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RESTORATION ADVISORY BOARD MEETING

THURSDAY, MAY 16, 2002

CORONADO, CALIFORNIA

REPORTED BY: Nancy A. Lee, CSR No. 3870

ATTENDANCE:

John Locke
Bob Geilenfeldt
Bill Collins
Rich Wong
Charles Perry
Robert Campbell
Anita Boyd
Foster Marshall
Lynn Keeling
Tom Tate
Jennifer Starling
Catherine MacGregor
Bill Kinzler
Dottie Marron
Leticia Hernandez
Jerome Johnson

CORONADO, CA., THUR., MAY 16, 2002, 6:40 P.M.

MR. LOCKE: Good evening, everybody. Welcome to the 74th Restoration Advisory Board for NAS North Island and Naval Amphibious Base Coronado.

Tonight one of the first agenda items is approval of the meeting minutes from February 28, 2002.

Can I get a motion to approve the minutes?

DR. MARSHALL: So move.

MR. COLLINS: I'll second.

MR. LOCKE: The meeting minutes have been approved.

I'm going to go through the agenda. Our first agenda item is Site 9 Removal Action. Site 9 is a large chemical waste disposal area, and we're doing some SVE and steam injection to improve the SVE efficiency and some water table skimming.

Site 5, Time Critical Removal Action, that's going to be a chemical oxidation of some solvents -- chlorinated solvents that we're planning on doing.

Recap of the Flower Show, which that

was a few weekends ago, and new member introductions. We have some new people here.

I don't know, would we rather do that now?

MR. GEILENFELDT: I think so, yes.

MR. LOCKE: Why don't we start with Charles there or we can go further.

MS. BOYD: I'm Anita Boyd, and I work with the contractor that sets up the meetings, so I'm with DSP.

MR. PERRY: I'm Charles Perry with Southwest Division. I have some North Island and NAB projects.

DR. MARSHALL: I'm Foster Marshall. I'm an older member -- an old member of this Board, and I just work out in San Diego.

MS. HERNANDEZ: I'm Leticia Hernandez. I work with the Department of Toxic Substances Control. I'm the public participation specialist for NASNI.

MS. MARRON: I'm Dottie Marron, a community member of the RAB. I live in Coronado.

MR. LOCKE: My name is John Locke. I'm the Navy Co-Chair of the meeting.

MR. GEILENFELDT: My name is Bob

Geilenfeldt. I'm City of Coronado Co-Chair. I live in Coronado.

MR. COLLINS: I'm Bill Collins. I'm the lead Remedial Project Manager for North Island.

MR. CAMPBELL: I'm Rob Campbell, North Island Remedial Project Manager for Southwest Div.

MR. KINZLER: I'M Bill Kinzler, a resident of Coronado on Coronado Avenue, 720. I back up on the 4th hole of the golf course.

MR. WONG: I know where you live.

MS. MacGREGOR: I'm Catherine MacGregor. I'm a resident.

MS. STARLING: Jennifer Starling, resident.

MR. TATE: Tom Tate, the oldest one here.

MS. KEELING: Lynn Keeling, almost an x-Zonie like Tom. Got a place over here and have been practicing in the environmental area since the early '90s.

MR. GEILENFELDT: And this new gentleman who got here at the last minute.

MR. JOHNSON: I'm Jerome Johnson, Coronado resident.

MR. GEILENFELDT: Thank you for attending.

We do want to especially thank all of you for taking the time to come out and be involved

in a very important area of safety and security for Coronado. The Navy does a great job of making sure that they take care of these old wastes, if we can use that term, and we want to be sure that we have citizen input just like you to make sure they're doing it to our desires.

And, again, we really appreciate all of you attending this evening.

MR. LOCKE: Welcome, everybody.

We're going to start the meeting, and our first agenda item is from our project manager Bill Collins.

MR. COLLINS: I'm actually not going to give you a presentation with slides. Frequently we just give a short update on this project, which has been going on for several years, but I do need to show you where Site 9 is.

It's over in the area right here, just north of the weapons area. If you've ever taken your relatives out on a tour of the harbor and taken the long trip -- you go by the pier, occasionally see a ship out there -- so that's the old chemical waste disposal area.

That part of the island was used from the late 1940s up until the middle 1970s just to

dispose of waste. People would truck their waste out there and dump it. So that site collected over these years solvents, plasticizers, waste oils, some waste gasoline, all kinds of paint thinners and sludges, and the heavy metals that were trapped in these cleaning solvents, too.

All of this junk, we would call it now, went out there but you've got to remember back in the '40s, really, there was nobody out there to bother, and it was a very convenient place. In fact, the activity had nothing going on at North Island.

Anyway, towards the early '70s or whatever, the wastes were determined -- they were looked into and there were incompatible wastes. Unfortunately, when you add incompatible wastes to each other, frequently you get fires. They generate heat. They have an adverse reaction, generate a lot of heat, catch fire, burn off some of the fuel, and the fire department on North Island got tired of putting out the fire, so they rearranged the site and put in four trenches -- four sand trenches to take the waste. And this actually turned out to be half good because it did keep the fires from happening again.

What the segregated waste then did mix, everything was fairly happy, if you were a chemical out there, anyway. Unfortunately, those ponds leaked, just like the old dumping grounds had leaked, so a lot of this stuff got deep into the soil and then eventually to the groundwater.

MS. KEELING: Did they originally have lined ponds?

MR. COLLINS: Not right there, no. This was Mother Nature just used the way she was, and that's before we had any laws that required ponds to be lined.

Anyway, this material got into the ground, eventually soaked down. Some of it did make it to the bay and some still continues to leak out, about 7 kilograms a year.

I've never figured out how to do that in volume. What's 7 kilograms?

MR. WONG: 7 kilograms, that's weight, so the mass -- dependent on the mass, the unit weight of --

MR. COLLINS: How much more than a gallon?

MR. WONG: I don't know. Maybe on the order of 4 to 10 gallons, something like that.

MR. COLLINS: At the most.

MR. WONG: Right.

MR. COLLINS: What we did back in the 1980s, we started an investigation out there, looking into what kind of contamination was there and how to clean it up because new environmental laws were coming into effect.

CERCLA, the Comprehensive Environmental Response Compensation and Liability Act came into play, and a lot of people look at that now and call it Superfund because a few years later that act had to be re-authorized and the government had to put more money into it and expand it a bit.

Anyway, we fall under those regulations, so we're out there to investigate it and clean it up the best we can.

MS. KEELING: Is this a Superfund site?

MR. COLLINS: It is not a Superfund site. There's a funny thing. Some sites end up on the national priority list and U.S.EPA provides either the leadership or the guidance to getting it cleaned up.

With the military, the military is assigned the lead. Congress wrote that into the law and gave it to the President. The President gave it to the Department of Defense. So we're the

lead.

And in our case, because we're not a Superfund site and because of other things, mainly we have a RCRA permit to operate the industrial waste treatment plants to treat, store, dispose of hazardous waste. We have a permit to operate that, and then we have obligations because of the permit to also clean up the site. So we have two different laws coming at us -- at least two different federal laws and several state laws directing us to clean up the site and investigate, so it's a complicated story.

And so DTSC -- and our DTSC project manager can't be with us tonight. He's tied up in another meeting. But Daniel Cordero is usually here with Leticia, and he's my technical counterpart.

So what we did, anyway, after investigating for many years, we came to the conclusion that it was time to clean up some of it, so we took a manageable piece of this problem, and I say "manageable" because millions of gallons of waste were dumped out there.

So we chose to clean up, to the best of our ability, the solvents that were still in the

soil that hadn't gotten to the groundwater, and we came up with a removal action -- not the final cure, but a removal action to take care of this, and went about designing a system to collect soil vapors.

This system allowed us to pump fresh air into the ground, and we would cause some of the vapors in there to break their bond with the soil or whatever little groundwater is down in there, and they would off-gas. We had horizontal wells in there, and we would catch these vapors. We set up a current and pulled these vapors off and then ran them through a treatment process, stripped them out of the air, and eventually condensed the vapors into a liquid, stripped the water off of it, and then we disposed of the collected solvent at a hazardous waste disposal or permitted facility, and that's what we were doing.

Over time, I think if you read through here, we found that we couldn't quite get it all. Every time we thought we were done pumping -- there would be no reward for a month or two, and it's like we're wasting time. We'd turn off the machine and we'd see if it would rebound. And, unfortunately, there were a couple of areas that

did rebound.

So we did some more investigations out there, and what we had thought was merely a minor problem turned out to be a big problem. We had more fuel out there than we thought, and this fuel was holding the solvents, trapping it and only gradually releasing it, so we couldn't get it clean.

So we've redesigned our system now, and through a pilot study we've learned that if we heat the ground up just a bit, we don't get it quite boiling but we get it into the high 100s, I think you'd say. What this does is it causes this old fuel to become more mobile. It's kind of like taking pancake syrup out of the refrigerator and trying to put it on your pancakes and it just won't do it, and then putting it in the microwave for 30 seconds, and the difference you get. It just increases the mobility of this liquid, lightens it up, and we can actually through wells pull this fuel off, and we also pulled some of the solvents with it.

And then we also can, through soil vapor extraction, get more of the contaminants off. Some of it not only just flows better, some starts

to eventually evaporate underground, and we catch those vapors. That's what we found in the pilot study.

At this point we are set up. We have our wells in place for injecting steam. We have our wells in place for collecting soil vapors and for collecting free product. We're ready to go, and this week we are operating collecting free product and soil vapors. The only thing we haven't done is we haven't applied the steam to it yet because there are a couple more things we need to build.

We're building a small water treatment plant because as we collect this material, we're going to capture the top six inches of water. And you think there's not much there, but there's quite a bit of contamination there, and because of the way our pumps operate, it can't shut off and on quick enough only to get fuel. So, unfortunately, they're a little late, so then they draw water. So it's better for us to just capture both, a little bit of water with the fuel. We'll treat it. We'll treat our groundwater at the site, and then we will discharge it at the site, too. We have a plan for using it to irrigate, and also for recharge to the

aquifer.

The solvents we will catch once again just as we did before, and they will all be eventually shipped off site. In fact, every 90 days we will be shipping a batch of contaminants to another site.

So that's Site 9 in a snapshot. Site 9 has got so many problems and had so many investigations, we could probably spend two or three hours talking about just this one problem.

MS. MARRON: I have a couple of questions.

MR. COLLINS: Okay.

MS. MARRON: The soil vapor extraction, where on Site 9 is that being done? It's not covering the whole site, right, but just in a certain area.

MR. COLLINS: That is correct.

MR. WONG: I can pull it up on a map, if you'd like. It might take a second.

MR. COLLINS: Did you ever take the RAB tour that we had?

MS. MARRON: Yes.

MR. COLLINS: Essentially it's in the same spot. Right over the old fiery marsh and the old trenches on the other side of the road.

MS. MARRON: So it's just in that area of Site 9.

MR. COLLINS: Right.

MS. MARRON: I have another question, too, about the amount of waste that's going into the bay.

You said it's just a small number of kilograms, but my understanding was that what is reaching the bay now is simply the leading edge; that it took 50 years for that to reach the bay; that it's now been 50 years and so that toxic waste is now reaching the bay, so that's why it's a small amount but that could increase.

MR. COLLINS: That's a good question. And actually it's difficult to tell when it did reach the bay because there's nothing in there that we can accurately date mostly because nobody paid attention.

MS. MARRON: So right now it might be a small amount, but that could become quite a large amount.

MR. COLLINS: Although it could possibly increase, it may be at the point where it will never because there's only a small window for it to go through, and there's only a small physical

connection. Most of it is sunk down deeper, so you're only going to get a smidgen anyway compared to the millions --

MS. MARRON: Sunk down deeper than the bay?

MR. COLLINS: Way down. Hundreds, maybe a thousand feet, and it won't be capturable.

MR. LOCKE: Also, we altered some wells that were in the area.

MR. COLLINS: Yes. When you were last here before you went on your vacation overseas --

MS. MARRON: My Middle East excursion.

MR. COLLINS: -- at that time we had found that we had some wells, and we thought that these wells were improperly built because we had more geology information a couple of years after collecting data than we did before, so we redesigned the wells and we officially abandoned the old ones. Plugged them with concrete so that there was no more communication.

But I can tell you one good thing about this because we're in the process now of fixing up our Feasibility Study, which will be released this summer; and if you join the RAB, you'll be able to get a chance to read it if you want to. It's a long read. I'm in Volume 2 of 3 after about 30

hours.

And we are proposing a groundwater pumping system method that will actually over time pull stuff back from the bay. So after a period of time, nothing will ever leak again.

MS. KEELING: Change the flow.

MR. COLLINS: We'll change the flow. We'll pull it back inland.

And we have to do it just right so that we don't pull the plume closer, too. We have to keep it carefully balanced, but we can do it. We have a plan, and it's quite effective, too.

So that's a snapshot of what's going on at Site 9. The only area where we're not introducing the steam, Dottie, is in the old Area 3, which was near those buildings just north of the weapons center. That area responded very favorably and there was no rebound.

MR. GEILENFELDT: So you're not using hydrogen peroxide processes in this one.

MR. COLLINS: Oh, no. This one is physical extraction of the contaminants.

MR. GEILENFELDT: You're actually pulling it out of the ground.

MR. COLLINS: Pulling it out, yes.

MR. GEILENFELDT: Incidentally, for all you new attendees, this gentleman, Bill Collins, is our chief engineer for this entire project. So he's the man you want to address if you have any questions or otherwise.

Thanks, Bill.

MR. COLLINS: You're welcome.

MR. LOCKE: Thank you, Bill.

This Site 9 work has been a long time coming, this new phase of it, and it's just getting ready to be up and running. So by the next meeting I think we'll --

MR. COLLINS: We should have some good stories.

MR. LOCKE: Yes.

DR. MARSHALL: Let me ask you a question of pounds versus gallons. You said there's probably a million or more gallons that were put in there.

Tell me how much 183,000 pounds is in gallons.

MS. KEELING: Twelve pounds?

DR. MARSHALL: Is there any way you can tell us that?

MR. COLLINS: It depends on what you're pumping. If it's fuel, it's going to be lighter

than water; and if it's these other ugly compounds, it would be heavier.

Most of our stuff is -- if you say it's about the same as water -- a gallon of milk or a gallon of water weighs 8-1/2 pounds?

MR. WONG: Eight and a half pounds a gallon.

MR. COLLINS: I get the two mixed up. But it's between 7-1/2 and 8-1/2 pounds to a gallon of milk. That's how I picture it.

DR. MARSHALL: So you divide 183 by 8, maybe?

MR. WONG: In round numbers. What we looked at on that slide was that's the total amount of mass that we removed to date. But, remember, some of it's in liquid, some of it's in vapor, and we convert all of that into total weight.

DR. MARSHALL: So we really haven't hit much of that million yet, is what you're telling me.

MR. WONG: No, but we've done a lot of good work.

DR. MARSHALL: I realize that. I'm not being negative.

MR. WONG: And the other thing Bill mentioned, but we should emphasize, is that we really so far to date have only really dealt with

that top of the cake. As Bill mentioned, the problem is several hundred feet down. So we've still got plenty of work to do.

MR. COLLINS: And it's very difficult to get out of the ground. It's like getting an ink stain out of a rug. It is hard.

MR. WONG: That's a good analogy.

MS. KEELING: Bill, is there some point that you may be able to predict that you stabilize it?

MR. COLLINS: Stabilize the groundwater so that it doesn't go to the bay?

MS. KEELING: Or --

MR. COLLINS: I'm sure there will be, but we'll have to -- once we pick our cure and what we're going to do, and that will be done with community input and more state input and whatever, and pick what's reasonable for the dollars that could be spent, we'll do some more testing, and then they'll be able to predict how much time it is before the stuff is pulled back and then you no longer see anything leaking. And, of course, all of that time we'll be monitoring.

MS. KEELING: So it's kind of an iterative process.

MR. COLLINS: Yes, very iterative.

DR. MARSHALL: Let me ask one more question.
MR. COLLINS: Yes.
DR. MARSHALL: I'm going to go to medicine. If I have a blood clot in my brain, it sits there but eventually it gets bigger and bigger and bigger because it absorbs out of the body.
Could this do the same thing so that we'll always have to do something to it?
MR. COLLINS: I can answer that one.
As the chemicals down there dissolve away from what we would call the DNAPL -- that's the dense non-aqueous phase liquid. That would be like solvents. They're heavier than water. That's why they're called dense -- they are trapped down in there in little droplets here, there, and everywhere. There's no such thing as a huge plume that we can just put wells into and just pump and pull it off. They're scattered. They're hard to find.
And over time if we cleaned out all of the water that's there with all this dissolved contamination, and then the area fills back up with fresh water, those contaminants that are still trapped there as drops over time would start to dissolve a little bit more and recontaminate that

area, and then we'd have to pull it all off. This site could take several hundred years to totally clean up.

DR. MARSHALL: Will the sludge absorb anything and form a bigger mass and sort of protrude itself up?

MR. COLLINS: I don't think with this one it's going to become bigger. The plume is about as big as you're going to see.

DR. MARSHALL: Okay.

MR. COLLINS: There's always a chance on the edge that you might not catch something and it could dissolve and spread a little bit more. But in our case the water -- the flow of water underground through the little pores is all pretty much in one direction. So it's not going to be like creeping backwards and coming towards Coronado.

DR. MARSHALL: Okay. Thank you.

MR. COLLINS: Okay.

MR. LOCKE: Any more questions?

MR. GEILENFELDT: Any other questions?

MR. LOCKE: We'll go to our second topic, which is the Site 5 Time Critical Removal Action by the golf course.

MR. WONG: Thanks. I'm going to introduce myself. My name is Richard Wong. I'm with the IT Corporation.

Recently, just FYI, our company has been acquired by another company, so probably by the next RAB meeting I'll be saying I'm Richard Wong of the Shaw Environmental & Infrastructure Company, but those things really are just administrative, and our team is still in place. We're still doing work at North Island.

My talk tonight will mention what's going on at Site 5 - Unit 2. I'll show you a map where the site is located.

I see that we have some new visitors here tonight, so I'm glad I provided some background on the purpose of our work out there, and what we've already accomplished to this date and what we've got planned in the future.

Mark Bonsavage is the Navy RPM, Remedial Project Manager, for this project. He's currently on assignment and wasn't able to join us tonight.

What I'd like to do is give you a brief background, indicate where the site is located, the history, some of the geology, the waste practices

that contributed to the contamination at the site.

We'll talk about what our objectives are for this removal action, and talk about some of the work that we've accomplished to date, including the removal of some source soil at the site as well as the performance of the pilot test.

The focus of the talk tonight will go over what we have planned for the full-scale treatment at the site, and then we'll conclude with what we've got planned at the end of the talk.

IR Site 5 - Unit 2 is located on the approach to the main runway. Here's the golf course. Here's Ocean Avenue; and I think one of the gentlemen lives in this general area, if I'm not mistaken. The site is about 1800 feet away from the community of Coronado.

A little bit of background: As with Site 9, this site was a chemical waste disposal area. Unlike Site 9, the volume of contamination that was sent to this site was not nearly as significant, but nonetheless, did include contaminants such as solvents, petroleum hydrocarbons, and some miscellaneous debris.

The geology at the site is really defined by the pre-existing condition of North

Island before they dredged and filled the middle portion of North Island, and I'll show you a figure or a photograph that illustrates that more clearly.

But essentially we have a very shallow aquifer as opposed to what Bill described at Site 9 on the order of several hundred feet of contamination. Our contamination is relatively confined to the upper portions of the aquifer, so from about 5 to about 20 feet below ground surface is really where the bulk of the contamination resides.

This site has been studied numerous times as well, and some of those previous investigations have determined that natural processes are currently degrading the plume. However, there's sufficient mass there that it could still make it to a sensitive receptor, which is a slough that's located right here just a couple hundred feet away, and that's in direct contact with the ocean. So clearly we want to remediate that before it reaches that receptor and contaminates it.

MR. GEILENFELDT: How close is that, Rich, to Doggie Beach?

MR. WONG: This is the boundary between the

public beach and the city beach or the NASNI portion. Just guessing I would say it's about 2000 feet away, Bob.

MR. GEILENFELDT: Thank you.

MS. KEELING: What's a slough?

MR. WONG: A slough is a small channel of water. It's not always fully wet. At certain times it's dry. And it's connected and it drains the storm drains that come off of the runway and some of the other areas. They empty into the heads of the slough, and then that water then discharges into the Pacific Ocean. All of that storm drain testing, that was the subject of another discussion that we had at this meeting, and we're not focusing on that.

But the objective of this removal action is really just to remove a sufficient amount of mass so that then we could then rely on the natural processes to continue to degrade the plume. What we're trying to do is accelerate that process and reduce the risk to the environment.

Here's the map that I was referring to earlier. This is an old navigation map that was prepared before North Island was filled, but you can see that actually there was a shallow embayment

in between the two land masses. During the '40s, this area was filled with dredge material taken out of the bay, and that really defines the soil conditions and the groundwater conditions we had at the site in that there was a shallow embayment so there was some bay mud and that really restricts the contamination from moving downward.

Here's a photograph taken before the island was completed into its current configuration, and we're looking in a little different perspective. This is the Pacific Ocean out in this area and Point Loma at the top of the figure, and this is San Diego Bay. But, again, you can see that the site is located on these shallow mud flats.

Here's an aerial photograph taken in 1945, and the reason I provided this photograph is just to show you that here are the locations of the two former hazardous waste pits where the dumping occurred.

A little bit more background: IR Site 5 is actually broken up into two units. Unit 1 pertains to the former municipal landfill. We're really not dealing with that. Unit 2 pertains to the VOC plume, the volatile organic groundwater

plume that was generated following the dumping into those two pits. And here's the slough again.

A little bit more background to help us define the problem a little bit better: we actually conducted our own investigation, and this is just a still taken from a computer model that shows the distribution of the contamination in a little bit finer detail. The redder, warmer colors indicate more contamination, and just keep in mind that this pit is slightly more contaminated than the other one. I'll tell you the reason why in just a few minutes.

MS. KEELING: What's the second red box for?

MR. WONG: There were two pits. This is the eastern most and that's the western most pit.

Following the investigation that we just saw the results of, it was determined that there was soil in the eastern most pit that had the potential to recontaminate the groundwater even after we cleaned up the groundwater, meaning that if there was precipitation or some sort of water movement through that unsaturated soil, it had the potential of recontaminating the groundwater again. So, clearly, we didn't want that to happen.

In order to mitigate that potential,

back in December 14th of '01 we actually completed an excavation of about 600 cubic yards of highly contaminated soil, and that was also the subject of a talk that we had previously, but that went off well. We understand that there was a lot of concern about how we handled that, but I think that couldn't have gone off better. There were no fugitive emissions that even came close to the community of Coronado. It was all conducted at night, and by the next morning we had the golfers enjoying their weekly round of golf.

Here are some photographs that I've put in just to show you what we really did during that excavation. I know some of you have seen this before, but I knew there would be some new attendees, so I thought you folks might be interested in seeing how we actually conduct an operation such as this.

One thing you should note, we were also concerned about fugitive vapors being created during this excavation, but you note our geologist that's overseeing the excavation, he's not wearing any sort of respiratory protection. The reason why is he didn't need to. So we're monitoring for those contaminants continuously.

In order to mitigate the release of fugitive contaminations after we've excavated the material, we actually place them into sealed bins. So stead of just treating piles and covering them up that would still have a high likelihood of releasing contamination, we actually place them into these sealed bins.

Here's a photograph that illustrates when we're getting close to the bottom of the excavation. It's very difficult to see, but our excavation extended into the groundwater. The theory is that we can't treat material above the groundwater table, but we can treat it below with the process that we'll talk about in a few minutes.

This is just a photograph where we're backfilling the hole. The reason why I inserted this photograph, I just want to make note of this Pvc riser pipe that you're seeing in the photograph. That's actually connected to some horizontal wells that were placed at the bottom of the excavation so that when we go to our full-scale treatment that we'll talk about in a minute, we'll actually be able to concentrate the treatment in the most contaminated area.

What are we going to do for full-scale

treatment? We're going to use a process called In Situ Chemical Oxidation. Unlike the process that Bill talked about at Site 9 where that's a mass transfer technology, we're actually taking the mass out of the ground, collecting it, and taking it off site. This process is actually in situ or in place destruction of the contaminants.

The way we achieve that is actually taking a page from the waste water industry in that we inject an iron catalyst. We inject hydrogen peroxide, which is the H202. And in the presence of an acidified environment, it produces what is called the hydroxyl radicals, and that's one of the strongest oxidants that we could produce. The strength of the oxidant actually breaks the bonds between the chlorine, the carbon bonds that make up some of these solvents, and we actually degrade or destroy those compounds into very inert or non-threatening elements.

Why did we choose in-situ chemical oxidation? Well, as I said, this is a powerful technology. We don't have to haul waste. We know that the citizens are concerned about hauling wastes. We were able to facilitate complete oxidation of these compounds into CO2 chloride as

well as water.

It's very cost effective. Since we're not building a large engineered system, we don't need a lot of above-ground systems. And as I mentioned, we eliminate the need to transport waste off the site. And probably, more importantly, if you remember that the site is located on the approach to the major runway, clearly we could not put a large engineered system because that's the path that the jets take to return to base.

Once we decided that this technology was the technology we wanted to deploy, we performed a pilot study. That pilot study was also a discussion of a previous investigation. I'll just give you the highlights.

We saw significant mass reduction during the pilot study. We were able to determine that this technology was suitable for what we intended to do, which is mass removal. We saw indications that the reaction was actually occurring; that the true reduction in the contamination was not a result of dilution, and we also saw that even though we injected some chemicals into the ground, that the aquifer actually returned to near pre-treatment conditions,

meaning that the dissolved oxygen levels returned to what we saw before we treated, so that was also favorable for this technology.

And probably, more importantly, we actually saw this technology was able to treat the highly contaminated soil beneath the groundwater, and that was an important finding as well.

So now that we have completed the excavation, we've completed the pilot study -- two check marks, so we've taken care of a potential source that could recontaminate -- we've concluded that this technology is a viable technology. We're currently in the process of our full-scale treatment. And what we're intending on doing is just trying to knock down that highly contaminated source area.

Our performance goal is to reduce the overall concentrations by about 90 percent, and we're thinking that we could accomplish that in two to four injection events.

Once we think that we've achieved those goals, we'll allow the site to rebound over a period of about a month, take another set of samples to make sure that the groundwater at the site has not become recontaminated.

Here's a figure that depicts our conceptual well field, and essentially this darker, irregularly-shaped area, that will be the area that we'll treat first.

Currently -- I apologize because I don't think this photograph is in your packet. It was just added at the last moment -- but just last week we started the installation of about ten groundwater monitoring wells. These wells will be used to gauge the effectiveness of the treatment. So we'll collect water samples now and then following the treatment, compare the results, and that's what we'll use to determine the effectiveness.

MS. KEELING: How deep are those wells and about how much are they costing per well?

MR. WONG: The wells vary in depth, but in general they're about 15 to 25 feet below ground surface, and I think our PO is running us about $1,500 to $2,000 a well.

Here's a soil sample that we collect. Of course, we want to place our wells in the most logical location and depth to collect the most correct samples. So what we do is we take continuous soil samples until we hit the top of

that bay mud that we mentioned earlier in the talk, and here's just a sample of actually showing you the bay mud that defines the bottom of our contaminated aquifer.

A little bit different in terms of the way we conducted the pilot test versus the way we're going to go full scale. In our full-scale application, we're going to use a technique that has been taken from the geotechnical compaction grouting arena, but what we intend to do is place a steel tube about two inches in diameter. There'll be a special nozzle at the end of that steel tube. We'll actually pump sand into the subsurface trying to create a lens so that we can distribute these oxidants over a wider area and try to overcome some of the difficulties involved with in situ technologies which are variability and the distribution of the contamination as well as the variability in the geology.

This is a photograph that shows a sand lens on another site. They actually cut a trench to verify that these lenses are placed. So the oxidants would be injected into this lens and allow it to distribute more uniformly into the subsurface.

Here's the rig that could be used to create that sand lens. What happens is sand is placed into the hopper. They use a food grade starch and that creates a slurry and that's pushed out into the subsurface.

This is not the way our site is going to be set up, but I thought you folks should see that basically the operation is not as technically challenging as what we're doing at Site 9. We'll have drums of hydrogen peroxide right off of the site, some ferrous sulfate -- that's the iron catalyst that helps facilitate the injection -- a couple of mixing tanks, and some pumps that's put into the ground.

Our site will be set up a little bit differently. We'll have containment beneath those drums so in the event of a spill it will be captured, and we would likely have our site fenced in to help keep any sort of unauthorized personnel from entering the site.

Here's just a photograph of that smaller site, and here is the pumps that are used to inject the oxidants into the ground. It's pretty simple but electronically controlled, and we control both the pressure as well as the volume of

oxidants into the subsurface.

I think that's all I really had, Bill.

Any questions or comments?

MS. MARRON: Is it only VOCs that are at that site or is there DNAPLs and other things that are going to have to be tackled?

MR. WONG: Well, VOCs and DNAPLs sometimes are used in the same context. We do have some fuel hydrocarbons, but essentially the fuel hydrocarbons aren't really driving the risk. It's the vinyl chloride predominantly is what's driving the risk and it poses the greatest risk to the environment.

In fact, the LNAPL and the fuel hydrocarbons that were deposed at the site actually are beneficial in terms of allowing the natural processes to continue to degrade the plume after we're done with this treatment.

Remember, we're only hoping to remove about 90 percent of the mass. So even at 10 percent there's going to still be a concentration that will still require treatment following our work.

The purpose of our work is really just to accelerate that natural process.

MS. MARRON: Okay. That's 90 percent of the

VOCs.

MR. WONG: Right.

MS. MARRON: But as we've seen with Site 9, sometimes clean-up methods don't work with one particular type of contamination, although they work extremely well with another type.

So is this something where one should clean up this particular contamination and then we're going to have to go and try another method to clean up some other contamination?

MR. WONG: That's a great observation.

Actually, this process treats any organic matter, so whether it's fuel hydrocarbons or vinyl chloride or chlorinated hydrocarbons, it will degrade both.

That's not what we're thinking at this point, but clearly we'll look at that based on our follow-on groundwater sampling and testing that we'll conduct afterwards. If there's something that we didn't suspect, then Bill and the Navy will have us take a look at it.

MS. MARRON: Okay. I remember that Site 5 seemed to be like the surprise site. Things always seemed to pop up there.

MR. COLLINS: Well, that could be anywhere.

MS. MARRON: It's always seemed that other things -- there was the exposed carbons or something on the landfill site. I mean, there were just little things that did seem to pop up there all the time.

The other thing I wanted to know was you said you're going to be stopping your tests and then letting it go for a month or so and then checking for rebound.

MR. WONG: Right.

MS. MARRON: If this stuff rebounds, and I assume we're going to have to look at possible long-term treatment, but in the minutes from last week it said that the Navy was concerned about this because it could adversely affect operations.

How is the Navy going to react to any long-term plans for cleanup and will they affect operations?

MR. COLLINS: If we have to treat again after this period to allow for rebound, we'll most likely go in and treat one or two more times after that. By that time we should have achieved our objectives or gotten very close to it.

What will happen is this removal action will be terminated and we will go about finishing

the study of the area -- the feasibility study which looks for other options for handling things like you just said: residual contamination is a little bit more than you thought. What are the ways that that can be handled? And we'll also look at monitored natural attenuation. We know that that's working at the site very well right now.

And it will look at other problems for the groundwater or for the soil. What do we do to come up with the final decision on what it takes to clean up this site.

And the public will be involved in that, too. But by that time, this problem should have been knocked down such that over a very short period of time -- relatively short period of time the site would naturally clean itself up from the VOC problem. There may be other things that we discover that we want to come in and tap it for some other reason. We may want to put a cap over the landfill just because it seems to be smart.

So there's room for more cures to take care of any remaining problems at Site 5, but this one here takes care of what we would call more of an immediate problem. It's a bite-size chunk that we can get at, and this is the way EPA prefers to

do things, too. Because it takes so long to complete a thorough study of any one site, most sites are very complicated and takes many years to go through the studies to find out what you have and the studies for feasibility on how to cure it, and then all the discussions on what remedies to pick; and then, of course, you design your remedies, and then you carry out your remedies which may take as little as three, four months after ten years of study or it might take you four or five years or 30 years to clean up a site after that.

When you look at it and you say in some cases "Well, I could have got that little problem if I'd have come in and done a removal action and then I'd be done with it, and I wouldn't have to look at that again when it came to making these other decisions ten years down the road."

So our goal here is to get in there and get this little sore off the ground, take care of it, and then come back in and deal with the whole body -- the whole site later, except it will be missing one thing. It will be missing the plume.

MR. WONG: Anybody else?

MR. COLLINS: But there's a lot more to

happen.

MS. KEELING: I know you don't want to talk about the landfill, but I still have a couple of questions anyway.

MR. COLLINS: Okay.

MR. WONG: Bill is more knowledgeable about the landfill.

MS. KEELING: I was kind of curious as I'm coming up to speed on it.

Was it a dry or wet landfill? Was it far away from where you're cleaning up?

MR. COLLINS: It was your basic garbage dump. If you've been out there, the end that's on the -- the end to the right where the golf course clubhouse is, that area was more of a municipal garbage dump. At the other end there was more in the way of incinerated ash material because the base used to have an incinerator operating for many years and dumped the ash somewhere.

So there's two types of garbage out there, essentially.

MS. KEELING: So it probably was nonfunctional quite a while ago.

MR. COLLINS: Yes. This was operated from the middle '40s until 1960, and then it was -- then

after that point the Navy decided to ship all of its garbage off base.

MS. KEELING: My, that must be an interesting work deal.

MR. COLLINS: I don't know what the bill is. There's a lot of trash that leaves the base.

MS. KEELING: But that explains why you haven't looked to a cap because you haven't had to, at least.

MR. COLLINS: We never were required to, but when we get to the end and we look at it, this will be something we'll be discussing with the neighborhood and with the state. Maybe there's no need for a cap. And then, again, maybe we'll decide there is.

MS. MARRON: Isn't there a cap because there was a time critical removal action, wasn't there, at Site 5 at an exposed cut or exposed --

MR. COLLINS: No. That was the other landfill.

MS. MARRON: Oh, okay.

MR. COLLINS: There's another landfill that was used from about the late 1919s up until 1942. We call that Site 2. That's up near where the carriers are.

So that's a relatively ancient landfill compared to Site 5. Site 5's been out of commission now for a good 30 or 40 some years.

MR. GEILENFELDT: Where you're looking in the upper right-hand corner of the picture where the carriers are docked, the Stennis and Nimitz are right on that upper right-hand corner, just to give you a perspective.

MR. WONG: Anything else?

MR. GEILENFELDT: One thing you might add is there may be a question are we drinking this water?

The water that we drink on Coronado does not come from the ground. It comes from Otay Mesa, and it's piped all the way down from Imperial Beach and all the way up the Silver Strand. All the water that you drink here does not come from anything in these contaminated areas, so you don't have to worry about that.

MS. MARRON: However, if the stuff from Site 5 reaches the ocean, we could be swimming in it or our dogs could be lapping it up.

MR. GEILENFELDT: That's very true, Dottie. That's why this is of concern. You don't want any of this type of material floating into the bay or the ocean, either one. That's what these guys are

all about to try to preserve all this. Keep it natural.

That's what Leticia's department does is make sure these Navy people are doing this the way it's supposed to be done.

MR. WONG: Thank you for your attention. Appreciate it.

MR. LOCKE: Thanks, Rich.

I guess the next agenda item is the Coronado Flower Show, which Bob is going to give us.

MR. GEILENFELDT: First of all, I want to thank again all of you for attending and taking time to come and see us. We really do appreciate it.

We had many, many people who participated. As always, our loyal Foster Marshall and John Locke and Bill Collins and Bill Ulmer. The Navy staff was kind enough to bring that nice picture of NAS, which is always an eye catcher. Leticia Hernandez was there and Mark Bonsavage and Charles Perry. There were quite a few people that helped us at the booth to make sure we were receptive to you all when you came up to see us.

The booth was a little differently

relocated this year. Last year we had the booth over towards the right-hand side as you walk from the men's display area. This year we got moved to the last booth. It was a surprise, and next year I'll make sure that that doesn't happen, but the point is you found us and we appreciate it.

MS. KEELING: Show a couple of flowers and you might get a better location.

MR. GEILENFELDT: There you go.

These Navy displays are always helpful, and we appreciate the Navy bringing this equipment in so we can see what the operation is in a very large perspective.

We had 14 other individuals who signed up besides you six, and we sent letters to each of you, as you know. In fact, one of you even brought the letter.

That was yours, wasn't it, Bill, that you brought?

MR. TATE: Right.

MR. GEILENFELDT: I appreciate that.

These letters were just to remind you again that we really appreciate your attendance and give you perspective as to what we're going to cover tonight, as you saw in that second page that

was attached.

In addition to that, Leticia called all of you to remind you. We don't mean to bug you, but we want you to know when these meetings are going to be held so you can put it on your schedule.

And, of course, I called also last night to all of you. We do appreciate having all six of you here this evening. Again, I keep saying that, but I can't tell you how much we feel this is important that we have citizen input and citizens to overview what these people are doing. They spend a lot of your taxpayer dollars here, so it's very important that we make sure that we're satisfied with what they're doing.

We had four more citizens that attended that were very interested and would like to have attended tonight but they had other commitments, but they asked to be -- in addition to not being able to attend, they said they were still very interested and would like to come to future meetings. So we have another four out of the 20 who are still interested in coming to our meetings. we're going to make sure that they are notified as well as you will be notified in the future.

I feel that the flower show is a very important outlet which allows us, the City of Coronado and the Navy, to inform the citizenry as to what they're doing out here. It doesn't -- I know it's a little complicated. It took me a year to figure out what these guys were talking about, but I think it's very important that we stay on this and make sure that we're happy with what they're doing.

The Site 5 was a very critical area, and we had a lot of citizen input here and the Navy listens. It's very constructive criticism that they want from Coronadans.

I would like for you to send a letter to Carol Cartwright, if you would do that, thanking her for letting us have a space. Carol Cartwright is in charge of the booths at the Flower Show and she allows us to have a booth there every year.

As you can see, the Flower Show is a Coronado specimen, if I can use that term. It's been going on for 70 years, and it's a nice way for everybody to see how citizens of Coronado join together to put on a very beautiful event.

We would like to have this booth next year. We need to have input on it to see if we are

interested in this, whether or not we'd like to have the booth at the Coronado Flower Show next year.

Could I have some input on that?

MR. LOCKE: Definitely.

DR. MARSHALL: A lot of fun. Good idea.

MR. GEILENFELDT: And it gives us a chance to talk to people, and it allows you to see the good-looking girls.

DR. MARSHALL: As well as the wives, by the way.

MR. GEILENFELDT: Seriously, though, it's a very important event. I enjoy going, and I'm not much on flowers, but I can tell you I really appreciate what these ladies do to put this program on, and I feel it's a very important opportunity for us to show what the Navy's doing here.

Again, I want to thank each and every one of you for taking the time this evening, and we'll keep you informed as to what progress we're having with future meetings and whatnot.

MS. KEELING: As a novice, I'm kind of curious as to when it's appropriate to talk about some other long-range planning.

I understand that there may be the

study fairly soon to see about putting Third and Fourth Avenue underground, and I assume or hope that you're going to be participating in that in some manner because of the potential effects on the areas.

MR. COLLINS: I can answer that and, unfortunately, it won't be the best answer that you wanted.

Our mission, as assigned to us by the Navy and by the President also, who specified that we would go from our daytime normal meetings with regulators and a few public people to nighttime meetings to allow more of the public to come in, our mission really is only in cleaning up the old wastes, and that's where we're focused.

Congress has decided that there would be public participation in our program. The President has told us when it will occur, and it also happens at other times when we produce documents, we'll have other meetings for that. There's state requirements for participation.

We can't get into things like current projects that involve either sighting of ships, building buildings. The storm water program is normally not what we do, our air program, how we

deal with waste that's produced today. We don't deal with that. That's something that Congress has to decide what to do. Congress has mandated that the public be involved in handling old wastes and cleaning up sites because it does affect communities.

In theory, if all the operations are done presently now in the proper way and obey the law and there are no adverse releases to the air, the water, the ground anymore and everything is hunky-dory. So I don't know. And those other programs also have their own methods for public participation.

MS. KEELING: And maybe as citizens what we need to do is make sure they embark on a study that they reach out to you folks who know about the geology, the areas you've worked on and take a look at that.

MR. LOCKE: We can get involved if the sites are going to impact the project. Like if the tunnel came close to one of our sites and there could be --

MR. COLLINS: Then we would have input to that. I can guarantee you, we would have input to that.

MR. GEILENFELDT: To answer your question, Lynn, in perspective, the view of the City of Coronado is this tunnel project is a little way out in time frame, as you probably know. There are issues that -- a lot of issues and a lot of money that needs to be resolved before that ever comes to be.

But one of the issues that we do discuss here is transportation through these corridors, Third and Fourth Street, and in the Site 5 issue that came up. So you need to -- part of this program is to keep you, the citizenry, informed as to how they haul this stuff out of here, what kind of equipment they're using, what time do they do it.

MR. COLLINS: Our general plan affects the city.

MR. GEILENFELDT: Because you're hauling this stuff through the City of Coronado and city streets, Third and Fourth Avenue, Ocean Boulevard.

MR. COLLINS: That's right. We can take input for that, but that's something that is going on today that's related to the waste of the past -- to the activities of the past. So it's tied in, and it's part of public participation, and we do

listen. Public concern is a big part of this job.

MS. STARLING: Bill, I have a quick question. Regarding transportation on that, what are the risks of hauling this across the bridge? I mean, I'm new so everything is --

MR. COLLINS: I'd like to tell you it's next to none. I mean we haul -- commercial haulers are always hauling fuels and things like that across the bridge and there's never a problem.

MS. STARLING: What in the compounds are hazardous to our health?

MR. COLLINS: Well, the chlorinated VOCs -- depending on the compound, the risks vary. But as in the case of the material from Site 5, there was some risk, but most of what was in the drum was soil with no risk. And then in the pores and stuff it depended. It could have been a little less in some to just damp, and in others there was contaminants.

Our volatiles in this case are not the type of volatiles that are going to explode. We call them volatiles because they tend to evaporate. That's how it gets that name. And the risk really wouldn't have been that big a risk.

The bins in this case were sealed, and

we checked them with meters. We checked every bin before it left, at least double-checked. Between our contractor and PWC -- that's our Public Works Center -- or another contractor on contract with the Navy, too, double-checked to make sure there's no problem.

And the Department of Transportation recognizes this, too. So if you have your driver out there who's certified to haul this stuff, the company he works for is licensed to haul all of this, and everybody knows the rules and you pay attention to what's going on on the road and you drive the speed limit, pay attention and stop where you're supposed to and don't goof off while you're driving, it should be no worse than hauling a truckload of bread anywhere.

MR. GEILENFELDT: I think Jennifer's concern, too, is the fact that traffic is increasing exponentially on this island, and you worry about all these trucks. It may not be that truck driver, but somebody else could cause a problem.

MR. COLLINS: Well, we try to watch for every driver, I have to admit that.

MR. GEILENFELDT: But that's a concern.

MS. STARLING: Just worse case scenario, and there is a chance -- there's not that high of a chance, but in the event that there's a drunk driver on the bridge in the middle of the night when a truck's coming through and he's got to avoid this, what happens if, number one, it goes in the bay or, number two, there's an accident?

MR. COLLINS: If it goes into the bay, it will be a very expensive cleanup. And, unfortunately, there's a lot of bay around here.

DR. MARSHALL: We don't go over the bridge. We go out Imperial Beach.

MR. COLLINS: Or we can go over the bridge sometimes.

DR. MARSHALL: We haven't, though, is what I'm saying, have we?

MR. COLLINS: We go both ways.

Now, on the Site 5 cleanup it made sense with the way the site was in relationship to Coronado, we went down the Strand. That would make good sense.

And in this case here we controlled the number of trucks. Five trucks is what we limited ourselves to.

MR. WONG: Five trucks per day.

MR. COLLINS: I'm sure that we probably could have sent 10 or 20. We hired a good company and they hauled and they obeyed the law, so we had a plan and it called for no more than five. And I think there's less inconvenience when you have five than having a parade.

MR. GEILENFELDT: And they were hauling at night, is that the case?

MR. COLLINS: We didn't haul at night. We left the base after 9:00 in the morning about probably, and we didn't send anything out after like 3:00 or so in the afternoon.

MR. WONG: Our plan was to avoid that rush hour period. Send the trucks out after everybody --

MR. GEILENFELDT: So it was non-rush hour.

MR. WONG: Non-rush hour; right.

MR. GEILENFELDT: And isn't the fire chief notified of what the program is?

MR. WONG: We talked to him, and his input was taken into account and he was told.

MR. COLLINS: The fire chief came to our meeting last August and gave us quite a bit of input, and then met with us separately to make sure everything was fine.

MS. STARLING: One more follow-up question. I'm just trying to get up to speed a little bit.

MR. COLLINS: Sure.

MS. STARLING: Do you have a general idea of about how many of these trucks you'll need?

MR. COLLINS: You mean over time? It depends on the job till it's done.

MS. STARLING: Do you have an estimated idea of how many?

MR. COLLINS: No.

MS. STARLING: Not until you get into it and stuff.

MR. COLLINS: Right. It depends on the kind of cure. If you're going to inject chemicals into the ground and you have a way to clean up everything right there in place and not have to dig up any hazardous waste and move it, that's one thing. You might end up with a few trucks operating during this time.

But if you're going to dig up 20-, 30,000 cubic yards of material and you can only put like 20 yards on a truck at the most, you can see that you could have potentially thousands of trucks for any one particular problem -- from next to nothing to a lot more than you would want to

believe, and our goal is to minimize that.

In fact, EPA and the Navy and I believe the state thinks that if you can treat it on-site and leave it there, you're far better off. That way you also don't have the problems of digging it up and causing maybe possible other safety hazards there just from other people having to deal with it.

So if you can deal with it at the site, even if you have to dig it up and clean it at the site and put it back in the ground clean, you're far better off than having to drive it 80, 90 miles or a thousand miles to get it treated.

There was a guy -- this company from Canada called me up. They have high temperature incinerators up there, and they're looking for business. And he said, "Well, why don't you ship us your waste."

I said, "Way to go. At $200 a cubic yard to have it cleaned out, that's a long way to go."

MS. KEELING: They wanted to make your treatments incinerator mobile.

MR. COLLINS: Well, you know, a lot of Californians don't like incinerators, so you've got

trade-offs. Some technologies aren't appreciated, even though they're absolutely safe and they work really well; and then others are more appreciated because they at least appear not to be as dangerous.

So it's a big game, trade-offs, and what works best costs too much. There might be that the perfect system, unfortunately, costs more than you can afford, more than any of us can afford, but it might be really good and so it never shows up, so we have to compromise.

And as long as we can reduce the risk and make things safer, that's the best.

MR. GEILENFELDT: Any more questions?

MS. MARRON: I'd like to make a couple of comments now about the Site 5 action.

I know that that was a time critical removal action and that now you're looking at longer term solutions, but I just want to urge the Navy to not be so concerned about adversely affecting operations that they just let natural attenuation take care of everything.

I think the proximity to the slough and the danger of contamination in the ocean when you're so close to a public area should perhaps

override those concerns. I think that the Navy could make allowances for that, so I just want to urge them to do that.

MR. GEILENFELDT: Good point.

MR. LOCKE: Point taken. Thank you.

Any more comments?

MR. TATE: During what time of the day do they ship the material out by truck?

MR. COLLINS: I think that the Public Works Center generally ships waste -- do you remember right off hand? It's after 8:00 in the morning, I know that.

MR. WONG: For Site 5 we specifically kept between 9:00 a.m. and 2:00 p.m. we tried to get out. But they're in that window about as well because there's just the inspections that need to occur before we send the trucks out on the road.

MR. COLLINS: In the Public Works Center permit to operate on base, they worked out an agreement with DTSC and the city, so they have a narrow window, also. They may be a little larger than ours, but let's say it won't be any earlier than 8:30 or 8:00 in the morning until 4:00 at night or in the afternoon. That's what I mean, not at night.

MR. KINZLER: After the traffic has been in and out.

MR. COLLINS: Yes. That's the whole idea is to not put such a burden on the city that it makes things impossible.

So they have their rules, and they can't break them either. They have to live by those rules or they violate their permit. We made our window just a little tighter than theirs, and it's worked out fine for us.

MR. GEILENFELDT: I want to comment that I did attend some of the contractor meetings that were held prior to the Site 5 project beginning, and the planning that went into this was incredible.

Bill and, of course, all of the people that were involved in this, they did an extensive amount of research before they started conducting this excavation. I felt comfortable because I saw some information in these meetings that you probably wouldn't have been exposed to, and it made me feel comfortable to know that the research in advance preparation was incredible for that Site 5 program.

MR. COLLINS: Does everybody want to join

the RAB? I mean, you came to one meeting.

MR. GEILENFELDT: We would like to have you if you're interested in becoming a regular member like Foster and Dottie. They've been here for many, many years. And, of course, she's been out of the country but she was dedicated enough to come back.

If any of you are interested in being notified on a regular basis, you're put on a regular notification program where you receive copies of information that is published by these people to keep you informed as we go along, not just for this meeting.

MR. COLLINS: And there's an application, too, if you want to become a voting member of the RAB. It's our short acronym for Restoration Advisory Board.

MS. KEELING: Is it there?

MR. COLLINS: There was one in the fact sheets we handed out. If we have your address, we can mail you one.

MR. GEILENFELDT: What we'll do is we'll make sure each of you receive one. We have your mailing addresses.

MR. LOCKE: I didn't bring any extra fact

sheets.

MR. GEILENFELDT: We'll make sure you all get one.

MS. MARRON: I know when I first started, it was very difficult to understand what they were talking about. They were going on about the vadose zone and the DNAPL and the VOCs, but after a while, it's just amazing. It all starts to make sense after a few meetings, and you don't forget, even if you leave town for a couple of years and come back. It just sort of stays with you.

So join and open up a whole new world of toxic waste to yourself.

MR. COLLINS: For those of you that don't know it, Dottie used to be the RAB Community Co-Chair. She had the job for several years.

MS. MARRON: Ran unopposed every year because nobody else wanted to do it.

MR. LOCKE: Also there's an Information Repository inside the library here. There's a computer there and some bookshelves. There's a CD that you can load into the computer and look at the documents. It's an easy way to -- there's hot words that skip into the document and what have you.

MS. MARRON: I find reading the summaries first is good. Read the summaries first and then just go back for the highlights.

MR. COLLINS: There is a problem with the Information Repository. For those of you who don't know it, this library is going to be remodeled starting this summer for 18 months, and so we're actually being asked to remove our books and our bookshelves and our computer, and we have to find another place to set up. So if any of you have space in your homes.

There's somebody in town that would give us space. We're going to have to check with the city and the -- I know they have a city office down here. I don't know if we can use a tiny space.

MR. GEILENFELDT: They don't have any room down there.

MR. COLLINS: I don't know what we're going to do, but if you join the RAB, you'll be on our mailing list, and I make sure that you get every letter that I write -- that my team writes so that you know what's going on and you get -- for those reports that you might want to read, we provide copies. A lot of them we end up putting out on CDs

because they're easier to mail and if you have a computer at home, you can pop it in and read it.

We definitely provide you with information. Foster can tell you that.

DR. MARSHALL: It's very good.

MR. COLLINS: And we need Dottie's new address so we can start populating her apartment with material.

MS. MARRON: I think you have it.

MR. COLLINS: Do we have the new one? Okay.

MR. GEILENFELDT: One more important item: I don't want you new attendees to think that there's just these two sites. There's -- how many sites are there now?

MR. COLLINS: Actually, there are several large sites like this and there are many little ones that really were just places where we used to have a tank in the ground that had hazardous waste in it at one time. All of our tanks have been removed from the ground.

And I can report this week that DTSC, that's the Department of Toxic Substances and Control, actually delisted ten of our tank sites that we had to worry about. So now we still have 130 little problem sites on North Island. As I

say, some of them are smaller than your garage area, and the largest one that's still a problem is 50 acres.

MS. MARRON: Are we going to look at the amphib base stuff? Didn't they have three sites down there?

MR. GEILENFELDT: I'm going to bring that up, Dottie, right now, now that you mention it.

MS. MARRON: Okay.

MR. GEILENFELDT: Recently the City of Coronado was sent a letter from DTSC, Leticia, stating that NAB -- that's the Naval base that's south of here where the Seals train. That's another area that is under this jurisdiction -- and your department, Mr. Bautista, sent the City of Coronado a letter stating that they received a request from the Department of the Navy to provide a potential state and local site specific location and chemical applicable for relevant and appropriate requirements. It's called ARAR. That's a Navy short term.

What they're saying here is that petroleum products, including solvents and paints, are the primary chemicals used at this base. The results of the recent study of the sediments

related to Sites 2 and 4, and Sites 2 and 4, incidentally, Leticia, are -- if you're familiar with the Naval base, it's got a little peninsula out there from the bridge -- below the bridge. It's close to this new bird habitat that they're building. I understand it's right in that area.

These chemicals, apparently, represent a problem on what we call Sites 2 and 4, according to this letter to the City of Coronado. And the educated potential unacceptable risk due to the presence of contaminants that include -- some of these I have no idea what they are -- aphthalene, arsenic, copper, lead, mercury, zinc, several PAHs, DDT, and PCBs that warrants additional evaluation.

MS. MARRON: They're carcinogens.

MR. GEILENFELDT: I was just wondering what -- the City of Coronado is asking me to present this because you sent this letter to the city.

MR. COLLINS: That's the ARARs letter?

MR. GEILENFELDT: Yes. They're asking for an evaluation of this or what the status is on this. I have no idea.

MR. COLLINS: I can address this, since I signed the letter that left the Navy.

We're in the process of doing a remedial investigation at that site. That's the step before a Feasibility Study, and generally a step that may precede a removal action, a clean up of some sort.

We asked the state to identify for us any laws -- any state laws or county regulations, city regulations, things like that that may affect the eventual cleanup of this site. By knowing which particular laws are involved and any cleanup standards that are associated with each one of them, then we can more properly design our investigation program to look for the right things so we can answer the question the right way the first time rather than complete the study and then say, "Well, we should have done that, too" and have to go back and do more.

So we ask what these various laws are, and then we look to see how they relate to the whole program. The Water Board would be involved in this because they have laws and regulations and resolutions dealing with water -- mostly with water, some with landfills and things like that.

And the state has its own rules. The Department of Transportation has rules if you're

going to be moving the trucks on the ground or leaving the place.

It seems like every state agency out there has got an interest in the environment in some way, shape or form. They all have things that may affect our program, so we asked them to identify those up front. Tell us what you think they are so we can discuss them.

On the other hand, we go out and we try to identify all the federal laws that are going to affect us, whether it's the Endangered Species Act or the Migratory Birds Act or the National Marine Fisheries Act or the CERCLA program, RCRA program -- which is the Resource Conservation & Recovery Act -- which deals with hazardous waste, and the federal Clean Water Program and air programs, and everybody's got their hands in this one way or another.

And you know how it is in California. Every year or two there's a new environmental law. There's supposedly something like 125,000 laws every year that get passed in this country.

It's hard to keep up with them all, so we ask for input so we can figure out what we need to do.

MR. GEILENFELDT: So I can tell the city that this is something that's going to be -- this is going to be further inspected? You're going to have more research on this?

MR. COLLINS: Yes.

MR. GEILENFELDT: I just have to let them know what this is all about.

MR. COLLINS: And if the city is the least bit confused, they should call Doug Bautista. It's his phone number and he can help them. There's going to be a lot more work out there.

And this is a question we pose to the state to get them to help us, too.

MR. GEILENFELDT: Apparently the main concern was the proximity of this site to this new bird sanctuary that the Navy is building.

Is that right adjacent to this?

MR. COLLINS: It's not really right next to it. It's on the same side of the base.

MR. GEILENFELDT: When you go down the Strand there, the Navy is building from the dredged material from the Regan pier or the new carrier pier, all of that is being moved down towards this NAB area, and they're literally building an island for a fish sanctuary -- bird sanctuary -- fish and

birds, whatever. That is an area that should be addressed here because apparently the city is concerned about it.

MS. MARRON: But also if you create a nesting area down there, the birds are not necessarily going to cooperate and just hang out on the island. They will spread out to the surrounding areas as well.

MR. COLLINS: And do whatever they want pretty much.

MR. GEILENFELDT: Good. Thank you.

MR. LOCKE: Thank you.

The next RAB meeting.

MR. COLLINS: We meet quarterly, and we meet on the third Thursday, if at all possible. Our next meeting is August 15th, and we have to find a room still.

The police station has a room over here, and we're going to check into that some more. I know other groups use it at night or have used it. There's no air conditioning we're told. If that fails, last month we met at the middle school because somebody stole this room from us.

MS. BOYD: Nobody stole this room from us. It wasn't used, but they wouldn't let us have it.

MR. GEILENFELDT: You all will be notified as to where this meeting is going to be and the time to make arrangements.

MR. COLLINS: And you'll get copies of the minutes ahead of time, too.

MS. KEELING: If we go ahead and join the Board and we're not able to attend the meeting, if we shmoosed you nicely, can we maybe participate telephonically?

MR. LOCKE: I can get that equipment as long as the room has a telephone hook up.

MR. COLLINS: And if for some reason you decide not to join and attend our meetings four times a year, if you ever have questions, you can just wander in also. That would be a non-voting status, but we still listen to you.

We're missing Marilyn tonight, but we generally have a few people that wander in and stay for a couple of hours and participate that way and ask a few questions.

MS. KEELING: But you'd really like to beef up the Board, wouldn't you?

MR. GEILENFELDT: We prefer to have you as members if you see fit to join.

MR. COLLINS: We are looking for input,

that's for sure. And we've gotten a lot of good ideas from the RAB community members in the past, and it has changed the way we were going to conduct some of our removals. And if nobody had come to the meetings and told us, we'd have just done it our way.

MR. LOCKE: Do we have any input for agenda items for the next meeting?

DR. MARSHALL: Could we talk about NAB? Will we have information by then?

MR. LOCKE: Site 2 and 4 NAB.

DR. MARSHALL: We're hearing it for the first time, at least I am.

MR. GEILENFELDT: Well, I didn't know anything about it until I got this.

MS. MARRON: There's an undiscovered ordnance site down there, too.

DR. MARSHALL: Also, I think the people in the group ought to know that the Navy owns the land and the water, and as people encroach on it because the Navy has been kind, so they've been told not to come in there right now, and a lot of people have gotten a little angry about this.

MS. MARRON: On the other side of the Strand on the beach side?

MR. COLLINS: Oh, you're talking about the beach over there.

DR. MARSHALL: No, it's actually bay side. That's Navy property and they've let people come in and fish there and do all these things, and the people thought it was their right, and the Navy owns not the shoreline but the water, how far it goes out.

We need to hear things like that. It's important.

MS. HERNANDEZ: Do you want me to tell Doug to come next time and maybe he can give a presentation?

MR. GEILENFELDT: That would be great.

MR. COLLINS: Doug could maybe talk to Mark and see how best to handle that issue for presentation or even Charles. Charles is our RPM for the NAB sites. Doug and Charles can iron that out.

I think we'll do a Site 9 update again. We'll have a lot of good stuff to tell you then.

And Site 5, we'll have an update. There should be a lot to talk about there. And I don't know about anything else right now.

We try not to do too many things in one

night; otherwise, we have five minutes per topic and we never get to talk about much.

MR. LOCKE: I'd like to bring up the subject of a RAB tour. We can set up a bus or you can call me personally and I could take you out there. Bill and I can do that. We usually have a tour every year. We haven't had one in a couple of years, so that can be arranged.

MR. GEILENFELDT: To you new attendees, this is very interesting. They take you out to these sites, and even though the 9/11 scenario is in place, I'm sure that they can work it out on the base. And this is really -- I mean, to see this equipment and see what these people are doing, it's just awesome.

MS. MARRON: Are the lest terns nesting on the runway again?

MR. LOCKE: I don't know about the runway.

DR. MARSHALL: I would say no.

MS. MARRON: They used to.

DR. MARSHALL: I know, but I would say no when those planes come in, they're really loud.

MR. GEILENFELDT: We should be interested in this type of a program and actually take this tour. It takes all day or pretty much all day, doesn't

it? They normally tour both bases. They do NAS and NAB, both.

MR. COLLINS: At least six hours.

MR. LOCKE: It's a good tour.

MR. GEILENFELDT: It's time well spent, believe me.

MR. COLLINS: Maybe we can set up something for maybe early August, something like that.

MR. LOCKE: Maybe the weekend after the RAB meeting?

MR. GEILENFELDT: Let me ask you. When would be a good time?

MS. STARLING: The sooner the better.

MR. COLLINS: We can do it in June, too.

MS. STARLING: That would be good for me.

MR. COLLINS: Saturdays work best. We'll try June 8th or something like that or the 22nd. June 22nd? That gives us a little more time.

MR. GEILENFELDT: June 22nd? Does that sound favorable?

MR. COLLINS: It's a good tour.

MR. GEILENFELDT: I've been on it and I would like to go again. It's just amazing what's going on out there.

MR. COLLINS: We'll go to the most active

sites where we've actually done something and we can show you, and some of the problem areas so you can see why we're still going to do something or why we're getting ready to do it, and you also get to witness what it's like working out there in the areas that we're at with the planes and all the equipment. It's worse during the week. That's why it's better if we go Saturday.

MS. KEELING: And the August 15th meeting is certain or tentative?

MR. COLLINS: That's certain.

MR. TATE: Concerning a meeting room for next month, right across the street at the police station they have several rooms. There's one large one. Write down the phone number 522-7350 and ask for Chief Robert Hutton, and see what they come up with for you.

MR. GEILENFELDT: I wrote that down.

MR. COLLINS: We'll look into it. We'd like to keep it convenient so everybody knows where to go.

MR. LOCKE: I'd like to adjourn the meeting if there's no objection.

Whereupon, at 8:10 p.m. the RAB meeting was adjourned.)

STATE OF CALIFORNIA)
: ss
COUNTY OF SAN DIEGO)

I, Nancy A. Lee, CSR No. 3870, do hereby certify that I reported in shorthand the above proceedings on Thursday, May 16, 2002, at 640 Orange Avenue, Winn Room in the City of Coronado, County of San Diego, State of California; and I do further certify that the above and foregoing pages numbered 1 to 78, inclusive, contain a true and correct transcript of all of said proceedings?

Dated: _____, 2002.

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NANCY A. LEE