those little mounds that looks like wet clay where the earthworm went in, those are the castings of the earthworm where it's ingested the soil and it's comes back out their anus and made those little piles. Well, their gut is acidic just like ours is. And if you put metal in acid it's mobilized and it's desorbed in that.

So there are procedures that allow for the transfer of these contaminants back into the cycle of, they're not, again, sealed forever just because they're initially monitored and found to be absorbed in the clay particles. So that monitoring is going to be very important. And then screening, I think those are points I've already made.

And if we go to the next slide you'll see again some of the types of questions that were brought up in the, in the report to the RAB. Again what, the institutional controls and restrictions need to be really better defined. The security fence or the need for a security fence around the wetlands needs to be addressed. I mean, you know, children and water are pretty powerful little things.

So are you, the community, you know, expecting to see these fences around these wetlands and these proposed recreational areas? Are the, are these sediments that are being excavated treated prior to disposal right now? There's no, there's, they're disposed of in the containment area.

There was some, there was a table of all these different alternatives, and final remediation was listed as an alternative and then it disappeared. So I wasn't really sure why that was, but it may not be a preferred alternative, it may not be a treatment alternative, but fibro remediation is basically where plants take up contaminants into their various structures. And one of the structures that was a big problem out near Kesterson Wildlife Refuge was when selenium, which is one of the contaminants of concern here, was taken up into the seed root and then into the bulrushes, etcetera, and then magnified and moved through the food chain, and caused a variety of problems with birds and wildlife that were chronic and acute problems. So considerable, the end result of that was that they ended up draining those Kesterson Wildlife ponds and filling them.

And so there's some question about this final remediation that I had, and maybe someone here can answer that but. And so I bring that point out here. And then this is the point I've already mentioned about if we do have toxic soil with really high concentrations of major contaminants of concern that have potential for future transformation to pat, to forms that are available in a variety of different pathways to children or people living in the area, then why not again consider transporting those more contaminated soils to a properly constructed landfill?

And then there's this, also this question about the annual monitoring, forming a basis for changes in the sediment quality. And this is for tracking what's happening in the sediment over the, this thirty year post closure monitoring period, what's the risk at the end of that period? What's going to happen, as June had brought up, what's going to happen if you find concentrations are still elevated? Do you then in thirty years come back to considering, well gee, should we excavate this landfill or what?

And so I think the last, there may be one last slide which is the cost comparison that I don't think we really need to go into. But you can see this is one of the criteria for the ranking that was used. And if you're looking at a containment area you can see that there's considerable difference in cost for removal versus the cost for containment. And I'm not sure how much of this cost actually includes the cost of the landfill today. And I don't think it does. It doesn't?

CO-CHAIR DUNAWAY: No, it's just the remedial action costs.

DR. WILLIAMSON: And so in some ways that might be something to consider. In the upland areas, again you're looking at a little over six million versus 5.8 million for the preferred alternative limited hot spot versus actually extracting a considerable amount more of soil. And of course, the entire upland excavation is almost, almost three-fold. And then the wetlands area, this is a considerable difference, 40,000 versus eighteen million for wetland excavation.

So there's, there's a variety of different issues here that the community, I think, gets to really think about over the next, I don't know how long you have to think about it. But certainly I hope we've raised a number of questions for you to discuss and think about in all three of these areas. And I hope that you, we have an opportunity here to answer some questions, and so that's what we do now. Okay. Thank you.

CO-CHAIR DUNAWAY: Maybe just to start this off for some of the issues that Rhea and June did identify, the feasibility study is not intended to be a complete design document to have all the details in it. If we did a complete design of each and every alternative, that would be a lot of work, and two-thirds to three-fourths of that work would pretty much be done in vain. So the details really don't even come out in the record of decision, the details come out after the decision document is completed and what's called a remedial design is prepared. So don't let that discourage you that there's not enough information. The idea is the concept is presented enough to allow all the alternatives to be compared to one another for purposes of just grasping the concept and determining what's the best concept to charge down the path of getting to a complete design. But why don't we ask questions, for those who have questions, to Rhea and June, and see if we, what kind of interests are out there for all of you folks.

MR. KARR: Just a point of clarification. What was the quantity of oil in the one million gallons?

CO-CHAIR DUNAWAY: The estimates, I believe it's 4.5 million gallons disposed at IR site two, which is the waste oil disposal sumps, and that is an area contained within the containment area. It's actually right now inside the slurry wall. I'm not sure if there's any identified free product outside the slurry wall associated with the IR site two, I don't think there is.

MR. GEMAR: I think there is one point --

CO-CHAIR HAYES: There is.

MR. GEMAR: -- in a non-contained upland area that does have some free product. I think it's fairly localized but, and that would be removed as one of the alternatives specified for the upland area. But it's fairly localized and not anything on the scale of what's inside the containment area.

MR. KARR: The price of oil keeps going up, you can pay for the project by recovering that.

DR. WILLIAMSON: Actually that's a really good point. I did some, look at other Superfund landfills around the country, and there's this process called remining, it's not necessarily for a landfill of this type where there's, there are so many mixed wastes and it's not clear where they all are, but when you do have areas with fairly uniform layers of waste, remining, there are companies that have recently developed that will go in and do this work.

And Sandy at National Labs has come up with an electronic mechanism for -- I can give this to you, Myrna, some handouts I made of -- they can go down and they can use these laser detectors to figure out just where these different wastes are, if that were a concept. But I did, I was looking at excavation as an alternative in other Superfund sites. And there are several throughout the country where they went in and they excavated the waste and from Superfund sites with land, with landfills, a variety of landfills with a variety of mixed contaminants and then

transported them to other sites. And some of those to other landfills, hazardous waste landfills. And a number of those are long rivers, so like Toledo, the city of Toledo has one. I'll just give you those in case you're interested.

DR. WILLIAMSON: Well thank you.

CO-CHAIR HAYES: No, no, I just faked you out there. You saw me writing questions, so I'll try to be quick. But everybody else can leave. How will the cap be affected by the draw down of the water if you're lowering, you know, the total volume? Will the cap all the sudden just start to have divots in it or dips or will there be that dramatic of a reduction in volume?

DR. OBERDORFER: I would hope it's designed to take some settlement. Usually when they do these caps it takes some settlement into account. It's really probably a question for Weston how their cap design will deal with, settlement within waste is a real classic problem, so --

MR. KARLOVITZ: As part of --

CO-CHAIR HAYES: You want to use the microphone, guys? You can take it off of that thing and just sit down. Whatever you call that thing, the stand.

MR. KARLOVITZ: As part of the design we will look at settlement. We actually have a pad that's out on top of the landfill now where we've actually added seven feet of fill just to see what settlement occurs over time, and that will be one of the issues addressed during the design.

CO-CHAIR HAYES: I guess also because you will be adding weight as you add the cover to it?

MR. KARLOVITZ: Correct.

CO-CHAIR HAYES: These are two comments not to you, but you brought them up. I just want to note for the record that if this was and is such an important issue for this community as you've described, for not only the short-term thirty years and into perpetuity, and we're going to live snugly with a hazardous waste landfill with us, and it kind of looks like what we're going to do, why was no extra effort or why has no extra effort been being made by the RP to really make this a top issue with the press? I mean the only press we did get was great press, it was from an attempt that the RAB made to inform the press about, with the RP about the containment area.

I would think that somewhere along the line regulators, you would be looking at a pretty aggressive public involvement program to make sure that this community actually is aware, not just the five of us who are here, except for those who actually live, are in our audience who live here too. So maybe ten of us. This is kind of like a Sodom and Gomorrah thing. Oh well, there's three of them who we'll save, but the rest of you will burn up or something.

The other thing that that brings up, we as the RAB, Restoration Advisory Board members who are here today, have taken as much of an interest as we can in this, but our community, we're having a hard time convincing the rest of the community because the landfill isn't directly affecting the breast milk of our mothers in this town or something, we're having a hard time convincing them that this is an issue we should get right on top of it.

However, the next door neighbor, Lennar, CH2M HILL, I would say Lennar in this case because CH2M's work is done, is building 1,400 homes. I continue to have to bring this up, not because I'm trying to be mean, I like all of you. But because I want to know, when are you going to talk to the new home purchasers about the fact that they're moving into a landfill?

Are you inviting them to come to the Restoration Advisory Board -- I doubt it -- and get engaged? And at what point are we all the sudden going to be inundated and turn into a community association for those new homeowners and/or have tremendous effort, exposure to them as they jump up and down and scream and say how dare you have allowed, the five or six of you who knew about this, allowed a RCRA landfill to remain in place, and here we've bought $750,000 houses and we've got to live by it. How could you have done that to us?

So you have an opportunity and I believe a responsibility to communicate what's around the corner, what's over the hill to the people. And maybe you have disclosures and you're following those in California law. But I would like do see what effort Lennar has made to address that issue. And I'd be happy, as we've been talking about for a long many months, to help you work on that, getting that message out in a way that wouldn't be alarming or disarming or whatever it is. What effect would an earthquake have on the cap? I'm pretty convinced myself that the slurry wall probably would be okay unless something really grand happens and then probably we'll all be taking a boat ride. But what about the cap?

DR. WILLIAMSON: I can say what's at Hunter's Point.

CO-CHAIR HAYES: Okay.

DR. WILLIAMSON: I can tell you that what, and it's a different landfill and it's a, it would be affected by an earthquake differently than here, of course, depending on where the earthquake is, which fault. But they did, the Navy did settling and vertical and horizontal displacement tests on the landfill out at Hunter's Point because you may remember that the landfill had a non-RCRA cap originally, and it had a fire that started and burned for six months, and there were, there were, there was a lot of concern about it so they did a whole lot of testing. And they found that there would be, and I'm going by recollection, so give me that. There would be four feet of displacement, I believe it was horizontal displacement, and ten inches vertical. And then there, they also found that there would be a lot of movement within the landfill. And of course, there's some concern about that because when you mix those chemicals around or those materials around, materials that were isolated from each other, not in contact with each other can come in contact with each other, because no one really knows what's down there or where it's at. But there was a report written, and that's on file for the Hunter's Point Landfill that does show this settling and this displacement on the order of feet in one direction and inches in the other.

CO-CHAIR HAYES: What kind of, would there be any benefit to any kind of treatment to the contained, to the soils inside the contained area? For instance, the Navy has been bringing out, showcasing a guy who injects molasses into everything. And he's the world's most expensive environmental engineer he says. And so we've gotten to, well some of us have gotten to hear his presentations, and they're fairly compelling. And so would there be any benefit to reducing the risk by doing any kind of treatment of the contained area soils?

DR. WILLIAMSON: I don't know anything about the molasses process.

CO-CHAIR HAYES: Well, I mean any kind of treatment.

MR. KARR: Slows it down. LAUGHTER.)

CO-CHAIR DUNAWAY: Good one, Jerry.

CO-CHAIR HAYES: You don't have to know about molasses but --

DR. WILLIAMSON: What he's probably trying to do is give it a carbon source, right.

CO-CHAIR HAYES: Yeah, it's a bacteria charge.

DR. WILLIAMSON: And then they can start breaking down the other organics there that.

CO-CHAIR HAYES: But I'm just using that as an example.

DR. WILLIAMSON: Sure.

CO-CHAIR HAYES: Just any kind of treatment to reduce the risk to the receptors of that contained soil.

DR. WILLIAMSON: In terms of a blanket answer, you know, every different, every one of those different contaminants under there is going to react to treatment in some different way. And as I've mentioned before, I mean you can look at the work that McCarthy's Lab out of Stanford did with Louis Preeny and Paul Roberts, and they did a fair amount of work with TCE and other chlorinated compounds which are, if I remember correctly, they're limited in this particular landfill. But those are compounds that are generally difficult to break down. And they were able to show that by giving carbon and giving hydrogen peroxide, or an oxygen source, you can stimulate the bacteria to do that, but in doing so you often produce more toxic compounds.

And so the, that sort of question is one that doesn't have any, a, one answer, and you have to be careful about what you're doing. Anytime you do in situ, which means in place treatment, if in doubt, rip it out.

DR. OBERDORFER: I was going to give you a much simpler answer than that. I think anytime you can do something that would remove contaminant mass or eliminate the toxicity, and I'm talking in very abstract terms how you might treat to do that, you're going to be ahead because there's simply that much less that's left in the ground, that's a simple little budget kind of approach. And the more you can eliminate, the less risk you're going to have in the future.

CO-CHAIR HAYES: Only two other questions. How do you ensure that after the hot spot application is made to the, the hot spot soils are moved into the containment area, how do you ensure that the leachate water that's flowing to the local sanitation district is, doesn't now have an elevated contaminant load that wouldn't be an acceptable level?

DR. OBERDORFER: They're going to have to test that. And they've got a provision in the FS to do pretreatment if it's at levels that is unacceptable to the wastewater treatment plant. And are you extracting water at this point now? Is it acceptable to the treatment plant? (Motioning by unknown audience members.)

Dr. OBERDORFER: It is, okay.

CO-CHAIR HAYES: But how will the hot spot addition to that affect it, or will it not because you'll not have a, you're not expecting migration once you get the cap on?

MR. GEMAR: I think for the most part hot spot excavations are done for primarily eco risk. And so they're, you know, already pretty low in comparison to what's already in the landfill. So we don't really expect any change, but we are sampling it, initially we're sampling it weekly. And if over time the sanitation department is satisfied that it's not changing appreciably, that will probably be relaxed somewhat, but we'll continue to test it over time. But to answer your question, Myrna, I don't really think the hot spot soil is going to impact it at all.

CO-CHAIR HAYES: Okay. And the final question is this, or comment. When, we probably have quite a difference in opinion about fences and their purpose and their value and their effectiveness and all those good things. Having said that, this area is planned amazingly as a 92 or 94 acre regional or community park by the Mare Island reuse plan. It's been my experience that whenever the city feels like it can change a reuse plan. It can change our regional park to an L and G tanker terminal just by a city council vote, at least they thought they could. So there might be some more creative use for this, well let me see, not creative but more appropriate use for this land than recreation. But given that that is the real driver for the land use here, wouldn't, and now that you've expanded my thinking to see that while the regulators might demand a silly fence around the RCRA and whole containment area, you're now saying that the tidal and the upland areas would also have some exposure pathways for either eco receptors or children recreating if things weren't just right.

And I'm beginning to think that, you know, a gigantic fence idea is really an unsavory idea. And so at what point in this process, RI, FS, the final remedy, is a, does somebody get involved as part of this remedy selection in developing a viable recreation access plan and education program if the end use is recreation?

I know that it, I'm not sure that for environmental purposes the recreation plan needs to be a part of the remedy, but in terms of reducing exposure pathways it seems like the recreation plan, if that is continuing to be the final land use, would have to be included.

DR. WILLIAMSON: I'm trying to figure out what that question was. I'm sorry, it was a long one.

CO-CHAIR HAYES: Yeah, I know it was a long one. When or what or do you have examples of recreation, or use plans that are a part of the remedy? I mean a fence is a form of a use plan, but it doesn't meet the needs of the community's plan for a community

ark at that site. So when do the regulators or when does the regulation tell the city that they can go fly a kite with that idea? I know they can't. And how do you involve the final use of the land in the remedies, in the remedy design?

DR. WILLIAMSON: It seems to me like having more information about just what kind of recreation is going to go on at the park, at this park that you've got planned, you know, bike riding or dog walking or dirt biking? If those sorts of activities are planned, then they're going to have to probably be thought about in terms of impact to the cover, the soil cover. Or there may be certain areas where you have to restrict certain activities. So that comes into knowing more about what the idea is.

If what you're looking at is just a walking trail, a paved trail with, where people stay on the trail, similar to like if you go to Fort Ord where, it's a military base that was made into a rec area, but people stay on the, on the walkways that have side railings because there was concern about unexploded ordnance that was still around.

So, you know, it depends on really what you want, what kinds of recreation you want to have at the sites and then I think education, which came up, making sure people know what sorts of activities are safe and what aren't safe.

CO-CHAIR HAYES: I guess my question is, the City of Vallejo isn't known for any kind of proactive planning, I mean visible proactive planning. There probably is some hidden somewhere. But, so we don't have any plan for that area, it's just in the reuse plan, it's a nice big green area that says park. And so at what point in this process do you develop a more specific appropriate recreation plan as a part of this process, so that you actually can design a remedy that meets a use that doesn't actually exist?

CO-CHAIR DUNAWAY: Maybe I can answer this. On the remedy and reuse, I guess dilemma or where those two are coordinated, on cleanup of military bases, particularly what I'm familiar with, this base and Marine Corps bases, the remedy for addressing the hazardous substances or the CERCLA response action really trumps the reuse plan in that it has to be done first before the Navy can transfer the property, and the remedy has to meet the regulatory requirements, meet community acceptance to get to the remedy.

And once the property can be transferred or the city is proactive enough to maybe start some planning before they get the property, the restrictions placed on the property by the Navy as part of the remedy to protect the remedy and to maintain human health and the environment, protection measures, then have to be addressed by that reuse planning and design.

I know that that may not be the most efficient or the best answer you want to hear, but we try to meet the reuse plan. We do our best to implement remedy that allows for the intended reuse to be done or to be experienced in the future. But --

CO-CHAIR HAYES: If you don't know the intent of reuse, how do you make a remedy for it?

CO-CHAIR DUNAWAY: Well, it is very general and somewhat ill-defined reuse where we don't have plans and specs on a park that wants to be built, that the city wants to be built. But at this point we can't really hold up the remedies to wait for that to happen.

CO-CHAIR DUNAWAY: The Navy is not a developer and we simply have to let the city do that. If they want to be proactive and make the plans happen, we can take that into consideration, that would be great. But I don't think you're suggesting that we wait for the city to do that?

CO-CHAIR HAYES: No, I'm saying go call 'em up and ask 'em to. They don't know they're supposed to do that.

CO-CHAIR DUNAWAY: I'm not sure they would even if we asked. And it's probably not going to happen this year which is when we'd like to build this remedy. But in any case, we are responsible for addressing the hazardous substances first, and then the reuse needs to accommodate the remedy to make sure that there's no damage to the remedy.

And unfortunately, if the city hasn't taken measures to start their planning process, we can only go off of what they've given us, and that is the very general reuse plan that we have in front of us.

DR. OBERDORFER: I guess one of the things you're going to have to do is look at what the residual risk is, and to relate that risk to what those activities are. Personally I wouldn't want to see kids, you're going to have this lovely hill out here, the ideal place, Rhea's mentioned, for dirt biking. I could see kids riding up and down the RCRA landfill if you didn't have the cap on it.

There is a potential for escape of volatile compounds. Again, there's things to look at like that. It goes back to what they'll do about the gas collection system. And so it's kind of, it's really circular. So I guess, you know, it's looking at what those risks are and seeing what's acceptable and whether you have to really limit access to those areas or not.

MR. GEMAR: And just a second, I think, you know, the preferred alternatives in the FS for the areas outside the containment are really designed to reduce the residual risk which June was talking about to levels that would be acceptable for having no restrictions.

We're choosing to propose a two foot soil cover as really an additional measure because you can never be a hundred percent sure, you know, that you're going to get all of the hot spots. Obviously we think we can get the vast majority. But the hot spot definitions are such that the residual risk should be such that it's within the management, you know, range based on the child receptors and all the various potential receptors within the wetlands.

Again, the objective to remove the hot spots that are the biggest problem is reduce the human and most of the eco risk. There's, I think, some areas in the wetlands that we're saying they represent some eco risk, but to remove them would probably cause more damage than you would help by removing. And so in those cases we just propose to monitor them annually over time just to make sure that they're not spreading or whatever.

So I just want to make it clear that outside the containment area the objective is really to reduce the risks such that there, you know, people can run around and do whatever they want theoretically. Of course, DTSC is still going to want some controls. But we're going to additionally add this two foot soil cover just to try to add an, you know, an extra layer of safety for that, for those areas.

CO-CHAIR DUNAWAY: Thank you, Dwight. Just to address a few of the other comments or questions that Myrna raised in kind of a quick fashion here. Earthquake assessment is absolutely a requirement as part of the design phase for this landfill cover, and it's something that addresses what might be the most credible earthquake event that could happen at this site. So that basically will be addressed in a very well engineered way. Dwight and I talked earlier before the meeting today, and I think our safety factor is up over four, four times greater than what would be required for, what would be the worst case event here at Mare Island. As far as the issue of this landfill being so bad we need to tell everybody in the world about it. Let's not fool ourselves. The permits for the hazardous waste that could be accepted at this landfill were limited to asbestos waste, which poses no risk to groundwater migration; solvent laden rags, not liquids, but just the rags for them; and green sand, the asbestos or the abrasive blast material used for the sandblasting.

This was not a blanket hazardous waste landfill that accepted everything. However, also before the rules of RCRA came into play there was unlimited disposal going on here. But that's the same thing at other landfills around the city as well as around the country. Landfills, just because they are not permitted for hazardous waste, doesn't mean they don't have hazardous waste in them. So this does have a unique situation to it, but it's not that unique.

As far as notifications. Part of the process we went through when we transferred the early transfer parcels, as we found out, DTSC, actually the Department of Health Services had placed a deed notification on the entire property. I'm not sure if that still exists, but when we transferred property to the city and to the State Lands, the title search found that.

And maybe Sheila knows more than I do, but I have a feeling that deed notification is not going to disappear.

MS. ROEBUCK: Well, and the other thing I'd just like to mention. In response to Myrna's concern about the disclosures, every prospective homeowner receives a full set of disclosures, and there is an entire section of that that is devoted to the environmental issues all over Mare Island, not just adjacent to the residential areas but everywhere, including the landfill. And it also does mention the RAB. And every homeowner has to indicate that they've received that by their signature or initials. So that's always there.

CO-CHAIR HAYES: Your epic cue doesn't mention it.

MS. ROEBUCK: Maybe it wasn't --

CO-CHAIR HAYES: Very good, Sheila.

CO-CHAIR DUNAWAY: Lastly, on the issue of doing a press release, that is something that we've heard. We are following regulations and we work with the regulators to determine what's the most appropriate community notification to make. And yes, we do meet those requirements. But we've also heard from you here at the RAB that maybe we need to do more. And so we've taken that in, and I personally want to do press releases more, particularly because our new department has a new public affairs officer, and her and I have been talking about doing more press releases here. So we've taken that into consideration. That is over and above what the regulations say, but given the special circumstances and the advice we have received from the

RAB, we'll do that. So, but that's all I can remember out of all the questions you had. I think I touched on most of them.

MR. KARR: Just one final, would it be possible to get a copy of your slides in a readable format and not negative pica? I can't read this at all.

CO-CHAIR HAYES: By e-mail?

DR. WILLIAMSON: Sure. Want me to e-mail you the PowerPoint?

CO-CHAIR HAYES: Yeah.

MR. KARR: Great information but it's just really difficult to read.

DR. WILLIAMSON: I'll send that to Myrna.

CO-CHAIR DUNAWAY: If I could get a copy Regina could print out full size slides and we can mail it out in the next RAB mailing package.

DR. WILLIAMSON: That's great, I'll do that.

MR. KARR: That would be helpful.

DR. OBERDORFER: Thank you.

CO-CHAIR DUNAWAY: If there's no other questions, let's give our appreciation to Rhea and June. (APPLAUSE.)

III. ADMINISTRATIVE BUSINESS (Myrna Hayes, Jerry Dunaway)

CO-CHAIR DUNAWAY: I know this topic always tends to extend our allotted time for this, so why don't we take a quick break, unless anyone feels we want to just rush through the last half?

CO-CHAIR DUNAWAY: You are willing to get up and, or are free to get up and get refreshments, stretch your legs, and such. I'll just chatter away here. As you go back towards the refreshments area, we do have a slide show there of photographs from the contained detonation chamber demonstration of last week. And for those of you who couldn't make it, we got pictures of what that was all about and the items that we had treated, the munitions items that we had treated there.

As far as administrative business, the January meeting minutes are in your packet, and you'll see that those are verbatim minutes, we resumed stenographer services in January.

The proposed RAB rule issued by DOD just came out in the middle of February, actually I got it in the middle of February. They were actually issued through the Federal Register for a formal public comment period on January 28th, 2005. If you do a search for the Federal Register on that date you'll find a Department of Defense proposed rule for RABs on page 4061. That's kind of important if you're into reading Federal Registers. But that's the RAB rule that we talked

about last year, DOD had been working to present a proposed rule for public comment. That commentary ends on March 29th.

I had put out an e-mail about two weeks ago with a summary of the roundtable discussions we held on January 27th during the RAB meeting. And it's just a table of the various discussions that we had during the RAB, the roundtable, and some of the suggested solutions to solve some of the issues.

I encourage you to read that, and maybe at the next RAB meeting we can talk about maybe a follow-up focus group meeting. And Michelle, maybe we can work with the developers to figure out how to come back to the table on that one.

For that contained detonation chamber demonstration, I had talked about this with Myrna, but we are drafting up a press release for that, and we hope to issue that before the end of the month. I should have a draft by next week. And what I'd like to do is circulate that around the RAB members to have you guys do a quick chomp on it, make sure it's something that's readable to the public, something a newspaper might actually understand enough to print it. We'll include photos. But I think that will be a nice topic to put out there for a press release.

That was a rather unique opportunity for us to have a demonstration here at Mare Island. And we hope to use that same device in the future to treat additional munitions that we find. With that, why don't we go into the focus group reports.

IV. FOCUS GROUP REPORTS

a) Community (Diana Krevsky)

CO-CHAIR DUNAWAY: Diana could not make it tonight for the community focus group.

b) Natural Resources (Jerry Karr)

CO-CHAIR DUNAWAY: Jerry, I know you were gone for a moment there, but do you have a natural resources focus group report?

MR. KARR: No.

c) Technical (Paula Tygielski)

MS. TYGIELSKI: Nothing to report.

d) City Report (Ray Leftwich)

CO-CHAIR DUNAWAY: Thank you, Paula. Ray isn't here from the city, so nothing there. Why don't we jump to the developers? Steve, you have something for Lennar? .

e) Lennar Update (Steve Farley)

MR. FARLEY: I do. Handouts are over here on the table. If you didn't get them, grab one on the way out. I draw your attention, first of all, to the left side of the figure where --

CO-CHAIR DUNAWAY: Do you want to check your microphone, Steve?

MR. FARLEY: Oh, yeah, I'm sorry, forgive me. How's that? I draw your attention to the left side of the figure. The colors there, the yellow, blue, and green, you probably all heard this but I'll go through it quickly, represent the different phases of the RI, FS cleanup process. And there's a legend in the lower right-hand side that describes that.

The other main feature on here is the sort of pale blue lines and little dots. That represents the IR14 or the former industrial wastewater piping system and the pump stations. The pump stations are the little dots. Again, that information is contained in the legend.

And then the other two areas that, the box removal of lead contaminated soil just points out that we're still doing that work in the area east of Azuar in IA D1 which we are calling IA D1.2.

And also the other text on the map pointing to the IR14 industrial wastewater piping system cleaning and flushing activities. So that's going on. Those are the two main activities that are going on right now.

The photographs that you have on the right side just depict some of those activities, the lead based paint in soil removal, and the IR14 flushing and cleaning activities. The pair of photographs in the upper left-hand corner, although now that Jerry's back, they're a little bit small, I hope you can read the text underneath it.

MR. KARR: What picture?

MR. FARLEY: What it is depicting is some, what's called scabbling. And scabbling is a process that's used to remove a thin layer, or in some cases a thick layer of concrete by using essentially a jackhammer and just pounding the daylights out of the concrete until you remove a quarter inch, a half inch -- am I close, Jim? Okay. And this is work that was done in H83 which is one of the buildings within the Touro area. It's a former electrical building, we went in and removed PCBs by scabbling off the concrete. The other text on the right-hand side of the figure, documents and review, upcoming documents and milestones.

The three documents, the first three on the left-hand side there are all documents that were anticipated last month and are now in review. Land use covenant implementation and enforcement plan for H2 is also in review.

A couple of other documents that are coming up that are fairly important is the draft removal action work plan for IR 21, and the draft RAP for IAB.

Milestones. We closed six additional PCB sites by U.S. EPA and DTSC. If you jump down directly below that environmental site closure status, the only numbers that changed are the additional six PCB sites that were closed in the last thirty days.

And then for the new issues of concern and the upcoming public comment periods, those are essentially the same as last month. The one thing I'd like to draw your attention to is the

bottom item there that's labeled, "Public comment period for PCB work plan ends March 9th."

So I just want to highlight that that document has been in review, it was identified in the last month's RAB update, and that public comment period is coming to an end next Wednesday. So just a quick heads up.

CO-CHAIR DUNAWAY: Thank you, Steve. Any questions for Steve on Lennar's work? Why don't we jump over to Cris on the Weston report?

f) Weston Update (Cris Jespersen)

MR. JESPERSEN: Okay. We've got a handout going around. One thing to discuss for last month, first is the investigation area H1 wetlands mitigation, we touched on this in a prior meeting. As part of construction of a landfill cap we're going to be potentially destroying some wetlands, wetland X will be under one of the cap systems. And we're going to have to take a look at whether or not there's some potential for the presence of the salt marsh harvest mouse there. So we're discussing about potentially doing some trapping there in late spring, early summer to determine if there are any mice there. And if they are we will catch them and relocate them to the tidal marsh.

We continued working on a resolution of comments for the draft area H1 feasibility study which we received from regulators in mid February. We're working on resolving some initial responses to comments in the draft final H1 remedial investigation report, and work on those phone calls to try to work through the various comments and see if we can wrap those issues up.

We did some follow up QC sampling for the slurry wall that was installed late summer last year, and involved going back in and doing some borings at fifteen different locations, and taking a look at the permeability of the wall as it was constructed to see whether or not it met the design criteria. And in this case the preliminary results indicate we've exceeded the design criteria by a factor of three, so it's coming back very positive. Reflective of the QC plan, the QC work we did installing the slurry wall, as some of you guys witnessed last summer when we did the tour out there.

And Myrna, you didn't give us credit for getting the press out there, do a little outreach, and we continue implementing the alternative.

And finally, as Dwight noted earlier, we did start up the extraction trench system in February, early February. And from the end of February we're already pumping out about 1.5 million gallons of material from the leachate trench. And again, as Dwight indicated, the material that we're taking out meets the discharge criteria, so that's been positive. You seem puzzled?

CO-CHAIR HAYES: No, since I serve on the Sanitation District Citizen Advisory Committee as their chair also, I'm interested to know what you do in storm events in terms of discharge? Do you hold your, do you have a holding tank out there because a storm event seems like this kind of volume. I don't know, what's a daily volume on this?

MR. JESPERSEN: Fifty gallons a minute.

CO-CHAIR HAYES: Fifty gallons a minute times how many minutes in a day?

MS. ROEBUCK: 1,440.

CO-CHAIR HAYES: 1,440 gallons a day is all you're sending?

CO-CHAIR DUNAWAY: Times 15.

CO-CHAIR HAYES: Times 15.

UNIDENTIFIED SPEAKER: About 70,000 gallons a day.

CO-CHAIR HAYES: How many?

UNIDENTIFIED SPEAKER: 70,000.

CO-CHAIR HAYES: 70,000 gallons a day?

CO-CHAIR DUNAWAY: Do you know what the capacity of the plant is?

CO-CHAIR HAYES: Yeah, 62 million gallons a day. Okay. All right. As a follow-up on the mitigation work, the Navy did submit a formal request for consultation to the Fish and Wildlife Service today. That was not a requirement for us to do that under CERCLA, we really did not have to do that, but in meeting with the service, actually I met Jim Browning earlier in February, we thought that would help the process move along. So we had done that, and we hope to make a good progress on the consultation aspect of the harvest mouse by doing so. So we'll continue to keep you updated as we move through the roughly five month period it takes to go through consultation with the service.

g) Regulatory Agency Update

CO-CHAIR DUNAWAY: Thank you. Before leaving the topic of focus group reports, Rhea and June had suggested some questions related to their review of the feasibility study. And instead of trying to go through that here today, my thought was maybe we could schedule a focus group meeting where we can kind of delve into those questions.

What I'll do is I'll pose an e-mail call to see how the RAB members feel about that. Because the questions are important, and I do think they should be answered so that they alleviate any concerns the RAB members may have. I do think some of the questions were a little bit off base because they don't fully address some of the things that maybe they don't know about, but you guys do know about. We kind of know about and we have ideas for how things are going to move forward in the future. But I think we need to address these questions somewhere here in the near future before we get to any kind of final decision. And maybe we can tie that into the fencing issue that I think we are, DTSC is committed to doing that focus group meeting too. So maybe we can do that all in one shot.

Well, with that, why don't we move into the regulatory update. I think Michelle is the only one from DTSC, so I'm not sure anyone is going to report for DTSC.

MS. TROTTER: No, I wasn't told to. Sorry.

CO-CHAIR DUNAWAY: Thank you for showing up, and tell Chip what happened here tonight. Carolyn and John are with EPA, are you guys going to provide a report?

MS. D'ALMEIDA: Yes. We got some comment letters out this month on the engineering evaluation and cost analysis for the DRMO scrapyard, and also the removal action work plan for the DRMO scrapyard.

We had a long list of comments from Tom Hall on the MEC items in the work plan, mainly on QA/QC. And we submitted those this week. And earlier we submitted comments on the engineering evaluation and cost analysis. And our comments there basically had to do with: One, the fact that the alternatives that were developed for that are all restricted to considering industrial use only, which we commented that, well, you should at least throw an alternative in there that the public should have the opportunity to comment on an alternative that provides unrestricted use. I don't know if that's a major issue for people or not because it's probably pretty much been pre-determined to be industrial. The DRMO scrapyard. So that may be one area where you might be interested in.

What the Navy is proposing to do is excavate about eighteen inches off of the top of the soil there, screen it for MEC items, excavate, and get rid of some of the hot spot areas, but reuse the same soil after screening and put it back, because they say that it's already meeting industrial criteria. And we were maybe questioning whether or not there was an adequate characterization of the soils out there, in particular did not notice if asbestos had been considered in the sampling. So that was one of our comments as well.

Let's see. We also got a letter out this week on the F2 RI, the Navy's responses to our comments which were in response to previous comments. This is like about the third round of iterations.

And I think we've pretty much gotten our comments addressed on that except for a little bit of concern having to do with the treatment of background concentrations in the risk assessment. And I think that's pretty much it as far as things that have gone out. We've gotten several letters out on PCB sites.

I might want to mention where Lennar is saying that PCB sites that have been closed by EPA and DTSC, I guess I should clarify here, when we're talking about closure, a lot of the sites, these PCB sites are going to require that there be a deed restriction on the property.

So we've come to a technical decision as far as how we're going to treat the property, but it's not officially closed until we've got an approved deed restriction on the property. So, I mean, I just wanted to make that clear.

And other than that, I think that's about it. We're having some resource concerns at EPA. John is going to be leaving us in a few months. He's taken on March Air Force base, and his

time is getting taken up. He's going to stick around to help hopefully resolve the issues on the landfill, but then after that it's going to be all up to me.

And at first I was told that I could have more Tech Law contract hours to support me, but now I'm told that because of our budget situation I can't get more technical hours. We've lost our, our toxicologist, our contract toxicologist that we've been using for a lot of this has been laid off because of budget constraints.

So anyway, it's just not a real happy situation here. But we will do the best we can after we're done receiving all these additional reports that have come in. It looks like I'm going to be pretty busy.

CO-CHAIR DUNAWAY: Thanks, Carolyn and John. And, yeah, hopefully you will stick around through the landfill decision because you have been focusing on that.

MR. LUCEY: Yeah, I do plan to.

CO-CHAIR DUNAWAY: On the DRMO though, we aren't planning to place all the soil back in the hole, if you will. Our contaminants of concern are lead and PCBs, and we do plan to ship that off-site.

MS. D'ALMEIDA: Yeah, but most of the soils you're going to reuse.

CO-CHAIR DUNAWAY: They will be screened for the contaminants of concern though.

MS. D'ALMEIDA: Yes.

CO-CHAIR DUNAWAY: So I'm not sure where the asbestos comes from, if you have information why that would be a potential concern there?

MS. D'ALMEIDA: It was in my comments that I noticed in the radiological survey report that it said asbestos was a contaminant of concern, so I noted that. But I did not see it in the RI report anywhere that any sampling had actually been done. So I figure if there is any asbestos problem on Mare Island, the DRMO scrapyard might be a likely place to find it, so -

CO-CHAIR DUNAWAY: I'll talk with our team on that one and see if we need to add that to our sampling scheme. Alec for the Water Board.

MR. NAUGLE: Is that on?

CO-CHAIR DUNAWAY: Flip the switch up.

MR. NAUGLE: Is that better?

CO-CHAIR DUNAWAY: Yes.

MR. NAUGLE: I'm just kind of filling in for Gary Riley who's not here tonight, but he didn't really prepare me with anything to add outside of my involvement on the H1 area. And so that, there's only a couple of things that I've been working on with, regarding the H1, and that

is providing comments and working through some comments and issues on the remedial investigation and feasibility study there. And that continues.

And the other issue is the wetland, the wetland mitigation issue that I think Cris mentioned is ongoing. And we do have a specialist at the water board who is kind of coordinating to get involved in that issue, and her name is Andre Brow, and she'll continue to work with the Navy and Weston on that, on comments and feedback on the wetland mitigation proposal for the wetland X and mitigation wetlands. Other than that, I think that's pretty much it.

CO-CHAIR DUNAWAY: Thank you, Alec. That brings us down to our co-chair reports. Hopefully we'll do it pretty quick. I've circulated the Navy monthly progress report, and essentially I've focused on the CDC demonstration, the contained detonation chamber demonstration from last week, so there's a bit of a summary on that.

I do have some information about what we're looking to do on a path forward for potential early transfer. We did meet with the city last month, and I discussed some changes. Basically the reuse area one, the northern area did change from a Weston development agreement with the city to a Lennar development agreement. Actually it's in the preliminary stages of that right now. And so we discussed how that affects the whole early transfer. And we also talked about the other parcels too.

I'll provide more information at a later meeting, but it really was just kind of a check on the pulse of early transfers to see what direction we may be going in the future. Other than that, we'll talk more at the next meeting on other things the Navy is doing and planning to do later this year. Myrna, do you want to provide your report?

V. CO-CHAIR REPORTS

MR. KARR: Jerry, a quick one.

CO-CHAIR DUNAWAY: Sure.

MR. KARR: You didn't fill us in on the significance of this month's poster vessel.

CO-CHAIR DUNAWAY: You know I really don't know much about this one other than it looks like a refueling vessel. So I'm not sure if there was any significance to this vessel. Tommie Jean?

MS. DAMREL: I tried to get the U.S.S. Jimmy Carter, but it wasn't pretty enough for this. So I thought it was a really pretty picture.

CO-CHAIR HAYES: And is March 3, 2005 actually on that ship?

MS. DAMREL: No, our graphic's person did that.

CO-CHAIR HAYES: Oh, cool. You might suggest that.

CO-CHAIR DUNAWAY: Thanks, Tommie.

CO-CHAIR HAYES: And Tommie Jean, thank you for the work that you did to show this CDC project for the RAB members who weren't present, that was, to me, a pretty interesting project, and you've done a good job of putting the description together about that one. And thank you to the Navy for allowing us to participate in that project. And we still want to know how much CH2M HILL paid for that chamber. The best we know is that Donovan's wife got a $20,000 diamond ring for Christmas that year.

MR. FARLEY: Well that's just the beginning.

CO-CHAIR HAYES: That's just the beginning, that's right.

CO-CHAIR DUNAWAY: That's it?

CO-CHAIR HAYES: Okay. Finally, Diana again you remember resigned in February. She does intend to return from Patagonia this month and will be at our March 31st RAB meeting, so I'd like to maybe work with some of you to make sure that we honor her and maybe give her something for, in a monetary way, you know, a diamond ring for her service to the RAB. So just put that on your mental note. Those of you who want to team up with me to put a nice event together for her at the March 31st meeting, let me know. And finally, Jason Margolis, if you're a KQED or NPR listener, interviewed me along, from KQED channel 9, he usually does the California report. And I don't know what report this will be on, but it will be coming beginning this next week, I understand, at least three days worth of reports on the impact of base closures. Given that we have a new BRAC round coming up, the impact of base closures, previous base closures on communities where bases have been closed.

And I was interviewed for a couple of hours. And then you'll probably hear thirty seconds of me, if any, because the mayor was also interviewed, and lots of affected businesses. And we know that I wouldn't hold a candle to those important other people in his interview. So anyway, he'll be covering Alameda.

CO-CHAIR DUNAWAY: Treasure Island.

CO-CHAIR HAYES: Treasure Island, yeah, and a Southern California base, I don't remember what it is.

CO-CHAIR DUNAWAY: El Toro, Tustin?

CO-CHAIR HAYES: Yeah, anyway, I don't know. But look for his reports, there will be a series throughout several days this next week.

CO-CHAIR DUNAWAY: I think that brings us to the end of the meeting. And I thank you for sticking around. If there are no further questions, meeting adjourned.

(Thereupon the foregoing was concluded at 9:15.)

LIST OF HANDOUTS

The following handouts were provided during the RAB meeting:

- Presentation Handout – TAPP Grant Focus Group Meeting Investigation Area H1 Soil and Groundwater Feasibility Study Summary (Dr. June Oberdorfer and Dr. Rhea Williamson)
- Weston Solutions Mare Island RAB Update February 2005
- Lennar Mare Island Mare Island RAB Update February 2005
- Navy Monthly Progress Report Former Mare Island Naval Shipyard February 2005

MARE ISLAND RAB: TAPP GRANT FOCUS GROUP MEETING

Investigation Area H1 Soil and Groundwater Feasibility Study Summary
Dr. June Oberdorfer
Dr. Rhea L. Williamson
March 3, 2005

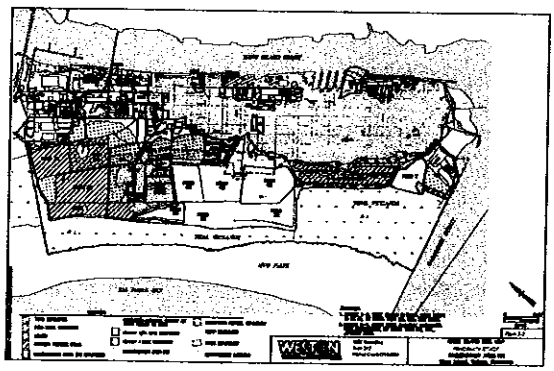
Scope of Our Review

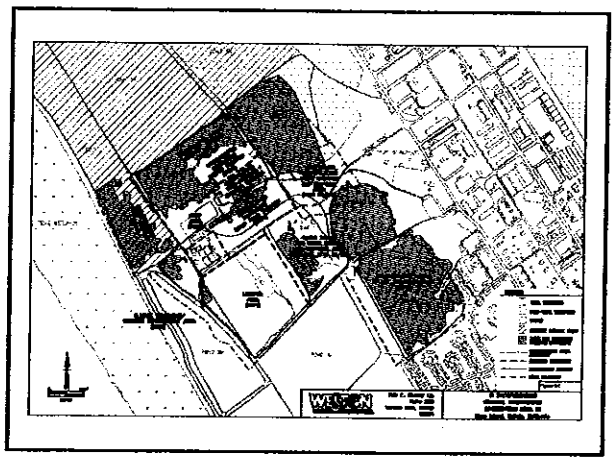
- The purpose of this presentation is to provide a technical interpretation to the Restoration Advisory Board (RAB) of the Draft Feasibility Study for Investigation Area H1 at Mare Island in Vallejo, California prepared by Weston Solutions for the Department of Toxic Substances Control

Areas Addressed by the FS

The Feasibility Study (FS) describes remedial alternatives for three areas in Installation Area H1 (IA H1):

1. the landfill area inside of the existing groundwater containment barrier,
2. the upland areas outside of the containment barrier, and
3. the non-tidal wetland areas outside of the containment barrier.





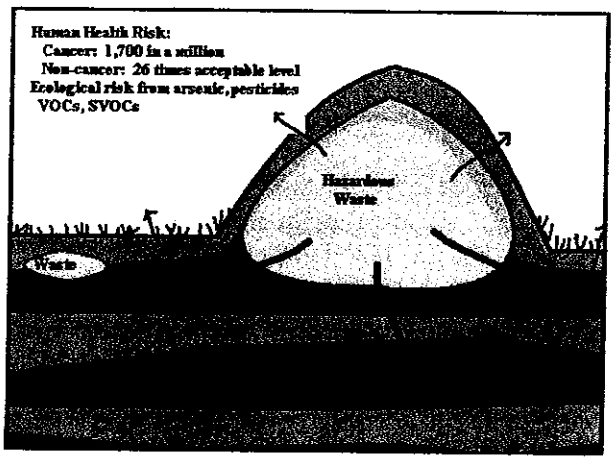
Landfill/Containment Area

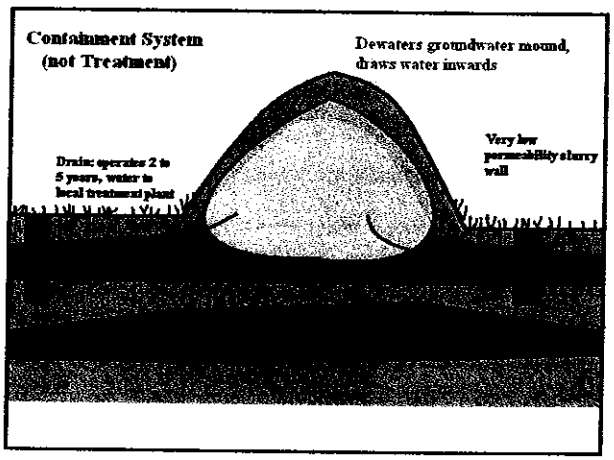
TABLE 6-1
COMPARISON OF REMEDIAL ALTERNATIVES
H-1 AREA FEASIBILITY STUDY
CONTAINMENT AREA
MARE ISLAND, VALLEJO, CALIFORNIA

Evaluation Criteria	Alternative 1 No Action	Alternative 2 Capping with Vertical Barrier	Alternative 3 Removal with Off-Site Disposal
Overall Protection of Human Health and the Environment	No	Yes	Yes
Compliance with ARARs	No	Yes	Yes
Long-Term Effectiveness	3	2	1
Reduction of Toxicity, Mobility, Volume	3	2	1
Short-Term Effectiveness	3	1	2
Implementability	1	2	3
Cost	1	2	3
Total Score	11*	10	11
Overall Rating	3	2	2

Alternative Meets Threshold Criteria? Yes/No
Balancing Criteria Ranking Scale (Alternative with lowest Total Score receives best Overall Rating)
1 Meets Criteria Best
3 Meets Criteria Least
* No Action Alternative does meet threshold criteria and therefore obtains best favorable Overall Rating

Note:
ARAR = Applicable or Relevant and Appropriate Requirement





Public Acceptance is an Essential Part of the Feasibility Study

- This is the public's window of opportunity to influence how the site will be cleaned up or contained.
- Very long-term implications of decisions made now.

Landfill Area Inside Groundwater Containment Barrier

- Arguments in favor of the proposed containment system:
  - If implemented correctly, it should contain the waste components and minimize risk;
  - It (apparently) has regulatory acceptance;
  - It's cost-effective and can be implemented; and
  - A significant portion of the system is already in place.
- Arguments against the system:
  - There will be a hazardous waste site in the middle of a recreational area (with signs and fencing identifying it as such);
  - Once the system is no longer operated and maintained, release of contaminants and risk is likely to increase; and
  - Institutional controls will limit flexibility in land-use in the future.

Landfill Area Inside Groundwater Containment Barrier: Issues

- Short-term extraction of groundwater
- Vertical isolation of contaminants
- Action Level determination
- Monitoring within containment area
- Response to exceedance of action levels
- As-built details on slurry wall construction
- Fate of groundwater extracted from the trench
- Landfill gas
- Setting of action levels for infrequently analyzed
- Monitoring of the IW Pipeline
- Point of Compliance Wells versus Remedy Wells:
- Risk to tidal wetland
- Presence of Contaminant Sink

Landfill Area Inside Groundwater Containment Barrier: ??s

- What are the institutional controls that will be put in place (land-use, groundwater supply, access, signage languages, education)? How will they be enforced? Are the controls in perpetuity or will they have some expiration clause?
- What are the long-term maintenance plans for the cover? For the extraction/treatment system? How will that maintenance be funded?
- Is there a standard 30-year post closure period for the site? What happens to the site after that 30-year period?
- Will sufficient monitoring data be collected so that the level of contamination is known at the end of the post-closure period? Are there any provisions for monitoring beyond the post-closure period?

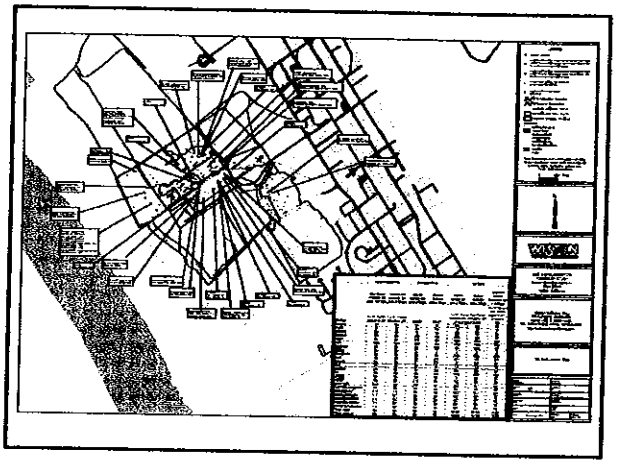
Upland Area

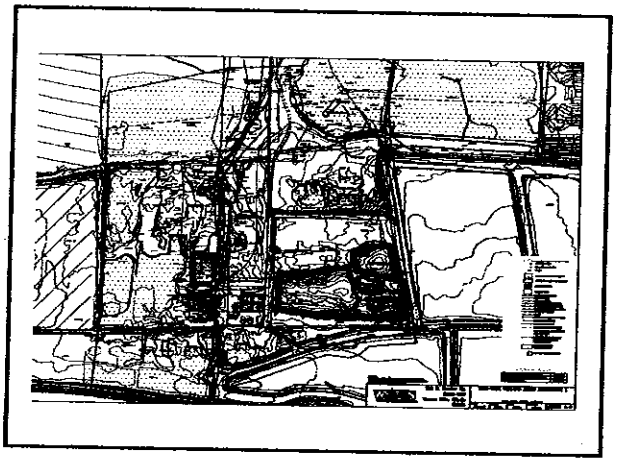
TABLE 6-2
COMPARISON OF REMEDIAL ALTERNATIVES
B-8 AREA FEASIBILITY STUDY
UPLAND AREA
MARE ISLAND, VALLEJO, CALIFORNIA

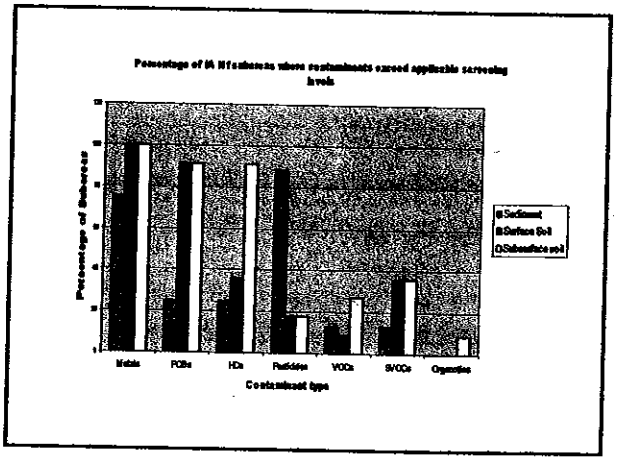
Evaluation Criteria	Alternative 1 No Action	Alternative 2 Hot Spot Removal 2 Foot Cover	Alternative 3 Limited Hot Spot Removal 2 Foot Cover	Alternative 4 Upland Excavation
Overall Protection of Human Health and the Environment	No	Yes	Yes	Yes
Compliance with ARARs	No	Yes	Yes	Yes
Long-Term Effectiveness	4	2	3	1
Reduction of Toxicity, Mobility, Volume	4	1	1	1
Short-Term Effectiveness	1	2	2	4
Implementability	1	3	2	4
Cost	1	3	2	4
Total Score	11*	11	9	16
Overall Rating	4	3	1	3

Alternative Meets Threshold Criteria? Yes No
Balancing Criteria Ranking Scale (Alternative with lowest Total Score receives best Overall Rating)
1 Meets Criteria Best
4 Meets Criteria Least
* No Action Alternative does meet threshold criteria and therefore obtains least favorable Overall Rating

Note:
ARAR = Applicable or Relevant and Appropriate Requirement







Upland Areas Outside the Containment Barrier

- Arguments in favor of the proposed alternative:
  - Contaminated soil is stabilized and covered with clean soil, reducing exposure;
  - Erosion of contaminated soil is reduced; and
  - It's cost-effective and can be implemented.
- Arguments against the proposed alternative:
  - Limited soil monitoring could result in hot spots not being removed;
  - Plans for monitoring and maintaining the integrity of the soil cover need to be specified;
  - Wastes are all being treated the same way, with little consideration of relative ease of treatment and of toxicity; and
  - Institutional controls will limit flexibility in land-use in the future.

Upland Areas Outside the Containment Barrier: Issues

- Subsurface gas migration
- Lateral migration of dissolved contaminants to wetlands
- Hot spot screening and excavation
- Long-term monitoring of the area

Upland Areas Outside the Containment Barrier: ??s

- How will future contamination be monitored? Addressed? What mechanisms are being considered to reduce erosion and transport of surface soil?
- During excavation of the hotspots, and in particular those areas with free product, why is excavation depth based on the presence of visible free product? How will contamination below the visible product and below the excavation depth be assessed? Why not use a total purgeable hydrocarbon sensor to determine an appropriate depth of excavation? This will ensure areas of lower permeability are captured in the excavation process.
- Why is stabilization/solidification (S/S) being used for soils excavated from the hot spots when S/S is not effective for petroleum hydrocarbons and free product. Why not recover the free product, and then use *ex situ* landfarming for hydrocarbon contaminated soils, and S/S for PCB and metal contaminated soils?
- Why is the transport of excavated waste material following treatment limited to on-site disposal?

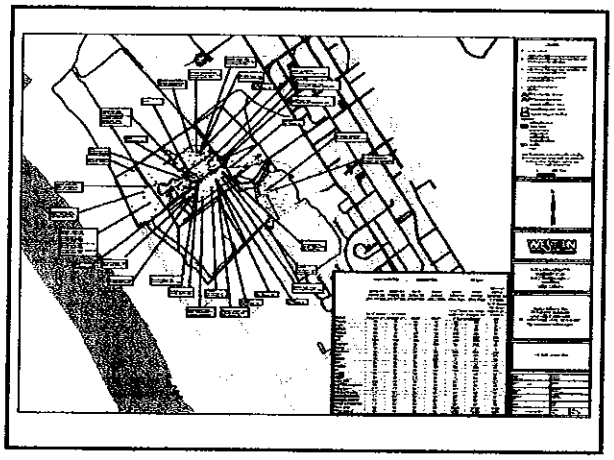
Non-Tidal Wetlands

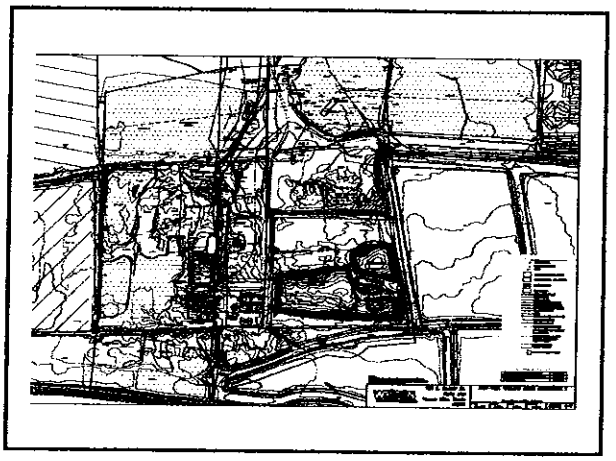
TABLE 6-3
COMPARISON OF REMEDIAL ALTERNATIVES
IR-1 AREA FEASIBILITY STUDY
NON-TIDAL WETLANDS
MARE ISLAND, VALLEJO, CALIFORNIA

Evaluation Criteria	Alternative 1 No Action	Alternative 2 Hot Spot Removal Sediment Monitoring	Alternative 3 Wetland Excavation
Overall Protection of Human Health and the Environment	No	Yes	Yes
Compliance with ARARs	No	Yes	Yes
Long-Term Effectiveness	3	2	1
Reduction of Toxicity, Mobility, Volume	3	2	1
Short-Term Effectiveness	3	1	2
Implementability	1	2	3
Cost	1	2	3
Total Score	11*	9	11
Overall Rating	3	1	2

Alternative Meets Threshold Criteria? Yes/No
Balancing Criteria Ranking Scale (Alternative with lowest Total Score receives best Overall Rating)
1 Meets Criteria Best
2 Meets Criteria Least
* No Action Alternative does meet threshold criteria and therefore obtains least favorable Overall Rating

Note
ARAR = Applicable or Relevant and Appropriate Requirement





Non-tidal Wetland Areas Outside the Containment Barrier

- Arguments in favor of the proposed alternative:
  - Minimal existing wetland habitat is disturbed; and
  - It's cost-effective and can be implemented.
- Arguments against the proposed alternative:
  - Hot spots remain with COC concentrations that exceed human health and ecological risk levels;
  - The alternative is poorly defined and incomplete; and
  - Institutional controls will limit flexibility in land-use in the future.

Non-tidal Wetland Areas Outside the Containment Barrier: Issues

- Wetland excavation: hot spot areas
- Leaving manganese hot spot in place
- Mitigation wetland design
- Monitoring the wetlands area
- Hot spot screening
- Risk reduction

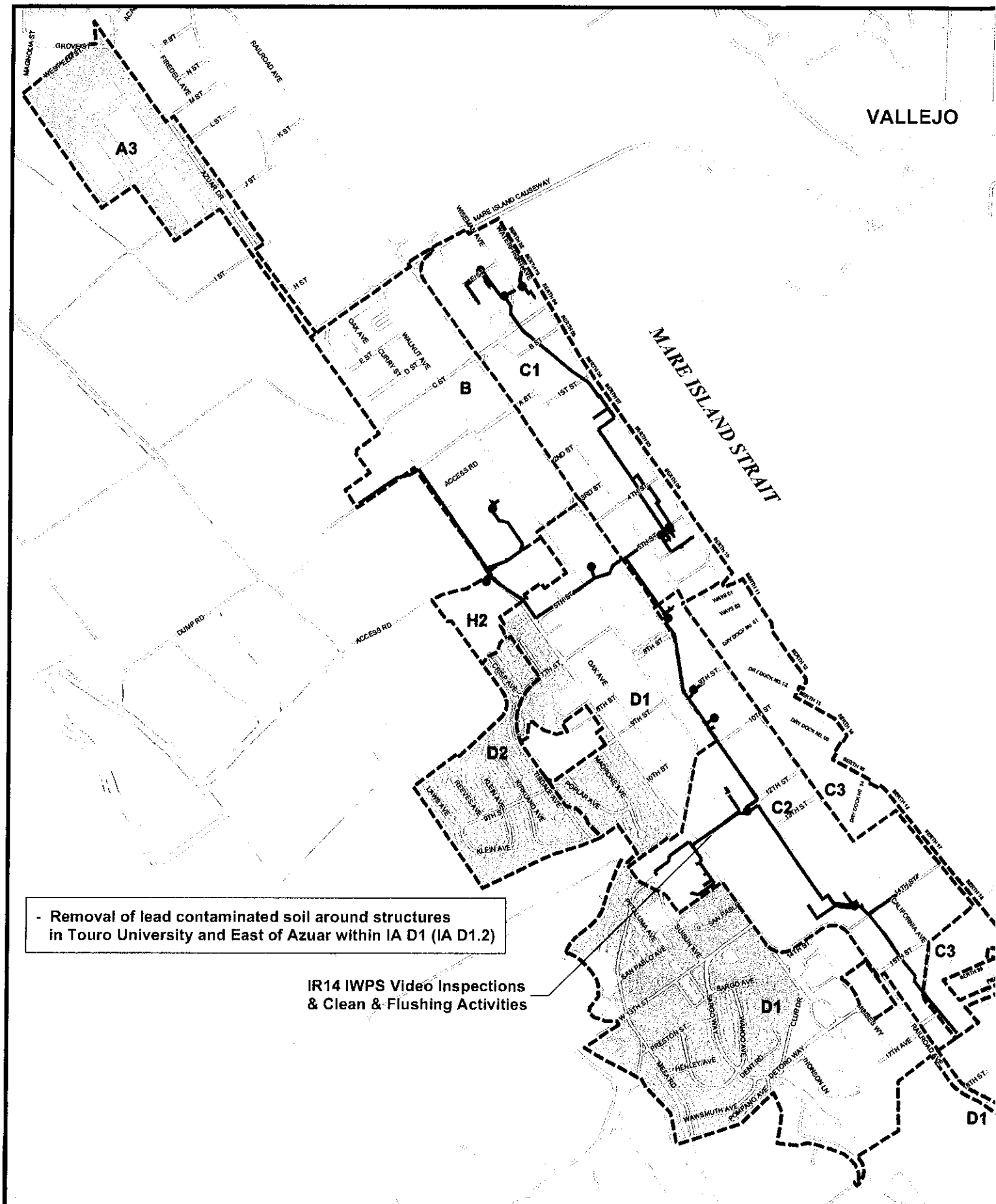
Non-tidal Wetland Areas Outside the Containment Barrier: ??s

- What institutional controls and restrictions are remains vague. Do they intend to put a security fence around the wetlands so that children can't play in the water? Is that what the community is expecting to see in this proposed recreational area?
- Will the excavated sediments be treated prior to disposal? If so, how will they be treated prior to disposal? Is phytoremediation still a treatment alternative? If so, has the potential for selenium toxicity in aquatic biota and birds been considered, given that it is one of the sediment hot spot COCs?
- Why is the transport of excavated waste material limited to on-site disposal? Consideration of the transport of the more toxic soil and sediment hotspots for off-site disposal at a Class IV landfill should be included as an alternative. Off-site disposal should be retained as a disposal option.
- Annual monitoring would provide a basis for establishing what changes in sediment quality have taken place within the wetlands area over the 30-year post-closure monitoring period and what risk might remain at the end of that period. There should be a discussion about what will be the response, if any, if high concentrations are still found in the area at the end of the 30-year post-closure compliance period.

Cost Comparison for Alternatives

TABLE 6-4
COMPARISON OF REMEDIAL ALTERNATIVE COSTS
IR-1 AREA FEASIBILITY STUDY
MARE ISLAND, VALLEJO, CALIFORNIA

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Containment Area	No Action	Containment	Removal	
Costs	None	36,775,000	233,063,000	
Upland Areas	No Action	Hot Spot Excavation	Limited Hot Spot Excavation	Upland Excavation
Costs	None	6,363,000	5,844,000	15,100,000
Non-Tidal Wetland Areas	No Action	Hot Spot Removal	Wetland Excavation	
Costs	None	400,000	18,437,000	



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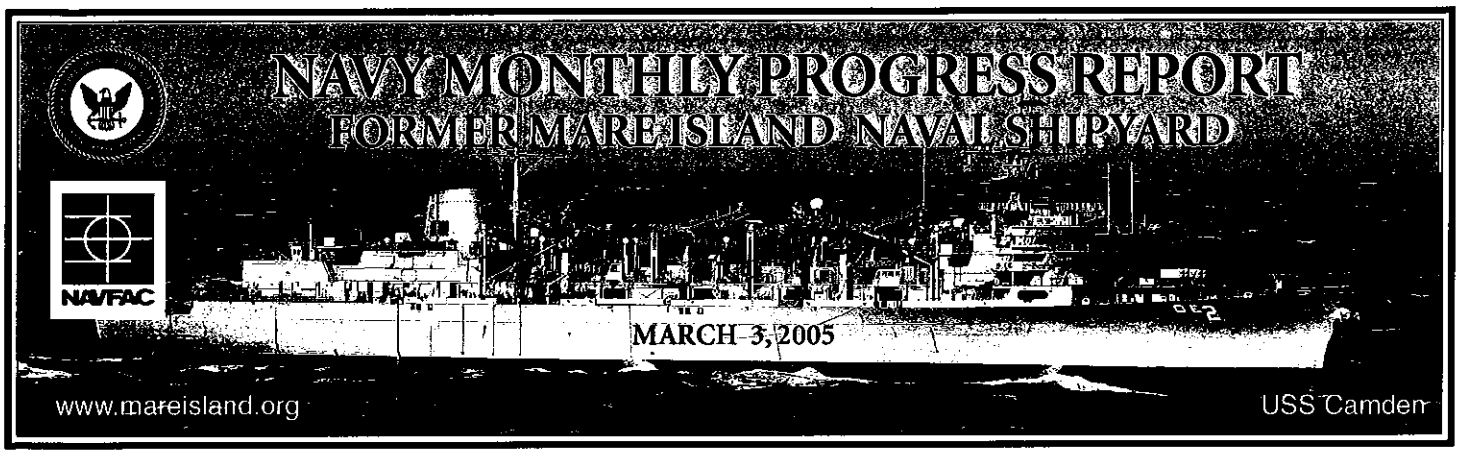


1.0 INTRODUCTION

The U.S. Department of the Navy (Navy) prepared this monthly progress report (MPR) to discuss progress and issues in relation to the environmental cleanup of the former Mare Island Naval Shipyard in Vallejo, California. This MPR does not discuss cleanup work performed by the City of Vallejo and its developers, Lennar Mare Island and Weston Solutions, through the Navy's Environmental Services Cooperative Agreements. The work completed under the Navy Environmental Services Cooperative Agreements is reported separately by each respective party. This MPR discusses progress made during the reporting period from January 28, 2005 through March 3, 2005. The information provided below includes updates to field work and removal actions; document submittals; and the progress of regulatory reviews, issues associated with Navy environmental programs, and Remedial Project Manager (RPM) and Restoration Advisory Board (RAB) meetings.

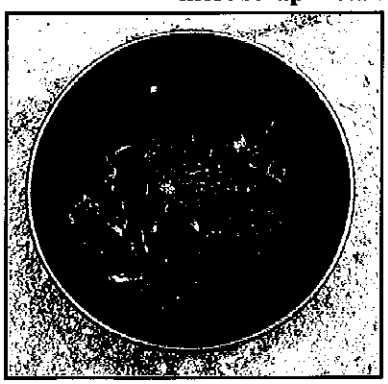
2.0 FIELD WORK AND REMOVAL ACTIONS

During the February reporting period the Navy hosted a Controlled Detonation Chamber demonstration by the Army Corps of Engineers. See Section 3.0 for details. Currently, no field work is scheduled to for the March reporting period.

BEFORE

A 3-inch projectile prior to its detonation in the chamber.

A view of the 3-inch projectile after it was detonated in the chamber, resulting in inert scrap metal.



AFTER

3.0 INNOVATIVE TECHNOLOGY DEMONSTRATION

From February 22 through 24, 2005, the Army Corps of Engineers contracted a professional firm, DeMil International, Inc., owned by CH2M Hill, to conduct a demonstration of the Controlled Detonation Chamber (CDC) in the Western Magazine Area at Mare Island. The demonstration was part of a larger study by the Army Corps of Engineers to evaluate the cost and performance of the CDC in disposing of munitions. The CDC can handle approximately 13 pounds of net explosive weight at one time. Munitions are safely prepared with a donor charge, detonated in the contained chamber (pictured below), inspected to ensure there are no residual explosives, and then the inert scrap metal is cleared from the chamber for appropriate off-site disposal.

On February 24, 2005, RAB members were invited to the site to see this technology up-close. Tyler Boswell of DeMil International Inc. served as a guide for the group, describing the process, and then carefully escorting everyone to the exclusion zone 660 feet from the CDC, before the actual detonation took place. For the demonstration a 3-inch projectile (pictured left) was wrapped in explosive sheet material, placed on a hook in the middle of the CDC, and detonated. The resulting blast was minor, emitting a small sound heard by the group.

The Army Corps of Engineers is continuing their study, transporting and using the CDC at many locations along the West Coast. The CDC is effective at handling small munitions, though it is limited in the size of munitions it can handle, and the cost-effectiveness for future use at Mare Island has yet to be determined.

RAB members Myrna Hayes (far left) and Diana Krevsky (far right) stand in front of the CDC with Senior Chamber Operator Tyler Boswell.

4.0 DOCUMENT SUBMITTALS AND PROGRESS OF REGULATORY REVIEW

The Navy submitted six documents to the regulatory agencies during the February reporting period. These documents include the following: 1) Draft Work Plan, Time-Critical Removal Action Marine Corps Firing Range and Historic Outfall Feasibility Study; 2) Draft Investigation Area FI Remedial Investigation Report; 3) Confirmation of groundwater monitoring well abandonment for conditional closure of Building 505 underground storage tank; 4) Draft Paint Waste Area PA/SI Report; 5) Draft Conceptual Site Model Technical Memorandum for Investigation Area K; and 6) Draft Watershed Contaminated Source Document.

The Navy received 6 comments from the regulatory agencies during the February reporting period. The DTSC, Water Board, and the EPA submitted comments on the Draft Engineering Evaluation/Cost Analysis for Investigation Area (IA) H2. In addition, the DTSC and the Water Board submitted comments on the Draft Work Plan for the removal action at IA H2. The DTSC submitted comments on the Draft Final Site Management Plan for Fiscal Year 2005.

5.0 POTENTIAL EARLY TRANSFER PARCELS

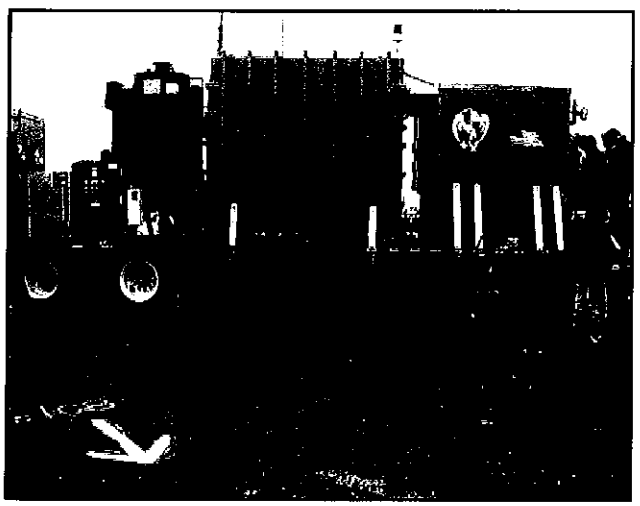
Early Transfer of Property at Mare Island

Weston:	Remainder of Regional Park (Parcel VII-B)
Lennar:	Reuse Area 1 (Parcels II and XV-B)
	DRMO Site (Parcel XVII)
	MCFR Site (Parcel XIX and portion of I)
	Reuse Area 10 (Parcels V and VI)

The Navy continues to work with the City of Vallejo to make progress on the early transfer of the parcels listed above. The Navy met with the City on February 10, 2005 to discuss the path forward for early transfer. The Navy and the City discussed recent changes at Reuse Area 1 as well as the conceptual path forward to address all of the parcels listed above. The Navy's goal is to include all remaining properties scheduled to transfer to the City of Vallejo in one early transfer. These parcels are listed above. Future transfers will be based on reaching agreements on property transfer schedules and acceptable cleanup cost proposals.

Number of Documents Submitted by the Navy in 2005	8
Number of **DTSC** Comments Received by the Navy in 2005	2
Number of **EPA** Comments Received by the Navy in 2005	1
Number of **Water Board** Comments Received by the Navy in 2005	3

A view of the entire CDC. At the far right, community members look into the empty chamber, which flows into an expansion box in the middle, and then the blue filter.



RESTORATION ADVISORY BOARD MEETING SCHEDULE

Thursday, March 3, 2005*
Thursday, March 31, 2005
Thursday, April 28, 2005

Meetings begin at 7:00 p.m.

*(Note that the February meeting has been moved to March 3)

Location: John F. Kennedy Library
505 Santa Clara Street
Vallejo, California 94590

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http://www.efdsw.navfac.navy.mil/EnvironmentalMareIsland.htm